



# LSTM Prospectus 2016 | 17

Saving Lives  
Through Research  
& Education



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## Director's welcome

**Welcome to the Liverpool School of Tropical Medicine, and thank you for expressing interest to study on one of our programmes.**

Ever since it was founded in 1898, LSTM has been at the forefront of providing our stakeholders with the scientific evidence to translate relevant science into policy and practice. We do that by working collaboratively in over 70 countries to fulfil our mission of improving the health of the world's poorest people.

Our multidisciplinary approach to global health research allows us to translate research innovation and scientific breakthroughs from laboratory research into effective interventions for those most in need.

It is testament to our ongoing success that LSTM continues to expand. We have matched our investment in new facilities, such as the newly opened Wolfson Building, with investment in new talent, and we have increased our staff numbers from 160 in 2001 to over 440 by the end of 2015.

As one of the few postgraduate centres of excellence in the field of tropical medicine, we are enthusiastic about offering our unrivalled learning opportunities to students within the UK, and across the developing world, to provide them with the opportunity to excel in their careers in public health, medicine, and academia.

I do hope that you will enjoy finding out more about who we are. The work we do helps to save countless lives, and I invite you to contact us directly if you would like more information.

**Professor Janet Hemingway**

CBE FRS DSc PhD BSc  
FMedSci FRCP  
FRES FAAM Foreign  
Associated National  
Academy of Sciences USA



# Why LSTM?

**When you join LSTM, you will be joining a family that meet in the most unlikely and remote places around the world.**

Our staff & alumni have been part of the Ebola Response in West Africa; they were treating patients in Haiti after the earthquake; they were on some of the first flights to Thailand after the Tsunami; they have built roads where there were none; they have negotiated to secure aid whilst civil war and unrest were rife; they have brought hope to refugee camps; and closer to home they have advised the UK government on our response to Tropical & Infectious Diseases. From Medics and Nurses to Water & Sanitation Technical Experts, from managing a TB programme in Sudan to creating new vaccines, from measuring parasites in lakes to finding new molecules; LSTM staff and alumni are making a difference in the world.

## How do we measure up against the competition?

### REF2014

Research Excellence Framework

LSTM appeared on the REF2014 rankings under its own name for the first time following its designation as a Higher Education Institution (HEI) in July, 2013. LSTM provided joint submissions with the University of Liverpool (Clinical Medicine) and the University of Warwick (Public Health). Previously, all of our REF submissions were within the results for the University of Liverpool.

With 6th place in the ranking of institutions on impact, LSTM places itself amongst some of the major research institutions in the UK, with an overall score of 60% in the outstanding category and 36% in the international excellence category.



LSTM scored exceptionally well on the 'Times Higher Education' ranking of institutions on impact by taking 6th place out of 128, and almost all of the LSTM impact case studies submitted were considered to be internationally excellent or outstanding. Overall, LSTM scored 24th place out of 128 assessed HEI's.

### Professor Luis Cuevas

*"Our MSc offer opportunities to conduct a research dissertation. You can join teams conducting research in countries with high burden of disease, or in our first class laboratories. This is often the start for a long term partnership between you, staff, and overseas partners."*



Access world leading **researchers** in the field of Tropical Medicine

Over **440** staff in the UK and based abroad



LSTM offers a **full range** of specialised programmes, from short courses to PhD level, allowing a continuous opportunity to study in the **UK and abroad**

Over **£210 million** - value of research portfolio

**Highest** number of medical entomologists in the UK

**Herpatarium** one of the biggest collections of venomous snakes in Europe



Learn from the **best** in the field!

**217%** growth in research income over past 10 years

**70** Numbers of countries with whom we have collaborative activity

**561** Taught students in 14/15

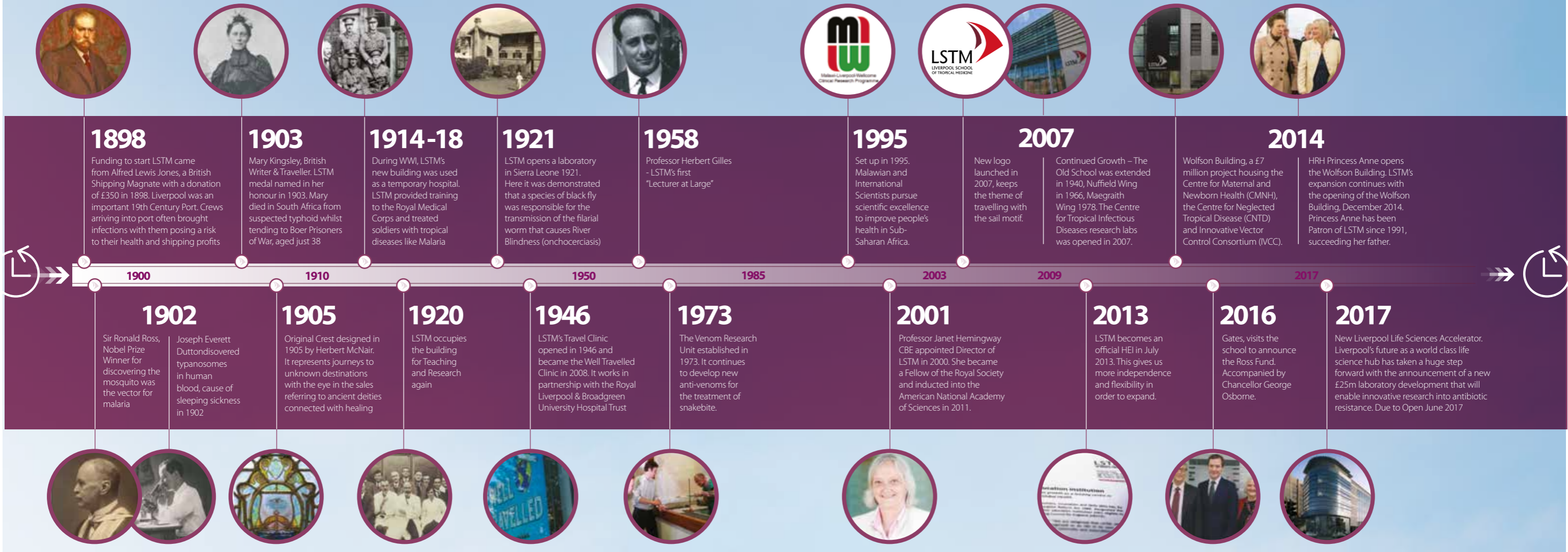
**6<sup>th</sup>** place out of 128 for 2014 REF for the Category **IMPACT**, with an **OVERALL** score of 24 out of 128

# Our story

LSTM's principal inter-related functions are research, teaching, and consultative activities. LSTM is extensively involved in national and international programmes to control tropical disease and to develop effective healthcare systems. This commitment continues with our Centre for Tropical & Infectious Diseases (CTID), a state-of-the-art research centre for developing new drugs, vaccines, and pesticides to combat some of the world's deadliest diseases. LSTM has links with health ministries, universities, and research institutions worldwide.

LSTM was founded in 1898 by local shipping owner, Sir Alfred Lewis Jones, and it is the oldest institution of its kind in the world. Professor of Tropical Medicine, Sir Ronald Ross, was awarded the Nobel Prize in 1902 for discovering the mode of malaria transmission. Over 400 academics, research, and support staff are

employed in LSTM, and each year around 700 students from more than 70 countries attend for tuition ranging from three-year PhD research programmes, and one-year Masters degrees to two-day short courses.



# A world in **one city**

Liverpool is a fantastic student city, bursting with opportunities and lots of things to do; a legendary music scene that's bigger than just the Beatles, a city centre packed with clubs, pubs, bars, restaurants, and cafes. Plus award-winning shopping facilities, museums, galleries, and theatres, not to mention two Premier League football clubs, golf courses, beautiful parks, and outstanding countryside within a few miles drive. It is also a multi-racial and multicultural city supporting a diverse range of religions and communities. Liverpool is a city that is very supportive of all the students who choose to live, work, and study here.

# Great Reasons to choose **Liverpool**

One of the most  
**affordable  
and safest**  
student cities in the UK



**Liverpool One**  
the city's £1 billion award-winning shopping development  
– attracts two million visitors every month



Free events on all  
through year see  
[www.visitliverpool.co.uk](http://www.visitliverpool.co.uk)



**2 hours**  
away from  
London by train

**World Heritage Site**  
status for the City Skyline – the same status  
as the Pyramids and the Taj Mahal!

Liverpool is hard  
to beat for its  
**central**  
position



John Lennon Airport  
connects to more than  
**650 destinations**  
worldwide



**Liverpool has PurpleFlag status**  
– national award which recognises safe, clean,  
and well-managed city centres at night

Liverpool is  
ranked in the **top 10**  
cities to visit  
in the world  
(Rough Guides, 2014)



Liverpool has been voted the  
**friendliest city in the UK**  
(YouGov poll, December, 2015)  
& **4th friendliest city in the World**  
(Rough Guides, 2015)



# Facilities

LSTM has well-equipped, modern teaching and research facilities, in keeping with an institution at the cutting edge of tropical medicine. Major refurbishment of the main teaching areas began in 2015 and continued in 2016, including a major overhaul of the library facilities, all audio-visual equipment, creation of new collaborative group spaces, and more flexible teaching rooms with ability to change size through moveable walls. Teaching methods and programme content are continuously evaluated. We place importance on small group teaching which allows the independent learning experience to come to the forefront of the class. It also helps students build communication skills through group presentations, contributions in class and other assignments.

## Computer & Virtual Learning Facilities

LSTM has excellent computer facilities for students, with a dedicated computer lab, as well as full Wi-Fi access for your laptops and tablet computers. There are additional computing facilities in the main building and a new bioinformatics research area in the CTID. Students can also be provided with induction training in computer use. LSTM has a team of dedicated IT engineers and a Technology Enhanced Learning Unit to provide technical support.

## The Donald Mason Library

The Donald Mason Library is a specialised facility designed to give help and support to all students. There has been a library at LSTM since its earliest years. Sir Ronald Ross donated some of his own books to form the nucleus of the first library collection. Today, the library holds approximately 14,000 books and 50,000 bound volumes of periodicals. The core collection of the library represents LSTM's highly specialised areas of study and research in parasitology, entomology, paediatrics, and international health. The library's archive and special collections attract scholars and researchers from all over the world. The library also provides access to an extensive range of e-journals.

## Student Support

Our Student Experience Officer is there to guide you through any support requirements you may need, including disability, welfare, and health and accommodation issues. As a small school, we offer an individual service to all our students. You will also have access to personal tutors, supervisors, as well as student representatives.

## Events

LSTM puts on a variety of events throughout the year to help you through the social and academic part of your student experience. Getting to know your fellow students will help you adjust quicker, and forming new networks is essential to your overall experience and wellbeing, especially so for international students. LSTM has a long history of welcoming students from all over the world and we will do our best to ensure you are settled. We run social events to help you get to know each other, as well as student led events, such as the twice-per-year International Night -not to be missed! We also hold a Humanitarian Symposium, journal clubs, NGO Forums, and a Seminar Series attended by academics and students alike. The Seminar Series is a monthly event where visiting Professors and guests will give a lunchtime presentation with Q&A sessions – these are very lively events. You can check these out on our website too!

## Dr Sue Assinder Director of Education

*"LSTM brings together students from all over the world to find out about cutting edge advances from the academics who actually did the research and also to contribute to a vibrant culture of learning in which their own experiences can be shared and valued."*



# Finance & funding

There are many ways to fund your studies at LSTM. Our students receive funding from many different sources, including Charities, NGO's, Government Ministries, Chevening, Wellcome Trust, and many others.

## Postgraduate Student Loans

Student Loans from the Student Loans Company (SLC) for Postgraduate Students available from September 2016

Please note that international students are not eligible for this loan.

The Government have announced Postgraduate Loans of up to £10,000 for eligible students who are studying a taught or research Masters course commencing in September 2016/17. These loans will be a contribution towards the costs associated with completing a Postgraduate Masters course and can be used towards tuition fees or living costs as you decide. The loan is non-means-tested and will be paid directly to you, the student, rather than LSTM.

Further details on the postgraduate loan scheme can also be found on the Student Loans Company website - [www.slc.co.uk](http://www.slc.co.uk)

## LSTM Scholarships

We welcome applications for scholarships across our range of programmes, including PhD, MSc and Professional Diplomas. Updated information on scholarships is on our website. Normally, students holding a Conditional Offer are supplied with Scholarship Forms.

## Living Costs

Liverpool is one of the most cost effective student cities in the UK and with our competitive tuition fees and comparatively low cost of living, we offer an affordable student experience at a high quality, world renowned institution. Breakdowns of costs can be found on our website.

## Professor Stephen Ward Deputy Director, LSTM

*"LSTM is a unique institution with internationally rated scientists with skills that range from molecular biology and lab sciences to public health and policy, all under the unifying banner of translations – turning knowledge into impact."*



Further details on Finance & Funding can be found on our website – [www.lstmed.ac.uk/study](http://www.lstmed.ac.uk/study)

# What programmes and courses do we offer?

## HUMANITARIAN

### Master's

- MSc Humanitarian Health Programme Management
- MSc Humanitarian Studies

### Professional Diplomas

- Diploma in Humanitarian Assistance

### PhD

### Short Courses

- Complex Humanitarian Emergencies
- Health in Humanitarian Emergencies
- Media, Policy and Advocacy in Humanitarian Action
- Management of Refugees & Displaced Populations
- Humanitarian Operations: Environmental Health & Logistics

## CLINICAL SCIENCES

### Master's

- MSc Tropical and Infectious Diseases
- MSc Tropical Paediatrics

### Professional Diplomas

- Diploma in Tropical Medicine & Hygiene

### PhD

### Short Courses

- HIV in Low Resource Settings
- Medical Bacteriology
- Essentials of TB Epidemiology, Clinical Management & Control
- HIV Epidemiology, Clinical Management & Strategies in Resource Poor Settings

## PUBLIC HEALTH

### Master's

- MSc International Public Health (intercalation)
- MSc International Public Health - Planning & Management
- MSc International Public Health - Sexual & Reproductive Health
- MSc International Public Health - Humanitarian Assistance

### Professional Diplomas

- Diploma in Sexual & Reproductive Health in Low Resource Areas
- Certificate in International Health Consultancy

### PhD

### Short Courses

- Organisation and Management
- Key concepts in Sexual Reproductive Health
- HR Planning and Management
- Maternal & Newborn Health
- Systematic Reviews for Policy & Practice (UK & in-country)
- Global Climate Change & Health
- Quality Improvements in Maternal & Newborn Health
- Statistical Methods for Epidemiological & Clinical Research
- Sexual Health and Human Sexuality
- Health Promotion
- Child Nutrition
- Development of a Disease Control Programme

## TROPICAL DISEASE BIOLOGY

### Master's

- MSc Molecular Biology of Parasites & Disease Vectors
- MSc Biology and Control of Parasites and Disease Vectors

### PhD

### Short Courses

- Molecular and Cellular Biology of Parasites & Vectors
- Parasite Epidemiology & Control
- Vector Population Biology & Control
- Immunology of Tropical Diseases
- Key Topics In Snakebite
- Applied Bioinformatics
- Laboratory Diagnosis of Faecal Parasites
- Laboratory Diagnosis of Faecal & Blood Parasites
- Laboratory Diagnosis of Malaria

# Masters at LSTM

**LSTM's Masters programmes attract highly-motivated graduates from around the world. Programmes follow a modular framework in which students follow a core set of taught modules specified for their programme and then select from a variety of optional modules. This allows you to tailor our programmes according to your individual interests and prior experience.**

Each Masters programme runs for 1 year, from September, including taught modules and a research project, leading to the submission of a dissertation. The research project is a highlight of the Masters Programme. It takes place from May to August, and can include fieldwork overseas. Every year, a proportion of research projects are hosted by LSTM Alumni, partners, or collaborators.

We aim to:

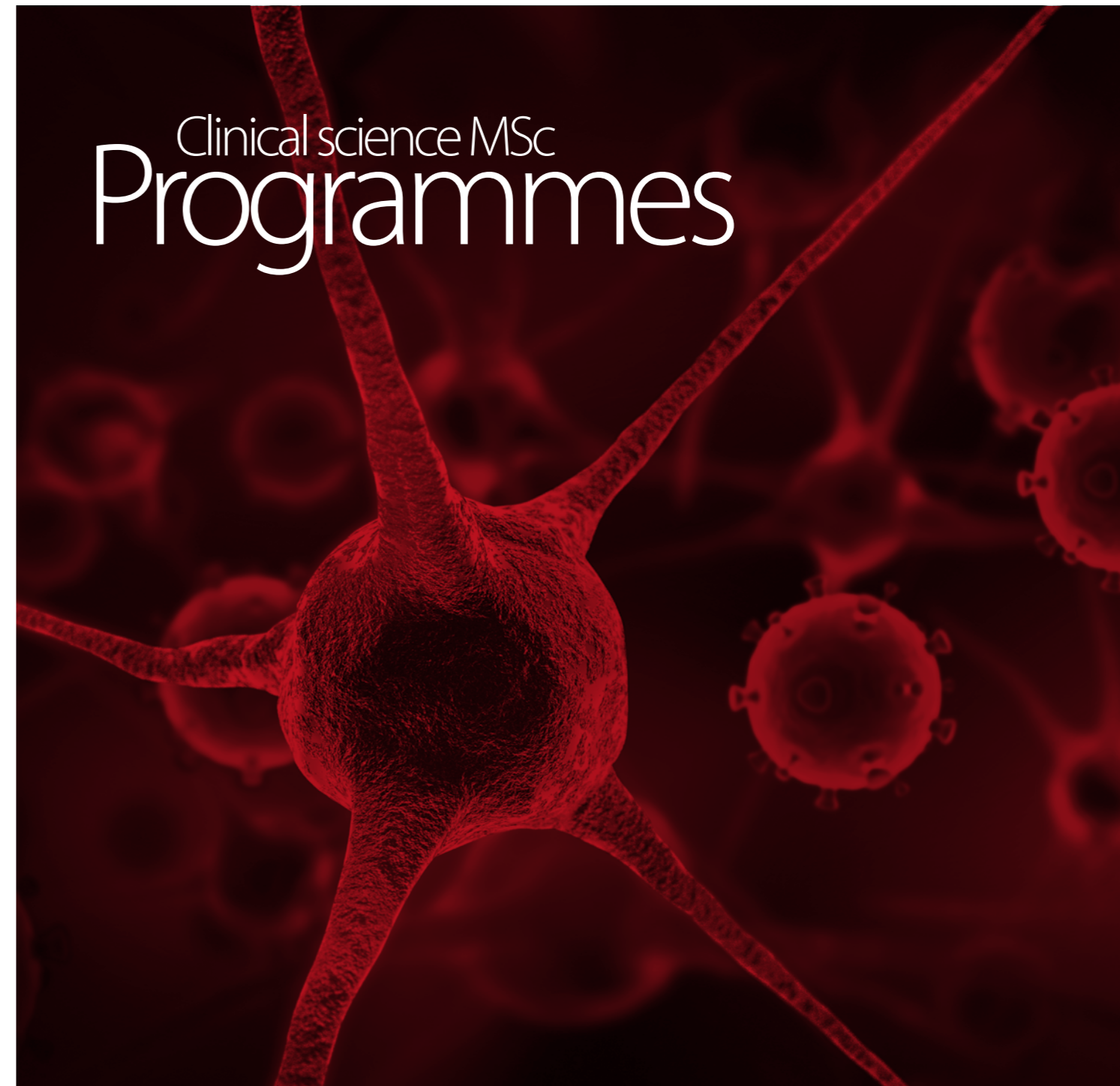
- Produce graduates who are experienced, committed, informed, proactive and effective professionals, capable of taking substantial and leading professional roles.
- Facilitate high-quality learning that is informed by critical analysis of current research
- Develop independent and reflective approaches to study that will enable graduates to continue to learn in the future.

**In addition to the information here, modular frameworks and full programme specifications are available on our website.**



**Professor David Lalloo**

*"Learn in partnership with international experts in all aspects of tropical disease. Learn where cutting edge research is conceived and carried out. Learn at an institution dedicated to improving health in the tropics."*



## Clinical science MSc Programmes



## Tropical and Infectious Diseases

(MSc/PgDip/PgCert)

### 3 good reasons to study

1. Infectious diseases are a global threat, with recent outbreaks of Avian Flu H5N1, Ebola, and Zika Virus making headlines worldwide.
2. Have a transformative learning experience at LSTM - develop curiosity, discover new areas that excite you, and deepen your understanding in areas you'd like to be an expert in and opportunities for research overseas as part of your dissertation.
3. Raise your critical awareness of global health priorities and the research underpinning them. We will also work with you to publish your dissertation research in peer reviewed journals.

#### Programme Outline

This programme focuses on the diagnosis, management, and control of the most prevalent diseases in developing countries, with particular reference to high burden diseases such as tuberculosis, HIV, malaria, respiratory infections, and diarrhoea. Emphasis is also given to the development of research skills applicable to a wide range of problems in clinical and epidemiological settings. Following the taught component, participants complete a dissertation including a period of applied research either overseas or in Liverpool. The programme is offered within a dynamic research-led environment and its content is informed by the cutting-edge research activities of the academic staff. It is designed to enable the professional development of the student, to be relevant to students from both the UK and overseas, and to promote approaches to study that will enable graduates to continue their learning into the future.

#### Programme Aims

- Provide doctors with previous experience in high burden diseases with research skills relevant to tropical and infectious diseases in low-income countries
- Develop students' knowledge and comprehension of the preventive and curative management strategies that promote health and well-being in tropical countries
- Enable students to comprehend and conduct health-related research

#### Entrance Requirements

- Medical degree plus at least two years' experience of professional work after qualification
- Other candidates who are suitably qualified by higher study or research may be considered
- Experience of working in a developing country is desirable
- English language - IELTS with an overall band score of 6.5 (and a minimum of 5.5 in all learning components).

#### Career Opportunities

The MSc Tropical and Infectious Diseases (MTID) provides a wide range of skills and training for doctors planning academic and clinical careers in resource-poor settings with endemic disease. It is an excellent qualification for doctors who wish to work in the field of health research in either a clinical or community context, as well as with international organisations specialising in health assistance-related activities. This MSc is a great springboard into clinical academic routes, and previous students have successfully applied for Wellcome Trust Clinical PhD Fellowships. Also, many students have had their research projects published in peer reviewed journals, enhancing their standing in the academic research environment.

“ Why LSTM? The reputation of the institution and the calibre of the people who are on the faculty here and I know from lots of people who I've met through my work in Infectious Diseases that LSTM's got a great reputation for teaching. Dr David Barr, 2015 ”

## Tropical Paediatrics (MSc/PgDip)

### 3 good reasons to study

1. Learning from leading experts in the field of global child health, you will identify the gaps in child health related research and service delivery, and discuss how to overcome them.
2. You will be able to become a better clinical and public health practitioner in maternal and child health, and an informed advocate for global child health.
3. You will study a specific topic related to child health, independently and in depth; from identifying the research question, through data collection and analysis, until write up.

#### Programme Outline

This programme aims to provide doctors who are practising or intend to practise in developing countries, with instruction and training in the management and control of diseases in childhood, with particular reference to endemic diseases in tropical countries. The programme addresses both curative and preventive strategies relating to common disorders of children, from both a clinical and community perspective. Emphasis is given to the development of research skills applicable to a wide range of child health-related problems, in clinical and epidemiological settings. It aims to build capacity in appraising the evidence that underlies practice, in undertaking research, and in improving the quality of health services delivered to children, both in hospital and community settings. The curriculum reflects current national and international priorities and policies in global child health. Following the taught component, participants complete a dissertation including a period of applied research, either overseas or in Liverpool. The programme is offered within a dynamic research-led environment and its content is informed by the cutting-edge research activities of the academic staff. It is designed to enable the professional development of the student, to be relevant to students from both the UK and overseas, and to promote approaches to study that will enable graduates to continue their learning into the future.

#### Programme Aims

- Provide doctors with previous experience in paediatrics and child health, with research skills relevant to child health-related problems in low-income countries
- Develop students' knowledge and comprehension of the preventive and curative management strategies that promote child health and well-being in tropical countries
- Enable students to comprehend and conduct child health-related research

#### Entrance Requirements

- Medical degree plus at least one years' experience of professional work in clinical paediatrics after qualification
- Other candidates who are suitably qualified by higher study or research may be considered

- Experience of working in a developing country is desirable
- English Language - IELTS with an overall band score of 6.5 (and a minimum of 5.5 in all learning components).

#### Career Opportunities

The MSc Tropical Paediatrics provides a wide range of skills and training for paediatricians planning academic and clinical careers in the tropics. This MSc is often a starting point for career progression, and together with a successful dissertation/research project, it can strengthen your CV when applying for promotion in clinical settings. This MSc is a great springboard into clinical academic routes. Also, many students have had their research projects published in peer reviewed journals, enhancing their standing in the academic research environment.

“ Thanks to LSTM, its vivid atmosphere, brilliant academics and supportive administrative staff, I was fortunate to realise this dream. Being actively involved in the process of developing and conducting different types of epidemiological studies, applying cutting-edge laboratory techniques and preparing manuscripts for peer-reviewed publications were part of my academic achievements. Most significantly however, I discovered how to manage and develop myself! Dr Mohammadreza Naghipour ”

# Humanitarian MSc Programmes



“ It is a great step to getting into the humanitarian sector since most other degrees of this type focus on 'development' rather than humanitarian assistance. It provides a good springboard for getting out into the field and applying the skills you have learned from the course. ”

## Humanitarian Studies

(MSc/PgDip/PgCert)

Intercalate

### 3 good reasons to study

1. It is the longest established humanitarian studies programme in the UK, and whilst being in LSTM, it prepares you for many aspects of careers in the fields of humanitarian and development work. You will choose from a wide number of modules including media and advocacy, health in emergencies, logistics, and water and sanitation.
2. It offers a wonderful and unique opportunity to do research for your dissertation abroad whilst working with key organisations in the field to provide career experience.
3. LSTM is filled with students from all over the world that you can learn with and from, and offers the chance of new international friendships, as well as networking opportunities with staff and NGO's.

### Programme Outline

The programme reviews historical and current policies and practice in humanitarian assistance, analyses the effect of war, natural disasters, and the international economy on social dislocation, health and wellbeing, investigates the evidence base for current operational guidelines, and explores novel approaches in responding to the challenges of today's humanitarian problems. It is responding to the need for a professional, integrated, accountable, and ethical approach to humanitarian interventions, in which humanitarian workers are often called upon to operate in environments where demands extend beyond conventional professional boundaries. Opportunities for in-depth study include regional and country case studies and a choice of modules addressing specific aspects of humanitarian interventions. In addition, the programme offers participants an opportunity to develop and undertake a research project, usually overseas, in an area of special interest indicated by client non-governmental organisations, international organisations, or national ministries. The programme is offered within a dynamic research-led environment and its content is informed by the cutting-edge research activities of the academic staff. It is designed to enable the professional development of the student, to be relevant to students from both the UK and overseas, and to promote approaches to study that will enable graduates to continue their learning into the future.

### Programme Aims

- Provide experienced humanitarian workers with a deeper understanding of the political economy of humanitarian emergencies including the internally displaced, refugees, and migrants: the historical context; regional and country case studies; the effect of war and natural disasters; and the international economy on social dislocation, health, and wellbeing
- Provide an interdisciplinary forum in which participants from a variety of professional backgrounds (eg, health, political and social sciences, engineering, agriculture, development, international humanitarian law, human rights, administration, and media) can review critically, and debate key issues of mutual interest
- Give participants an opportunity to conduct an independent, in-depth research study of a specialist aspect of humanitarian interventions in the field

### Entrance Requirements

- Open to graduates with at least six months' humanitarian assistance or developing countries' professional experience

- Non-graduates who are suitably qualified by higher study or research, and applicants with considerable satisfactory work experience with humanitarian/development organisations and evidence of appropriate in-service training, will also be considered
- 'Field' experience is desirable but not essential
- Available to Intercalating Medics
- IELTS with an overall band score of 6.5 (and a minimum of 5.5 in all learning components).

### Career Opportunities

The MSc Humanitarian Studies (MHS) aims to strengthen links between academic institutions and operational humanitarian organisations. The skills, knowledge, and understanding of humanitarian issues gained during the programme, equip graduates to practice at a senior level in organisations involved in the prevention of, and response to, humanitarian crises. Past students have gone on to take a wide variety of positions, including Head of Policy and Strategy for MSF (Doctors without Borders), through to country director roles, with project placements all over the world. Many have also gone into other fields such as the public sector in the UK, social enterprises, law, social work, Political Advisor in the British Parliament, and so on.

## Humanitarian Health Programme Management (MSc/PgDip/PgCert)

### 3 good reasons to study

1. It is the longest established humanitarian studies programme in the UK, and whilst being in LSTM, it prepares you for many aspects of careers in the fields of humanitarian and development work. You will choose from a wide number of modules including media and advocacy, health in emergencies, logistics, and water and sanitation.
2. It offers a wonderful and unique opportunity to do research for your dissertation abroad whilst working with key organisations in the field to provide career experience.
3. LSTM is filled with students from all over the world that you can learn with and from, and offers the chance of new international friendships, as well as networking opportunities with staff and NGO's.

#### Programme Outline

The programme investigates current approaches to humanitarian health-programme management, and identifies and develops models of good practice. It is a multidisciplinary programme designed to meet the growing requirement for professional management training in humanitarian aid, to meet the needs of development organisations managing increasingly complex and costly programmes. Opportunities for in-depth study include regional and country case studies, and a choice of modules addressing specific aspects of humanitarian interventions. In addition, the programme offers participants an opportunity to develop and undertake a research project, usually overseas, in an area of special interest indicated by client non-governmental organisations, international organisations, or national ministries. The programme is offered within a dynamic research-led environment and its content is informed by the cutting-edge research activities of the academic staff. It is designed to enable the professional development of the student, to be relevant to students from both the UK and overseas, and to promote approaches to study that will enable graduates to continue their learning into the future.

#### Programme Aims

The curriculum has been designed to take account of current national and international priorities and policies in the field of humanitarian health programme management. It aims to:

- Explain the political and economic determinants of health and well-being in humanitarian emergencies, and critically review the evolution of, and current debate on, approaches to sustainable development
- Provide you with the practical skills and confidence required to manage the financial aspects of humanitarian programmes, to maximise their efficiency, effectiveness, and accountability
- Provide an interdisciplinary forum in which participants from a variety of professional backgrounds (eg, health, political and social sciences, engineering, agriculture, development, international humanitarian law, human rights, administration, and media) can review critically, and debate key issues of mutual interest
- Give you an opportunity to conduct an independent in-depth research study of a specialist aspect of humanitarian interventions in the field

#### Entrance Requirements

- Open to graduates with at least twelve months' humanitarian assistance or developing countries' professional experience
- Non-graduates who are suitably qualified by higher study or research, and applicants with considerable satisfactory work experience with humanitarian / development organisations and evidence of appropriate in-service training, will also be considered
- 'Field' experience is desirable but not essential
- English Language - IELTS with an overall band score of 6.5 (and a minimum of 5.5 in all learning components).

#### Career Opportunities

The skills, knowledge, and understanding of humanitarian issues gained during the programme, equip graduates to practice at a senior level in organisations involved in the prevention of, and response to, humanitarian crises. Past students have gone on to take a wide variety of positions, including Head of Policy and Strategy for MSF (Doctors without Borders), through to country director roles, with project placements all over the world. Many have also gone into other fields such as the public sector in the UK, social enterprises, law, social work, Political Advisor in the British Parliament, and so on.

# Laboratory based MSc programmes



*These 2 programmes begin with a field trip to collect samples and get to know your fellow students.*

*This normally lasts between 3-4 days.*

## Biology and Control of Parasites & Disease Vectors (MSc/PgDip/PgCert)

Intercalate

### 3 good reasons to study

1. Tropical disease caused by parasites blights the lives of over a billion people globally, and you will develop a deep understanding of the biology of these organisms in the fight against these debilitating infections.
2. Delivered by the LSTM Parasitology and Vectors of Disease Departments using state-of-the-art laboratory facilities and with industrial collaborations, coupled with a strong research base that works in countries throughout resource-limited tropical regions of the world.
3. Provide you with practical experience of essential techniques, as well as significant theoretical and practical knowledge in all important and topical areas of the field of tropical disease biology.

#### Programme Outline

This programme provides advanced contemporary training in parasitology and the study of disease vectors. The broad scope of the programme ranges from the biology, immunology, ecology, and population biology of the organisms to public health and disease epidemiology. In addition to providing a solid foundation in parasite and vector biology, the programme provides practical experience of essential techniques, as well as significant theoretical and practical knowledge in all important and topical areas of the field. Following the taught component, participants complete a dissertation including a period of applied research, either overseas or in Liverpool. The programme is offered within a dynamic research-led environment and its content is informed by the cutting-edge research activities of the academic staff.

#### Programme Aims

The curriculum has been designed to take account of current national and international priorities and policies in the field of biology and control of parasites and disease vectors. It aims to:

- Equip you with the knowledge and practical skills needed to develop a career in research, training, or control of parasitic and vector-borne diseases
- Provide practical experience of a range of specialised technical and analytical skills relevant to the study of parasites and disease vectors
- Enable you to conduct independent research in the laboratory and/or field

#### Entrance Requirements

- Honours degree (2:2 or equivalent) in the biological sciences or a medical/veterinary degree



#### Professor Hilary Ranson

*"Students at LSTM benefit from exposure to the very latest findings from the bench and the field. All our teaching staff are research active and their experience in working with control programmes, policy makers, and other partners ensures that students get an unparalleled exposure to the current debates, research breakthroughs and controversies in tropical medicine. And Liverpool is a fun and affordable city to live in too!"*

- Medical or Veterinary students who have completed four years of study and wish to intercalate
- Candidates with other qualifications may be accepted, particularly if they have substantial relevant work experience.

#### Career Opportunities

Over many years, we have educated hundreds of Masters students, many of whom have established successful careers in research in the academic or private sectors, or who have gone on to work in development as part of government or NGO teams. Graduates of the MSc Biology & Control of Parasites and Disease Vectors typically follow careers in research or training in areas related to the control of infectious disease, in particular parasitic and vector-borne tropical diseases.

## Molecular Biology of Parasites & Disease Vectors (MSc/PgDip/PgCert)

Intercalate

### 3 good reasons to study

1. Tropical disease caused by parasites blights the lives of over a billion people globally, and you will develop a deep understanding of the biology and molecular approaches to control in the fight against these debilitating infections.
2. Delivered by the LSTM Parasitology and Vectors of Disease Departments with a strong research base that works in countries throughout resource-limited tropical regions of the world.
3. Provide you with practical experience of essential techniques, as well as significant theoretical and practical knowledge in all important and topical areas of the field of tropical disease biology, all taught within an active and exciting scientific environment.

#### Programme Outline

Molecular biology and genomics play an increasingly important and exciting role in research on medically important parasites and arthropods, and this award provides advanced training in this field. It provides an important foundation of knowledge of the basic biology of parasites and vectors, followed by specialised modules on the molecular and cellular biology and functional genomics of parasites and vectors. There is a significant practical component throughout the programme, and the laboratory work undertaken provides a wide range of techniques that would be highly relevant to a future research career. Following the taught component, participants complete a dissertation including a period of applied research, either overseas or in Liverpool. The programme is offered within a dynamic research-led environment and its content is informed by the cutting-edge research activities of the academic staff.

#### Programme Aims

- Equip you with the knowledge and practical skills to develop a career in molecular research in parasitology or vector biology
- Provide practical experience of a range of specialised technical and analytical skills relevant to the study of the molecular biology of parasites and disease vectors
- Enable you to conduct independent research in the laboratory and/or field

#### Entrance Requirements

- Honours degree (2:2 or equivalent) in the biological sciences or a medical/veterinary degree
- Medical or Veterinary students who have completed four years of study and wish to intercalate
- Candidates with other qualifications may be accepted, particularly if they have substantial relevant work experience.

#### Professor Mark Taylor

*"Parasitology at LSTM studies how best to treat and control parasitic diseases such as malaria and the Neglected Tropical Diseases. We cover the entire spectrum of translational research from the discovery of new drugs, vaccines and diagnostics through to large scale global programmes aimed at eliminating diseases such as elephantiasis and river blindness. In addition to the traditional parasites and their vectors, we also work on other important tropical diseases such as snakebite, arboviruses, and tuberculosis."*





# Public Health

## MSc Programmes

### International Public Health (MSc/PgDip/PgCert)

#### Intercalate

#### 4 Pathways:

1. **International Public Health**
2. **International Public Health: Humanitarian Assistance**
3. **International Public Health: Sexual & Reproductive Health**
4. **International Public Health: Planning & Management**

## 3 good reasons to study

1. You will be taught by staff who are renowned experts in their fields of public health.
2. You will be given the opportunity to undertake your own real research project at home or overseas, with high levels of support throughout.
3. LSTM is filled with students from all over the world that you can learn with and from, and offers the chance of new international friendships, as well as networking opportunities.

#### Programme Outline

This programme equips graduates to provide leadership and technical support in public health in middle-income and low-income countries. It covers a wide range of topics in public and global health, including key disciplinary skills in epidemiology and social science, and applied topics such as disease control and programme management. The programme examines current policies and practice in international public health, and explores approaches to developing policy and enhancing practice based upon sound, evidence-based principles. Following the taught component, participants complete a dissertation including a period of applied research, either overseas or in Liverpool. The programme is offered within a dynamic research-led environment and its content is informed by the cutting-edge research activities of the academic staff.

#### Programme Aims

- **MSc International Public Health**  
To understand current policies and practice in international public health, and to explore approaches to developing policy and enhancing practice based upon sound, evidence-based principles. It aims to provide students with the knowledge and skills needed to be part of senior management teams that develop, implement, and evaluate policies and strategies to improve health in communities, countries, and globally.
- **MSc International Public Health (Humanitarian Assistance, HA)**  
To understand current policies and practice in humanitarian assistance, and to explore approaches to responding to the challenges of today's humanitarian problems. It aims to provide students with the skills, knowledge, and understanding of humanitarian issues needed to practise at a senior level in organisations involved in the prevention of, and response to, humanitarian crises.
- **MSc International Public Health (Sexual and Reproductive Health, SRH)**  
To gain a deeper understanding of international aspects of sexual and reproductive health (SRH) in middle-income and low-income countries. It aims to provide students with knowledge and skills needed to enable them to contribute to the strengthening of health systems in support of SRH (including maternal & neonatal health, MNH); facilitate the implementation and scale-up of good practice; and raise awareness amongst politicians, professionals, and the public of the need for more effective use of knowledge and tools to impact on SRH indicators.
- **MSc International Public Health (Planning and Management P&M)**  
To gain an insight into the theories and methods of improving and managing health systems and human resources in middle-income and low-income countries. It aims to provide students with the knowledge and skills needed to enable them to contribute positively to the effectiveness of health-care organisations, using quality and human resource management initiatives.

#### Entrance Requirements

- Open to graduates of health-related disciplines, including Medicine, with at least two years of professional experience working in the health system at district, regional, or national level, in less-developed countries
- Non-graduates who are suitably qualified by higher study or research, and applicants with considerable satisfactory work experience and evidence of appropriate in-service training, will also be considered.

# Professional Diplomas & Certificates at LSTM

These courses are ideal for students with limited time or those wishing to study selectively. Our Professional courses range from 3 to 13 weeks duration and aim to prepare you with key knowledge in a short amount of time.

Our Professional range of courses offer highly intensive study from a world class faculty and allow you to immerse yourself into the subjects whilst on study break/annual leave from your career. They also offer huge networking potential with students coming from over 60 countries.

We also work with key partners to ensure our Professional programmes are fit for purpose and many are accredited or recognised with Royal Colleges such as the Royal College of Nursing, the Royal College of Midwives, and the Royal College of Physicians. You will see many are also recommended by key organisations such as Médecins Sans Frontières.

Some of our Professional courses have been running for over 100 years such as the Diploma in Tropical Medicine & Hygiene (DTMH), and are world-renowned.

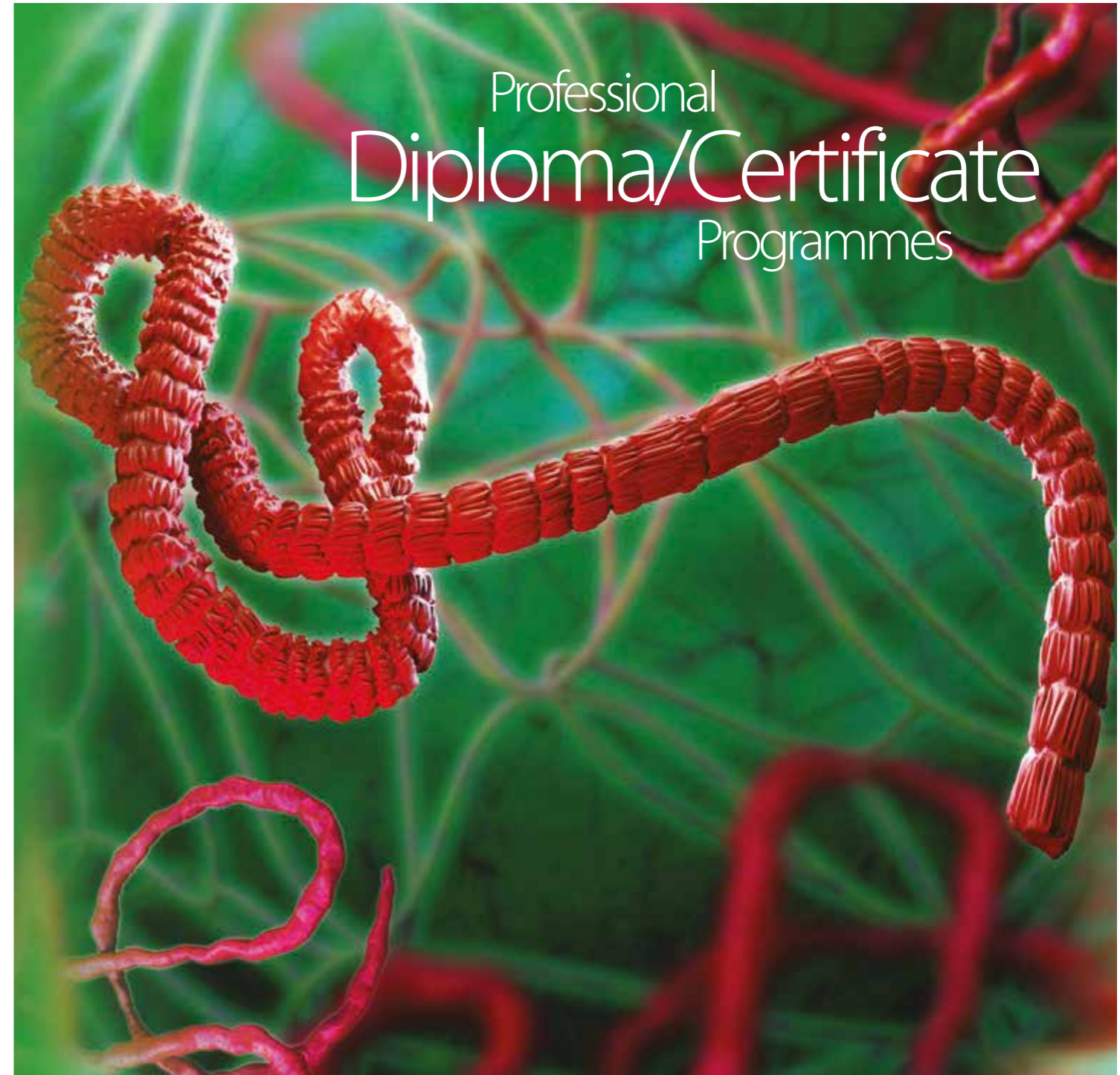
**In addition to the information here, full programme specifications and assessment details are available on our website.**



## Professor Imelda Bates

*"LSTM is full of inspirational teachers. Many have spent time living in resource-poor settings and they are committed to improving the health of people living in poor countries. Most are active researchers so they have in-depth knowledge of their specialities, and many are international leaders and advisers."*

# Professional Diploma/Certificate Programmes



## Diploma in Tropical Medicine and Hygiene (DTM&H)

### Full Time:

3 months (2 intakes per year in September & February)

## 3 good reasons to study

1. Our faculty and graduates are at the forefront of the fight against diseases of poverty worldwide, and are highly sought after by MSF and other leading NGOs and IOs.
2. We are world leaders in research and response to existing and emerging diseases threatening global health and security.
3. You will emerge from the programme with a deeper understanding of the complex cultural, social, political, economic, and technical challenges and opportunities for improving the health and wellbeing of individuals and communities throughout the world today.

### Programme Outline

This programme is particularly useful for physicians who have trained in medicine in a developed country, but intend to practise in the tropics. It is also useful for physicians already practising in developing countries who require an update on infectious, parasitic, and other health problems, and for doctors in developed countries who need to diagnose and manage imported infections. It is recognised as fulfilling part of the requirements for the American Society of Tropical Medicine and Hygiene Certificate in Travel Medicine. This is a highly intensive course with lectures, practical exercises, tutorials, and a range of seminars which provide opportunities for small group work. Much of the practical work in the Dagnall Laboratory is hands-on, backed up with a range of demonstration materials, and facilitated by academic and technical staff. You will cover four main components:

- 1) Clinical Tropical Medicine & Child Health 2) Parasitology 3) Vector Biology 4) Public Health.

### Programme Aims

- Discuss the importance of the social, cultural, and economic setting of people and communities in the planning and implementation of health services and disease control
- Identify stages of parasites important in the diagnosis of tropical disease
- Describe the clinical presentation, diagnosis, and management of the major parasitic, communicable, and non-communicable diseases of the tropics
- Recognise the main genera of insect vectors of disease and understand their behaviour sufficiently to discuss control methods
- Discuss the principles of epidemiology and control as applied to a range of diseases highly prevalent in the tropics
- Identify the health needs of communities and discuss ways of improving health at village and district level.

### Entrance Requirements

- A recognised medical degree and completed Foundation training.

### Career Opportunities

Doctors with DTMH typically work with NGOs and IOs directly after the course, providing a

valuable year out of core or specialty training. Also, many medical retirees join us on the DTMH before starting volunteer work overseas. The DTMH is essential criteria for working with large NGOs, such as Médecins Sans Frontières (MSF).



Dr Tim O'Dempsey, Director of Studies, and just back from secondment with the WHO as Clinical Lead in Sierra Leone, involved in the Ebola epidemic response since July, 2014: "The most popular programme of its kind in the world."

*The teaching and lecturers have been fantastic, amazing depth of knowledge and huge amounts of clinical insight to impart... Fantastic experience and really glad I came.*

## Diploma in Humanitarian Assistance (DHA)

### Full Time:

6 weeks (1 intake per year)

## 3 good reasons to study

1. It is the longest established humanitarian studies programme in the UK, and whilst being in the School of Tropical Medicine, it prepares people for many aspects of careers in the fields of humanitarian and development work.
2. In six weeks, you will receive a concentrated exposure to the front-edge thinking in all of the relevant areas of humanitarian work, and will get to act out real-life scenarios.
3. LSTM is filled with students from all over the world that you can learn with and from, and offers the chance of new international friendships, as well as networking opportunities.

### Programme Outline

This is an intensive, multidisciplinary programme designed to encourage students from a variety of backgrounds and experiences to interact in a stimulating learning environment, in which they will develop individual and team skills. The carefully constructed curriculum, combining core and specialist modules, enables students to explore the essential issues relevant to all humanitarian workers, whatever their professional background, and to select a specialist module which will provide them with a deeper understanding of an area of special interest.

Teaching methods include lectures, case studies, seminars, practical exercises, and scenarios. Students are assessed as individuals and as members of a team.

### Programme Aims

- To provide humanitarian workers with the awareness, understanding, and skills essential for effective action as individuals and as members of a team
- To identify and promote standards of good practice in humanitarian responses
- To encourage cooperation and dialogue between governmental, non-governmental, national, and international agencies involved in humanitarian action
- To examine strategies for early warning and prevention of humanitarian crises
- To create a more effective synergy between emergency humanitarian interventions and programmes promoting sustainable development.

### Entrance Requirements

- University degree or equivalent professional qualification or experience
- Applications are welcome from persons working with governmental, international, and non-governmental organisations, as well as other individuals preparing for, or currently engaged in, humanitarian work

### NGO Forum

Many leading NGOs actively recruit graduates of the Liverpool School of Tropical Medicine. The NGO forum is a 'careers fair' that includes short presentations by NGOs followed by an 'open forum' session in which individual students meet with NGO representatives for more detailed discussion, including advice regarding employment opportunities and application procedures. The following NGOs regularly participate: Concern, Goal, IMC, Medair, Medecins du Monde, MSF, Africa Health Placements, Merlin, Oxfam, Save the Children (UK), VSO.



## Diploma in Tropical Nursing (DTN)

3 week full-time course followed by a 3 week assessment period. Students only need to be in LSTM for 3 weeks, the remaining time can be taken whilst working around your other commitments.

2 intakes per year in May & December

## 3 good reasons to study


1. Tropical Nursing is recommended by key NGOs, such as MSF, as an entry-level requirement for nursing work overseas, and therefore opens up job opportunities.
2. This course provides professional development opportunities, networking with nurses from all over the world and form effective connections.
3. This course is accredited by the Royal College of Nursing.

### Programme Outline

The Diploma in Tropical Nursing (DTN) is awarded by the Liverpool School of Tropical Medicine (LSTM) as part of its suite of non-credit bearing Professional Diploma programmes aimed at enhancing the knowledge, skills, and competencies of health-care professionals working in low-income and middle-income settings. The DTN aims to familiarise participants with common health issues in overseas settings, helping them to develop their analytical, problem solving, and practical nursing skills. The curriculum is flexible to include sessions relevant to current international events, and also contains a strong laboratory element. The programme provides up-to-date factual knowledge and current best practice. The course is accredited by the Royal College of Nursing for 90 study hours. The curriculum has been informed by the requirements of organisations deploying nurses in low-income and middle-income countries (eg, Médecins Sans Frontières; Voluntary Service Overseas), and is designed to introduce common health topics that nurses and midwives are likely to come across whilst working in these settings.

### Career Opportunities

This course provides a global perspective of the complex issues of working as a nurse in the challenging context of low-income and middle-income countries. We will facilitate well-developed management and leadership skills to assist health service coordination – an attractive skill-set of working in resource-poor settings. We will also work on refined interpersonal skills and ability to think and act critically and flexibly. Overall, most nurses and midwives undertake this course to facilitate their entry into working in humanitarian aid and volunteer work overseas.



“ Thank you for a wonderful 3 weeks and for reminding me of all the reasons I came into nursing. ”

## Diploma in Sexual and Reproductive Health in Developing Countries (DSRH)

### Full Time:

12 weeks (1 intake per year)

## 3 good reasons to study

1. This course is accredited by the Royal College of Midwives.
2. It is run in Partnership with the Royal College of Obstetricians and Gynaecologists (RCOG).
3. This course provides scholarship opportunities for students from resource-poor settings, and provides other students with a diverse mix of students from which to learn.



### Programme Outline

The course is designed to help doctors, midwives, and other health professionals working or intending to work in the area of sexual and reproductive health in a developing country, to acquire knowledge and skills enabling them to develop an awareness of the need to reduce reproductive mortality and morbidity through a multi-dimensional and team approach, and to increase their capabilities to plan, implement, and evaluate relevant programmes and interventions in sexual and reproductive health in resource-poor countries. They will gain an understanding of basic epidemiology, quantitative and qualitative research methods, and apply their knowledge to critically analyse research papers and reports.

Throughout the programme, the aim for the participants will be to gain in-depth knowledge and understanding, and sufficient confidence in new skills and ideas, to apply them in their own working environment in a developing country situation. The course will be run with an emphasis on group discussion and a rather participatory approach, with less emphasis on didactic lecturing. Active involvement is therefore important for participants to fully benefit from the course.

### Programme Aims

- Understand and explain basic epidemiology, quantitative and qualitative research methods, and apply the knowledge to critically analyse research papers and reports
- Develop an awareness of the need to reduce reproductive mortality and morbidity through a multi-dimensional and team approach
- Review a range of possible strategies that can be used to improve sexual and reproductive health/ maternal & neonatal health in resource-poor countries
- Increase their capabilities to plan, implement, and evaluate relevant programmes and interventions in reproductive health

### Career Opportunities

In developing countries, pregnancy and childbirth complications are the leading cause of death among women in their reproductive years. Experts estimate that access to family planning alone would save the lives of 114,000 women. At least 250,000 maternal deaths and as many as 1.7 million newborn deaths would be averted if the need for both family planning and maternal and newborn health services were met. There are many employment opportunities within this field with small and large NGOs, UN organisations, as well as reproductive health community programmes and family planning, working towards SDGs. There are also many research opportunities within this field.

“ After I finished my programme of Reproductive Health I went back to my country and I am really proud of LSTM because now I have started to benefit from the knowledge & skills which I acquired. I am now conducting different part-time jobs (consultancy) in maternal death audits; HPV vaccination and Family Planning. ”

Yves Lucien Hakorimana, Student



## Certificate in International Health Consultancy

(3 weeks)

### 3 good reasons to study

1. You will learn how to deliver effective consultancy that is robust, evidence-based, and grounded in the reality of resource-poor settings.
2. You will apply learning and skills through conducting a mentored real-life consultancy assignment, as part of a multidisciplinary team in Merseyside.
3. This certificate will develop your personal and professional networks, and update your knowledge and skills for working in global health.

#### Programme Outline

This highly intensive 3-week certificate course is an executive/senior level professional development programme of value to health, management, and social development specialists working in government, non-government, and academic settings worldwide. It provides emerging national, regional, and international consultants with an opportunity to enhance and improve their professional knowledge and skills in the provision and management of consultancy services within the context of international health and deliver technical assistance that is robust, evidence-based and grounded in the reality of resource-poor settings. This course aims to mirror the reality of working as an international health consultant and has a very strong emphasis on developing practical hands-on skills, with a focus on both individual and team working for delivering successful consultancies.

Real Consulting - An exciting aspect of this course is the application of learning as you will undertake a team consultancy for a Merseyside client, including bidding for and planning the assignment, rapid literature review, face to face meetings with clients and other stakeholders, data collection and analysis, report writing, and presentation of learning to outside agencies.

#### Programme Aims

- Understand the context of key global initiatives and new developments in international health in your role as a consultant
- Demonstrate the skills required to work as an international consultant
- Describe the international health consultancy process and its management
- Deliver successful consultancies.

#### Entrance Requirements

- Qualified health-care providers such as nurses, midwives, clinical officers, doctors, and obstetricians who are working in low-income and middle-income countries, or who are planning to do so

- Applications from staff in ministries of health, freelance consultants, and health advisors working in the field of SRH are also invited
- Applicants should have adequate proficiency in English (IELTS 6.5 / TOEFL paper based 570, or TOEFL iBT 88).

#### Career Opportunities

Many of our alumni have used this course as a way of moving into consulting as freelance consultants or in setting up or strengthening their own consultancy companies. This programme is designed to enhance the ability of emerging consultants, and for practising consultants to successfully apply for, and win, both short-term and long-term consultancy work. This course is also highly relevant to those wanting to work in a volunteer role in international development.

*This is a very high quality course and one of the best short courses I've attended. It is enormously practical, covering a wide range of relevant skills and tools for international health consultancy.*

John Ashton CBE

## Undergraduate BSc in Tropical Disease Biology

The BSc in Tropical Disease Biology is an Honours degree programme offered by the School of Biological Science, University of Liverpool, with the final Honours year run and based in LSTM.

The degree programme is aimed at students who are interested in a range of aspects of the biology of infectious disease (from organism life cycles to epidemiology and molecular biology) in the context of global disease issues, with an emphasis on the tropics. The course includes a practical skills module in Tropical Medicine in Year 2, with final year modules in Parasitic Protozoa and Helminths, Parasitology including Immunology and Molecular Biology, Vector Biology, Chemotherapy and Topics in Global Health, and a Research Project.

Graduates with a degree in Tropical Disease Biology are well qualified to enter a wide range of employment opportunities with rewarding careers in biotechnology, pharmaceuticals, and other key areas. For those committed to a career as a research scientist, further study for a higher degree in science or subjects allied to medicine is the normal route, and several past students have continued their training by enrolling onto Masters and PhD programmes at LSTM.



## Intercalating Medics

Intercalating is associated with improved performance in Years 4 and 5 of the MBChB. This improved performance will further contribute to higher academic ranking for Foundation Year posts. You can intercalate at LSTM on:

**BSc Tropical Disease Biology (Honours Year)**

**MSc Biology and Control of Parasites & Disease Vectors**

**MSc Molecular Biology of Parasites & Disease Vectors**

**MSc Humanitarian Studies**

**MSc International Public Health (various streams)**

# Professional Short Courses

# Clinical Courses

## Essentials of TB Epidemiology, Clinical Management & Control

3 Days

### Accredited – Royal College Of Physicians

This 3 day course is ideal for people who are looking for a rapid update on tuberculosis and tuberculosis control. The course is part of the 3 month course for the Diploma in Tropical Medicine & Hygiene therefore the orientation is towards practice in developing countries. The delivery is updated every 6 months in line with new developments in approaches, strategies, tests, and treatments for TB. The content provides a refresher course in the core principles of TB epidemiology and control.

### Learning Outcomes

By the end of the module participants will:

- Have reviewed the core principles of TB epidemiology, clinical management, and control
- Be able to evaluate the relevance of new approaches and tools to their current or intended day-to-day practice in clinical or public health aspects of TB
- Be able to identify areas within their own current or intended practice that could be updated in line with current international guidelines
- Understand future possibilities for research, clinical, and public health management of TB
- Understand current challenges in TB epidemiology, clinical management, and control, especially in relation to HIV-AIDS and multidrug-resistant and extremely drug-resistant TB.

## HIV Epidemiology, Clinical Case Management & Strategies in Resource Poor Settings

5 Days

### Accredited – Royal College Of Physicians

This 5 day course is open to all interested health professionals who are looking for a rapid update on HIV and STI epidemiology, treatment, and control. The content provides a refresher course in the core principles of HIV epidemiology and control, as well as updates on clinical syndromes and their management, the use of antiretrovirals, and programming for HIV prevention and treatment. The delivery is updated every 6 months in line with new developments in approaches, strategies, tests, and treatments for HIV.

### Learning Outcomes

By the end of the module participants will:

- Have a good understanding of the current epidemiology of HIV and STI
- Understand the principles of prevention and control of HIV and STI, including best practice Counselling and Testing procedures and Antiretroviral Treatment strategies
- Be able to diagnose and treat patients suffering from the common STI
- Be able to diagnose and treat patients suffering from the common manifestations of HIV disease
- Have a good understanding of current emerging issues in HIV and STI treatment and control in the developing world.



### Professor Bertie Squire

Chair in Clinical Tropical Medicine, Director of Centre for Applied Health Research and Delivery (CAHRD) at LSTM

*"We really enjoy helping a wide variety of health professionals to learn about all aspects TB and TB control. Our TB teaching group includes laboratory specialists, clinicians, epidemiologists, public health professionals, and TB nurse specialists. We pride ourselves on providing fresh perspectives from our personal experiences in practice and research from a wide variety of settings around the world. Our teaching style is interactive and participatory and our goal is always to motivate and inspire!"*

## Statistical Methods of Epidemiological and Clinical Research

2 weeks

### 3 good reasons to study

1. Statistics lies at the heart of most epidemiological and medical research, enabling us to identify disease risk factors, effective drug treatments, and make generalisations with accuracy and confidence.
2. In this course you will be given access to a large dataset that mimics the inhabitants of a fictitious community in a tropical country, and will be asked to design projects to address a series of research questions relating to tropical health issues.
3. Our emphasis on developing skills and practical experience, from designing analyses, performing tests, and looking critically at statistics, will help build your confidence in dealing with numeric data to enhance your employability.

### Course Outline

This course aims to provide students with knowledge and critical understanding of standard and advanced quantitative statistical methods, within the context of epidemiological and clinical research in humans. We will develop your ability to design, critically analyse, interpret, and report the findings of a complex research project in a health related topic. The focus is on methodologies appropriate for complex surveys and observational cohort/case-control studies, but you will also examine methodologies relevant for randomised controlled clinical trials. The module will concentrate on the practical application of different experimental design strategies and on the interpretation of the results of statistical analysis methodologies, rather than on any detailed mathematical derivations. Teaching sessions typically comprise an introductory presentation describing a specific type of study design or statistical methodology, a linked period of student-directed learning with staff available for consultation, a group discussion, and a period of directed self-study based on the material covered in the session. You will be given access to a large dataset that mimics the inhabitants of a fictitious community in a tropical country, and will be asked to design projects to address a series of research questions relating to tropical health issues in humans. You will then select an appropriate number of individuals from the dataset and analyse the data using standard statistical computer packages such as EpiInfo, SPSS, and R.

### Learning Outcomes

- Identify appropriate experimental design methodologies for carrying out health surveys, observational epidemiological studies (primarily cohort and case-control design studies), and interventional clinical trials involving human participants
- Identify and execute appropriate statistical methods for summarising data collected in health surveys, epidemiological studies, and interventional clinical trials, using both conventional approaches and more contemporary concepts
- Critically evaluate and interpret the statistical analyses of data from health surveys, epidemiological studies, and interventional clinical trials

- Summarise the results of statistical analyses in a report format suitable for a non-mathematical readership.

### Career Opportunities

Anyone requiring a basic knowledge of statistical methods for medical research would find this course beneficial. Over many years we have educated hundreds of students, many of whom have established successful careers in industry and research in the academic or private sectors, or who have gone on to work in development as part of government or NGO teams.

“The course is very practical throughout the sessions, and I have learnt SPSS very easily. The frequent exercises during every session were very useful, making my learning process very easy.”

## HIV in Resource Limited Settings

2 weeks

### 3 good reasons to study

1. You will learn from clinicians and policymakers with first-hand experience and long standing practice in the field of HIV, and apply this to your setting.
2. You will appraise current research and guidance for HIV management and programming.
3. This course will develop your critical awareness of the different perspectives we can look at HIV - from molecular and clinical, to social and equity.

### Course Outline

This course aims to give a comprehensive knowledge of HIV prevention and control in different settings and populations, in order to prepare clinicians to deliver HIV services and programmes. This course is taught in two parts. After a brief introduction to the biology and epidemiology of HIV, you will learn during the first part about the diagnosis and treatment of major opportunistic infections and HIV related diseases. Challenges of antiretroviral treatment, such as toxicities and resistance are a main focus, centred on individual patient management (adults and to a lesser extent children). The second part of the course applies this knowledge to real life scenarios and provides a public health perspective. What are the challenges that clinicians and programme managers face when implementing national or WHO policies for treatment and prevention, and how can we overcome them? Physicians and scientists with experience in HIV medicine, research, and programme management in different parts of the world give lectures and facilitate interactive seminars.

### Learning Outcomes

- Demonstrate knowledge and critical understanding of HIV virology and pathophysiology
- Explain the Principles of diagnosis and management of HIV in adults and children
- Provide an overview about the natural history of HIV and the diagnosis, treatment, and prevention of common opportunistic infections and co-infections
- Discuss current HIV prevention strategies and be able to apply these to different populations and contexts
- Critically summarise operational challenges of service delivery in resource-poor contexts.

### Career Opportunities

Staying up to date on prevention and control methods in HIV in different settings can enhance your skills in working in this subject area. We are using clinical knowledge, public health perspectives, epidemiology, and social impacts to provide a holistic viewpoint of HIV in the resource-poor setting. This course is useful for doctors and nurses about to work in resource-poor settings, especially sub-Saharan Africa.



Professor Shabbar Jaffar

“Our HIV research spans evaluation of both HIV prevention and treatment strategies in a range of different populations. We are involved in a number of collaborative large-scale studies including randomised trials of new approaches and evaluation of scaling up of interventions that have been proven to control HIV-infection. Our particular focus is on Africa.”

“Was a well-organised and complete course. It gave us an interesting and updated overview on the topic, as it was an excellent opportunity to update our knowledge and learn its application in tropical settings.”

## Medical Bacteriology

2 weeks

### 3 good reasons to study

1. This course combines practical laboratory experience clearly linked to informative case studies covering bacterial infections in different body systems, facilitated by specialists in the field.
2. There will be in-depth coverage of mechanisms of bacterial resistance to antibiotics and methods of infection control, a topic widely recognised to be of global importance.
3. Many of the lecturers on the course have extensive experience of practicing in low-income and middle-income countries as well as the UK, giving a global perspective to the teaching.

#### Course Outline

This course aims to equip students with the skills and knowledge to identify common bacterial pathogens and provide a framework in which they can develop their knowledge of the diagnosis and treatment of bacterial infections. Bacterial infection is a common cause of disease across the world and is responsible for high numbers of deaths in low-income countries. Also, the development of resistance by some bacteria to many effective antibiotics is rapidly becoming a global emergency, especially in hospital settings. However, the correct diagnosis and treatment of many infections is made difficult in developing health systems due to a lack of availability of effective testing and treatment available in wealthier countries. This course will primarily use a highly interactive case study based approach to promote discussion on topics including pyrexia of unknown origin, sepsis and meningitis, respiratory tract infections, diarrhoeal disease, genital and urinary tract infections, and neonatal Infections. You will have an opportunity to discuss the results of cases you have investigated both clinically and in the laboratory with experienced subject practitioners from centres of excellence across the United Kingdom.

#### Learning Outcomes

- Use the outputs from laboratory tests to classify bacteria in the medical microbiology laboratory
- Review critically laboratory and clinical information to identify the common bacterial pathogens involved in human disease
- Relate bacterial structure and function to antimicrobial activity and resistance mechanisms
- Demonstrate knowledge and understanding of hospital infection control procedures and practices.

#### Career Opportunities

This course will provide a good basis to undertake more specialist training in bacteriology and will give clinicians exposure to a wide variety of microbiological laboratory methods.

*“Lecturers were very enthusiastic about the subject and made the class lively. Never a dull moment ... Complete team work by all and stress free.”*

*“Liked how this was linked in to case histories”*

# Sexual & Reproductive Health



## Key Concepts in Sexual & Reproductive Health

2 weeks

### 3 good reasons to study

1. This course provides valuable insight into the background and policies which influence the provision of SRH services, being useful for both those who plan to work in the field of SRH and also those who plan to work in general public health.
2. This course allows students to explore in detail an issue related to SRH through a situational analysis, which helps them to develop SRH programmes in their particular country.
3. It is run by the Centre for Maternal and Newborn Health (CMNH) at LSTM which is a WHO-collaborating centre, and as such students have access to some of the leading researchers in SRH.

### Course Outline

This course aims to provide you with knowledge and critical understanding of the concepts of sexual and reproductive health (SRH) and SRH services. In this course, you will explore SRH in the contexts of human rights, equity, gender equality, and health systems and policies, and discuss the link between SRH and the Sustainable Development Goals (SDGs). Topics covered include an introduction to the concepts, history, and evolution of SRH and its components; strategies to implement SRH programmes; SRH services; needs assessment of SRH services; and monitoring and evaluation of SRH programmes. We use interactive lectures to introduce concepts, supported by individual and small group work on scenarios and case studies.

### Learning Outcomes

- Demonstrate a detailed and systematic knowledge and understanding of the concept of SRH and its components. Identify key players and issues in international SRH, and discuss the critical points in the plan of action of the ICPD
- Analyse critically how individual and collective human behaviour affect SRH, and explain how behavioural theories are used to design behavioural change communication components of SRH programmes
- Analyse critically how national health policy and health systems influence whether or not key SRH issues are addressed
- Design and implement a needs assessment and monitoring & evaluation framework for SRH services
- Formulate a strategic plan for a SRH programme
- Apply the rights-based approach in SRH programming

### Career Opportunities

Useful for programme managers, nurses, midwives, and doctors who are working in the field of sexual and reproductive health. This course is also suitable for public health practitioners and for people who need to work with needs assessments and monitoring & evaluation frameworks.

*“ I LOVED this course! I thought the lessons were really interesting and engaging... it was very public health focussed which I really liked, even the infertility lecture was more interesting than I first thought. I liked that it brought in a rights focus too. ”*

## Sexual Health & Human Sexuality

2 weeks

### 3 good reasons to study

1. From the local to the global, a significant number of public health challenges involve sexual and reproductive health (SRH).
2. In resource poor settings, women still die silently of septic abortion although safe and effective family planning methods exist. HIV and STIs are part of the lives of many young women.
3. In this course, you will systematically analyse the factors influencing choice and opportunity in sexual and reproductive health.

### Course Outline

This course aims to provide you with knowledge and critical understanding of the concepts of sexual health and human sexuality. Sexual health, according to the WHO definition, encompasses physical, emotional, mental, and social well-being. This requires choice, respect, and freedom from discrimination and violence. In short, it can be considered a basic human right. Taking this as a foundation, this course will allow you to critically analyse the following aspects of the subject in relation to these fundamental principles. You will learn about human sexuality, sexual health and sexual dysfunction, and sexuality and relationships education; epidemiology and prevention and control of Sexually Transmitted Infections (STIs) and HIV infection; the syndromic approach to diagnosis and management of STIs; counselling and testing for HIV and Prevention of Mother to Child Transmission; organisation, planning, and monitoring & evaluation of family planning programmes; unwanted pregnancy and (unsafe) abortion; sexual and gender-based violence; and epidemiology and prevention of cervical cancer. This is taught by a combination of lectures and student-led seminars. A student-centred approach is taken using discussion and group work, supported by independent study and directed reading.

### Learning Outcomes

- Demonstrate a detailed and systematic knowledge and understanding of the concepts of human sexuality, sexual health, sexual dysfunction, and approaches to sexuality and relationships education
- Explain the benefits of FP and its role in SRH programmes
- Design, monitor, and critically evaluate FP programmes and services
- Discuss the effectiveness and limitations of different prevention and control strategies for STIs, including HIV in resource-poor countries
- Design, monitor, and critically evaluate a programme for the control of STIs and HIV infection
- Demonstrate a critical awareness of the principles, advantages, and limitations of the syndromic approach to the management of STIs
- Explain the various aspects, manifestations, and consequences of sexual and gender-based violence, and discuss how to address these issues in SRH policies and programmes

### Career Opportunities

Understanding the biopsychosocial aspects of barriers and facilitators to uptake of SRH services will better equip you to contextualise the integration of clinical and public health agenda in SRH. Understanding these concepts will assist you in your long-term career plans working in sexual health.

*“ Interesting and passionate lecturers who were clearly passionate about their topic and had specialised knowledge. ”*

# Maternal & Child Health



The Centre for Maternal and Newborn Health welcomes students from all over the world and provides an opportunity to work alongside our research active staff to design and conduct studies that provide evidence for 'what works when and how' to reduce the global burden of maternal and newborn mortality and morbidity.

Our teaching programmes are informed by the latest evidence, our global network of experts in maternal and newborn health, health systems, and operations research.

Our research outputs are used to update guidelines, change practice, and inform policy globally.

Professor Nynke van den Broek



## Life Saving Skills & Essential Obstetric Care

(LSS-EOC)

3 days

### Course Outline

At least 80% of all maternal deaths result from five complications that are well understood and can be readily treated, which are haemorrhage, sepsis, eclampsia, complications of abortion, and obstructed labour. We know how to prevent these deaths – there are existing effective medical and surgical interventions that are relatively inexpensive. The course is designed to cover the five major causes of maternal death, as well as Newborn Resuscitation and Early Newborn Care. It focuses on the signal functions of CEOC (9) and BEOC (7). To reduce maternal mortality it is important that all women have access to maternal health care services, particularly skilled attendance at birth and timely access to Essential (or Emergency) Obstetric Care (EOC) when an obstetric complication occurs. Two levels of EOC can be distinguished: BEOC and CEOC.

Basic Essential Obstetric Care (BEOC) – 7 signal functions:

1. Parenteral Antibiotics
2. Parenteral oxytocics
3. Parenteral anti-convulsants
4. Manual removal of a retained placenta
5. Removal of retained products of conception by Manual Vacuum Aspiration
6. Assisted vaginal delivery (vacuum extraction)
7. Resuscitation of the newborn (using bag and mask)

Comprehensive Essential Obstetric Care (CEOC) – 9 signal functions:

All 7 BEOC functions (above)

8. Caesarean Section
9. Blood Transfusion

### Career Opportunities

Useful for all skilled birth attendants working in resource poor settings. This is especially useful outside of the NHS environment.

## Quality Improvement in Global Child Health

2 weeks

### 3 good reasons to study

1. You will review the current priority diseases affecting infants and children in low-resources settings, and the evidence underlying effective interventions.
2. You will consider the bigger picture of global child health and where you can best make your contribution.
3. You will consider how you can be the “go to” person to lead improvements in care for children, and develop a practical quality improvement initiative that you can implement in your day-to-day work.

### Course Outline

This course aims to update you on recent advances in the prevention and management of priority diseases affecting children and equip you to lead improvements in care. You will review priority issues in global child health focussing on latest evidence that has informed advances in disease prevention and management. Emphasis is placed on taking a broad view of health linking community interventions through to bedside clinical management and improving health outcomes, by improving the quality of health care through better use of the available human and material resources. This is taught through a combination of presentations, seminars, tutorials, case studies of quality improvement initiatives in different settings, and on-line clinical case studies benchmarked against IMCI protocols.

### Learning Outcomes

- Analyse the global burden of disease and major risk factors for disease in children including inequality
- Evaluate recent research that has informed changes in health practice and programmatic approaches to improving child survival in low resource settings: IMCI, EPI
- Evaluate and apply basic approaches and tools used to improve the quality of health interventions
- Evaluate and apply approaches to adult learning that change health worker behaviour

### Career Opportunities

The main focus of our teaching is to generate the future leaders of global child health. This course is suitable for people working in paediatrics, global health, and health systems development using quality improvement.



“Quality Improvement interventions are essential components of health care systems, so I think that this course was a good opportunity for having an overview on this topic.”

## Child Nutrition

2 weeks

### 3 good reasons to study

1. Nutrition is key for child health, and what we teach is relevant, varied, evidence informed and up to date, comprising of undernutrition and micronutrient deficiencies, as well as overweight; diagnostics, treatment and prevention, clinical as well as public health aspects, epidemiology as well as nutrition policy.
2. The lecturers are recognised subject experts, and are enthusiastic about the topics, and about the opportunity to share their knowledge with you. Many are clinicians and researchers with working experience in resource-poor settings.
3. You will enjoy the atmosphere of LSTM and the city, and meet many like-minded people.

### Course Outline

This course aims to provide you with knowledge and critical understanding of nutrition as central to clinical and preventive paediatrics and child health. An evidence-based approach is taken to explain the main priorities in applied nutrition relevant to low resource settings, in the context of both hospital and community settings. You will learn about nutrition and health in the context of the mother and child, focusing on issues related to foetal growth, breast milk, and breast feeding, and explore how changes in maternal behaviour can benefit or adversely affect her child. We address the assessment of nutritional status through discussion of frequently used definitions and how these are derived and applied in nutritional assessment, using specific examples of rickets and bone mineralisation, folate metabolism, and protein-energy malnutrition. You will consider causative factors and preventive strategies relevant to the problem of malnutrition in children, including breast feeding and complementary feeding, over-nutrition, and food security. Finally, you will explore the clinical diagnosis of protein-energy malnutrition within the framework of the WHO Training Manual on Protein Energy Malnutrition. This is taught using lectures, group work, and directed self-study, including selected on-line resources and videos.

### Learning Outcomes

- Discuss the normal phases of growth in children and recognise the importance of nutrition at key stages
- Use standard growth charts, computer software, and biochemical indices to measure children and assess their nutritional status
- Define and use appropriately key terms (eg, stunting, wasting, growth failure)
- Discuss the common nutritional disorders affecting children in the tropics
- Analyse causative factors and preventative strategies relevant to both medical and sociological factors in chosen health situations

- Design and implement appropriate strategies for the management of acute malnutrition in the home, in the community, and in hospital

### Career Opportunities

This course is suitable for health-care providers, as well as people who are working in programme management around child nutrition in low-resource settings. It is also suitable for people working within health-care settings, NGOs, and UN agencies. Health workers, nutritionists, doctors, nurses, as well as programme managers are encouraged to apply.

“I have learnt so much from this course. Although I had some knowledge on child nutrition, but the way the sessions were organised was amazing. The course convenor made sure that all the lecturers were high quality and experienced. There was enough time for feedback and to ask questions and the class was very interactive.”

2015 Evaluation

## Maternal and Newborn Health

2 weeks

### 3 good reasons to study

1. Across the world, almost 300,000 women die each year from complications of pregnancy and childbirth. This equates to a woman dying every 2 minutes. For each woman who dies, thirty survive but suffer lifelong morbidity. In addition, 3 million babies worldwide are stillborn, and an additional 3 million die in the first week of life.
2. The Centre for Maternal & Newborn Health (CMNH) is based at LSTM and has won a BMJ award, in 2015.
3. CMNH have a research portfolio over £20million, work in eleven countries, and partner strategically with governments, ministries of health, and global agencies to ensure optimum impact of our work, and that key findings are disseminated appropriately.

### Course Outline

This course aims to provide you with knowledge and critical understanding of the concepts and key issues related to maternal and neonatal health (MNH) and safe motherhood. You will learn how to develop a strategic plan for the reduction of maternal and neonatal mortality, and how to plan, organise, monitor, and evaluate evidence-based maternal and newborn health (MNH) programmes and services, taking into consideration the importance of effective functioning health systems. Topics covered include the causes and determinants of neonatal mortality; the global burden of and key strategies for reducing maternal and neonatal mortality and improving MNH; the Safe Motherhood Initiative; skilled attendance at birth and emergency obstetric care; measuring maternal mortality; monitoring and evaluation of MNH services; community and demand-side aspects of MNH; and promoting evidence based practice in maternal health care. This is taught by a combination of lectures and student-led seminars. A student-centred approach is taken using discussion and group work, supported by independent study and directed reading.

### Learning Outcomes

- Demonstrate a detailed and critical understanding of the concepts, strategies, and historical development of the Safe Motherhood Initiative
- Discuss critically the causes and determinants of maternal and neonatal mortality and morbidity, and the global strategy for improvement of MNH from UN agencies
- Plan evidence-based programmes and services for the reduction of maternal and neonatal mortality and morbidity, and improvement of MNH
- Critically evaluate MNH programmes and services, and explain the limitations of methods for measuring maternal mortality

### Career Opportunities

Maternal and Newborn health is a huge area for careers and research. A good grounding in these topics will help you achieve your aims in this field. Previous students have been leaders of ministries of health, key personnel from hospitals around the world, NGO staff, nurses and midwives about to work overseas, as well as public health and medical staff from around the world.



“Groups done with students from different backgrounds, great opportunity to share experiences and learn from each other.”

## Quality Improvements in Maternal and Newborn Health

2 weeks

### 3 good reasons to study

1. 289,000 women die annually during pregnancy, childbirth, or within six weeks of delivery, with developing regions accounting for 99% of these deaths.
2. Quality Improvement skills are vital for leaders to move off from the status quo and be a real asset to their employment setting and beyond.
3. You will consider the bigger picture of maternal and newborn health, and where you can best make your contribution.

### Course Outline

This course aims to provide students with knowledge and critical understanding of the concepts of quality of care in maternal and newborn health. Quality of care has become the new international initiative that arisen from the Global Strategy for Every Woman and Every Child to improve the health outcomes of mothers and babies. This course is designed for aspiring professionals working or interested in a range of environments that deliver MNH healthcare with a focus on operating in today's world of economic challenges, whilst continually striving to enhance the quality of these services. You will learn about the importance of improving the quality of MNH care and services. You will explore how to assess quality from a health system, a health-care worker, and a recipient of care perspective. You will also reflect critically on your own area of practice and role in quality improvement, and appreciate how research and audit differ and how they are related. This is taught by a combination of lectures delivered by external and internal experts, and student-led seminars. A student-centred approach is taken using discussion and group work, supported by independent study and directed reading.

### Learning Outcomes

- Explain the importance of quality improvement in MNH
- Identify specific developments within your own area of practice and consider how the interventions were evaluated
- Demonstrate that you have the skills, knowledge, and understanding to introduce and use quality improvement methods for MNH services, notably: setting of standards; carrying out maternal death reviews; perinatal death reviews; criteria-based clinical audits.

### Career Opportunities

To fully benefit from the advantages of quality improvement in MNH, there is an urgent need to build capacity of health-care providers to be able to conduct maternal and perinatal death audits, as well as standards- or criterion-based audit. Being part of the movement towards establishing clear guidelines and adopt suitable classification systems, to ensure uniformity and allow comparison among different countries and settings, is a vital part of assisting with the SDGs.

“Lecturers were very knowledgeable and willing to answer any questions that came up.”







# Public Health & Humanitarian

## Complex Humanitarian Emergencies

2 and 4 weeks

### 3 good reasons to study

1. This course looks at the big problem issues; how humanitarian aid is manipulated by political and economic interests, the difficulties of working in fragile states, greed versus grievance motivations, and child soldier problems, along with the migration crisis in Europe.
2. The big current problem areas are explored: Syria, Iraq, Afghanistan, Sudan, and others.
3. The course will respond to the specific interests that you wish to pursue by our flexible approach to teaching.

### Course Outline

This course aims to provide students with knowledge and critical understanding of current key themes and debates in the social sciences concerning humanitarian emergencies. In this course you will be investigating some of the big issues in humanitarianism today. You will explore how humanitarian interventions have been manipulated or instrumentalised by nations to achieve their own ends, thereby compromising the core humanitarian principles of humanity, neutrality, impartiality, and independence. Humanitarian work is growing ever more complex as there are many failing or failed states. Since the 'war on terror' era began after 9.11.2001, there have been those who have argued that this provides evidence of the clash of civilisations between a Christian West and other blocks, notably the Islamic states - is such a theory flawed? The United States has assumed a role as a global policeman and there have been invasions of Afghanistan and of Iraq - have these events hastened the decline of the West and the rise of the Rest? Nation-building interventions have been tried and frequently have failed - why is this? In order to understand complex humanitarian emergencies we need to look into what anthropology can offer - is the motivation primarily greed or grievance? There are many victims of conflicts, not least child soldiers, and we will examine the problems of their reintegration into society.

### Learning Outcomes

- Demonstrate a systematic understanding of knowledge and a critical awareness of current themes and debates concerning complex humanitarian emergencies
- Evaluate and critically analyse an array of source material
- Analyse in-depth one particular dimension of complex emergencies

### Career Opportunities

Past Humanitarian students have gone on to take a wide variety of positions, including Head of Policy and Strategy for MSF (Doctors without Borders), through to country director roles. Many have also gone into other fields such as the public sector in the UK, social enterprises, law, social work, Political Advisor in the British Parliament, and so on.



“Great course. The discussions we had were extremely invigorating and relevant.”

## Global Climate Change and Health

2 weeks

### 3 good reasons to study

1. There is no greater challenge than climate change in the 21st century and in this course you will examine all aspects of the impact of climate change, not just on health alone.
2. There is a global review of the challenges facing every continent, and particular emphasis is given to mitigation and adaptation.
3. This course will address the effect on people living in poverty, who are the hardest hit by climate change, despite being the least responsible for the crisis.

#### Course Outline

In the last few years, we've witnessed extreme weather events, like the Australian bush fires and Typhoon Haiyan in the Philippines that have devastated millions of hectares of crops, sent food prices rocketing, and left millions facing hunger. This course aims to provide you with knowledge and critical understanding of the effects of global climate change on human health and livelihoods, and to investigate options for mitigation and adaptation. Climate change is one of the greatest challenges facing the world in the 21st century and we will look at its wider impact on lives and livelihoods across all of the continents. You will explore the economic, political, social, and environmental determinants of vulnerability to the effects of climate change, and will be encouraged to examine critically the key strategies of adaptation and mitigation. Core information will be presented in lectures and will be expanded in seminars through group discussion of case studies.

#### Learning Outcomes

- Identify and critically analyse current and potential threats to human lives and livelihoods, as a result of global climate change
- Discuss the complex social, political, economic, and environmental determinants of vulnerability to the effects of global climate change
- Explain how global climate change is likely to affect the nature, frequency, and magnitude of humanitarian emergencies
- Critically analyse strategies for adaptation to the effects of global climate change, and propose a variety of adaptation strategies that are designed to ensure sustainable livelihoods and the development potential of a range of vulnerable populations
- Investigate policies and instruments that are available to governments to create incentives for mitigation action, and propose strategies for mitigation action appropriate to key stakeholders.

#### Career Opportunities

This course is useful for people working in the international health sector (ministries, NGOs) and programme planning, as climate change is relevant in planning programmes in disaster-prone areas. Past students have included NGO staff working on climate change programmes, health sector planning staff, as well as government advisors. Sustainability and Climate Change (S&CC) are important to the agendas of public and third sector organisations.

*I liked that the lecturer is extremely knowledgeable in the context of climate change and manages to bring socio-political and environmental challenges on a high intellectual level.*

## Management of Refugee and Displaced Populations

2 weeks

### 3 good reasons to study

1. Political turbulence in many regions of the world has increased the number of displaced people fleeing complex emergencies and disasters, and they often end up in large camps where environmental health measures are insufficient.
2. You will be taught by staff who are at the forefront of teaching and research in the humanitarian sector.
3. No longer the realm of resource-poor settings, skills learnt on this course are useful for many fields such as medicine, social care, local government, public health, and NGO / humanitarian work.

#### Course Outline

This course aims to provide you with the knowledge, skills, and critical understanding needed to adopt an evidence-based and reasoned approach to managing refugee and displaced populations across the spectrum from emergency relief to sustainable development. You will learn about managing responses to displacement; mobilising and managing human and financial resources; security and self-care of humanitarian actors; the impact of humanitarian action; and managing the transition from emergency relief to sustainable development. We will discuss civil-military relations, post-conflict disarmament, demobilisation and reintegration, children in conflict and child separation, and issues of post-conflict reconstruction. Core information will be presented in lectures, and in-depth discussions will take place in seminars, involving group work based around case studies and problem-solving exercises.

#### Learning Outcomes

- Critically analyse strategies for managing and co-ordinating refugees/IDPs in a variety of settings
- Use appropriate evidence-based approaches for mobilising and managing human and financial resources
- Describe security threats and make recommendations for self-care of humanitarian actors
- Critically analyse the emergency vs development divide

#### Career Opportunities

There are many employment opportunities in the areas of managing refugee camps and working with displaced populations, both in the developing world as well as throughout Europe. Many NGOs are looking for people with skills in how to manage refugees; gender advisory roles and technical specialists are just some of the roles. On a UK note, many social workers and public health specialists have found the course useful.



*Working together led to interesting group work and the ability to chat with people from a lot of different humanitarian and development backgrounds.*

## Development of a Disease Control Programme

2 weeks

### 3 good reasons to study

1. This course guides you step by step through the process of planning and implementing.
2. Participants will identify a health problem from a self-selected authentic scenario.
3. Experienced programme managers provide guidance to enable you to apply your knowledge and develop your own plan to address this problem.

### Course Outline

This course aims to provide you with knowledge and critical understanding of the principles and processes of designing and monitoring a disease control programme for a low-income or middle-income country. In most low-income and middle-income countries, communicable diseases (eg, TB, malaria, HIV/AIDS) continue to be a major cause of human suffering and preventable death. Interventions to control those diseases are well described and proven to be effective, but they are often not widely applied due to lack of resources, political commitment, or health systems issues. To understand these gaps and missed opportunities in service provision at district level, you will learn how to analyse underlying problems and causes in a specific context. From there, we will progress through the planning cycle and develop the disease control plan further, developing aims and objectives and selecting an appropriate control strategy based on clear criteria. Disease control plans require concrete actions to be implemented, monitored and evaluated. You will discover the benefits of well-designed logical frameworks and indicators. Successful plans are a result of good teamwork, drawing from the expertise of individuals with different backgrounds. This course therefore relies on group activities, using a student-centred approach, including tutor-led presentations and self-study. Tutors will provide feedback on an outline of your own disease control plan at the beginning of the second week.

### Learning Outcomes

- Use existing global and local knowledge and intelligence to identify disease control priorities within a country
- Identify key constraints with delivery of improved health outcomes in existing disease control programmes
- Appraise strategies, identify options, and develop an action plan to improve delivery within the context of the existing health system, taking into account health care need, the socioeconomic, geographic environment, and existing services
- Interpret and devise health and disease control indicators, and devise a monitoring and evaluation programme.

### Career Opportunities

Disease Control has been highlighted by the Ebola Outbreak in West Africa, H5N1 Avian Influenza, Zika Virus, and MERS. People with disease control skills are highly sought after. Past alumni of this course typically go and work for health ministries, health departments, national, or international disease control agencies, aid organisations, or universities.



“The course is well organized with appropriate content, even for some of us who had no prior experience to disease control planning, we were able to learn.”

## Media, Policy and Advocacy

2 weeks

### 3 good reasons to study

1. This exciting course examines the relationship between media and political power, and ensures that you will never again view the media, including social media, in the same way.
2. You will have the opportunity to practice filmed media presentations under the guidance of a leading humanitarian field expert.
3. By regularly conveying information to important audiences, from the general public to government and international decision makers, the media plays a large role in shaping public debate.

### Course Outline

This course aims to provide you with knowledge and critical understanding of political debates regarding Western humanitarianism and issues pertaining to media and aid delivery and humanitarian action. The media play an ever more important role in shaping our world and in determining how we view humanitarian issues, sometimes known as the CNN effect. You will begin by looking at the role of the media in war, which starkly exposes the role of political power in shaping what is covered and how it is covered. We will then move on to discuss three different theories that help to explain the relationship between political power and the media. We ask who owns the media, and does this matter. You will explore some of the challenges to existing media power, the role of Aljazeera in comparison to the Fox network, and the growing role of social media. You will also examine where the international media failed, such as in the Rwanda genocide. You will learn how to use the media effectively as a tool of advocacy, which includes being filmed in a mock interview on camera – in the future this could help you to manage the media better in a humanitarian crisis. In addition to lectures, the course will involve watching videos and discussing the issues that they raise.

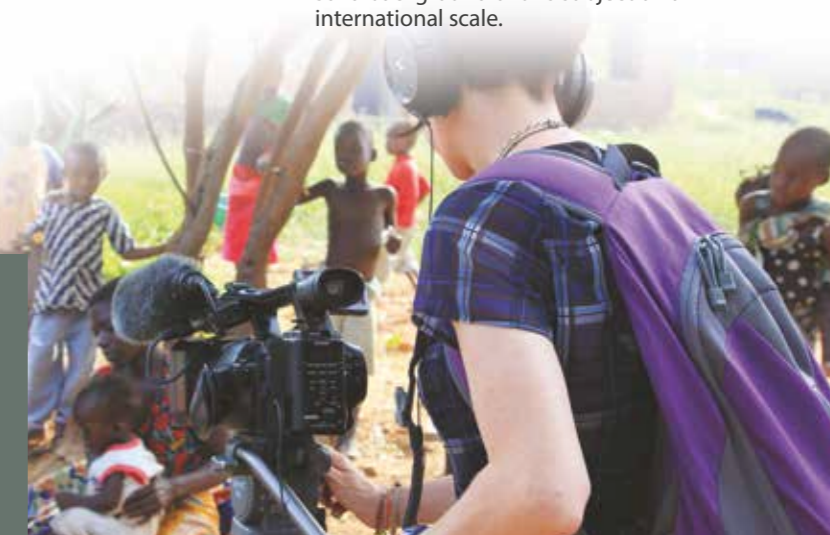
### Learning Outcomes

- Discuss the politics of aid delivery and humanitarian action
- Discuss the geopolitics of humanitarian action in the 1990s and the new millennium
- Critically review the theories of media-state relations and the factors that affect media coverage of humanitarian crises
- Discuss practical issues pertaining to media management during humanitarian responses

### Career Opportunities

Media advocacy is the strategic use of news-making through TV, radio, internet, and news outlets to promote public debate and generate support for changes in norms and policies. A career in advocacy offers exciting opportunities in a range of settings, from NGO's, local health groups, and charities, to the national and international stage. This course will look at failures and successes, to give you a solid background of this subject on an international scale.

“Really interesting course, great use of video clips for learning. Excellent interactive sessions.”



## Humanitarian Operations: Environmental Health & Logistics

2 weeks

### 3 good reasons to study

1. The humanitarian sector needs many skills, not just medical, and this course explores the variety of skills needed.
2. This course is suitable for water and sanitation technical specialists, logisticians, security specialists, project co-ordinators, contractors, etc. The list is endless, and all are widely needed across the humanitarian sector.
3. This course provides a valuable gateway to understanding the humanitarian sector.

#### Course Outline

This course aims to provide students with knowledge and critical understanding of the principal technical challenges encountered in supporting emergency humanitarian operations. You will learn how to adopt a reasoned and evidence-based approach to anticipating and identifying the technical challenges associated with humanitarian interventions, and to develop and evaluate strategies for their management. Topics covered include planning and managing the logistics chain; tools for financial management and control; managing human resources; field communication equipment; provision and maintenance of accommodation and utilities; environmental and public health hazards; environmental health planning; managing effective programmes for sanitation and water supply; and risk factors and control strategies for vector-borne diseases. We employ interactive lectures, student-led seminars, and group work around case studies and problem-solving exercises. Practical sessions on methods of water purification and demonstrations of important disease vectors are held in the laboratory.

#### Learning Outcomes

- Plan logistics support for the management of humanitarian operations
- Develop evidence-based strategies for effective water, sanitation, and environmental health programmes in humanitarian emergencies
- Review critically the available literature and summarise key points on technical aspects of humanitarian operations support.

#### Career Opportunities

Many students go on to work with major NGOs in the field. NGO work is not just the realm of medicine, also needed are logisticians, cultural mediators and interpreters, water and sanitation specialists, biomedical scientists, project co-ordinators, security specialists, nutritionists, HR specialists, and finance officers.



*“The topics were relevant and the content had clear practical applications in the field.”*

## Health in Humanitarian Emergencies

2 weeks

### 3 good reasons to study

1. You will learn from specialists who have extensive experience in the field.
2. Maintaining and improving the health situation of vulnerable populations lies at the heart of most aid projects, especially during a humanitarian emergency.
3. Humanitarian professionals must be equipped with sufficient basic knowledge to be able to identify and monitor health problems during crises, and to develop effective and appropriate intervention strategies in complex situations.

#### Course Outline

This course aims to provide you with knowledge and critical understanding of common public health problems in humanitarian emergencies. You will learn how to adopt an evidence-based and reasoned approach to the critical assessment and management of health problems in humanitarian emergencies, and to develop and evaluate strategies for their prevention and control. Topics covered include common public health problems; rapid needs assessment; calculating key indicators of the health status of a population; health information systems in emergencies; the primary health care approach to humanitarian emergencies; environmental health planning and management; surveillance, control and management of communicable diseases; food security and malnutrition; reproductive health, gender-based violence, and sexually transmitted infections; mental health; and health promotion and post-conflict health needs. We employ interactive lectures, student-led seminars, and group work around case studies and problem-solving exercises. Practical demonstrations of important disease vectors are held in the laboratory.

#### Learning Outcomes

- Plan strategies for the critical assessment and management of common public health problems in humanitarian emergencies
- Develop appropriate evidence-based approaches to disease prevention, surveillance, and control
- Review critically the available literature and summarise the key issues of public health importance in humanitarian emergencies.

#### Career Opportunities

This course is suitable for health professionals working in humanitarian or development projects, humanitarian workers of various backgrounds managing health projects, as well as those wishing to move into the humanitarian sector.

*“An amazing and stimulating learning environment, met all my expectations.”*

*“Great lecturers with a wealth of knowledge and experience.”*

*“Really fantastic topics. I thoroughly enjoyed the nutrition sessions and the ebola session. I liked that we were able to explore both public health theory as well as learn some practical tools and assessments that we can use in the field.”*

## Health Promotion

2 weeks

### 3 good reasons to study

1. Increasingly, public health activity in low-income and middle-income settings revolves around working in partnership with a wide range of individuals and organisations, and reorienting services so that they improve and promote good health.
2. This course will provide you with the knowledge and skills to take a leadership role in the development of partnerships, to improve and promote health.
3. Health promotion knowledge and skills are in short supply, and the learning from this course will enhance your career prospects.

#### Course Outline

This course aims to provide students with knowledge and a critical understanding of the theory, principles, and practices of health promotion. The world is in the middle of an epidemiological transition. This creates a need to develop health in all policies and to reorient services towards the promotion of health. The knowledge and skills to do this effectively is in short supply. You will gain an in-depth perspective on the application of health promotion strategy and policy to reduce the impact of non-communicable diseases in a low-income setting. Topics covered include the historical development of health promotion; the prerequisites for health as a resource for living; the concept of 'healthy public policy' based on the wider determinants of health; the evolution of health promotion theory and practice, from early behaviour change to social marketing and nudge theory; the importance of independence and advocacy; the prioritisation of need and tensions linked to resource allocation; concepts of risk and risk communication; and monitoring and evaluation of health promotion. We will use interactive lectures to introduce a topic and in-depth learning will be developed during seminars and group exercises.

#### Learning Outcomes

- Critically evaluate theories and models of health promotion and behaviour change, and their application at individual and community levels
- Critically review the concept of health risk and risk communication in public health practice
- Critically evaluate health promotion strategies, policies, and practices designed to reduce the health burden from non-communicable diseases in a low-income country setting.

#### Career Opportunities

The job role goes far beyond working with individuals to better their health; health promotion specialists are also integral to the strategy work behind health policy development. Previous students have come from a range of backgrounds internationally.



*The course was really interesting with a good mix of evidence based teaching with practical examples. The group work was also a positive experience allowing us to apply what we had learned in lectures.*

## Management & Personal Development



## Organisation & Management

2 weeks

### 3 good reasons to study

1. Teaching uses realistic case studies based on experience and knowledge of the teaching staff of the situation in low-income and middle-income countries.
2. Teaching staff have up-to-date experience of research management development.
3. This course links well with other LSTM teaching including Human Resource Planning and Management

### Course Outline

This course aims to provide you with knowledge and critical understanding of the organisation and management of health care organisations. Although the practical aspects of management are the most critical for managers, it is also important to have some grounding in the major theories. Some managers help to plan programmes, whilst others may have plans for their programmes prepared at a higher level in the organisation. Whichever is the case, a major part of the manager's work is to implement plans of action, and the course aims to provide a variety of tools and approaches to help you with this task. You will learn about structures and cultures of organisations; different management functions; monitoring the implementation of plans and taking corrective action; performance and quality management; and management of change. This is taught using a student-centred approach including group exercises, case studies, and directed reading, supported by presentations from LSTM lecturers and outside speakers.

### Learning Outcomes

- Describe key principles and functions of management within an organisation
- Analyse the effectiveness of management systems in an organisation
- Identify ways of improving organisational effectiveness using quality and human resource management initiatives
- Identify strategies for the successful implementation of change in organisations.

### Career Opportunities

This course is specifically designed for managers who seek to manage the process of change and improve the performance of their area of responsibility. It is an opportunity for all professionals to advance their knowledge and keep abreast of the most modern concepts in management – particularly focussed to a health setting.



*The course was very useful and the knowledge acquired can be applied in different settings.*

## Human Resource Planning and Management

2 weeks

### 3 good reasons to study

1. This course covers all the main areas of human resource planning and management, providing a good introduction for general managers and those who want to specialise in human resource planning and management.
2. This course content is based on research and consultancy work carried out by LSTM staff, including the use of realistic case study material.
3. This is currently the only face-to-face course available in the UK on human resource planning and management for people working in health services in mid-income and low-income countries.

### Course Outline

This course aims to provide students with knowledge, critical understanding and skills to develop and sustain a high performing workforce. It is aimed at those who want to understand the complexity of human resource planning and management, and want to develop and implement appropriate strategies to make a difference. You will explore the structures needed for managing a workforce the HR skills, systems, and tools required, the challenges of scaling up the workforce for specific programmes and how, using a systems perspective, the impact on other health programmes can be seen and foreseen. Your learning will be structured around a series of three case studies based on human resource problems, supported by guided reading and group exercises. Topics covered include the dynamics of national and international labour markets; strategic sector-wide human resource planning in the context of changing health services; managing staff supply, managing performance; employee relations; organisational capacity for the planning, management, and development of an effective health workforce; and tools for HR planning and management.

### Learning Outcomes

- Analyse critically factors that influence the external and internal labour markets relevant to an organisation
- Develop a strategic plan for improving the effectiveness and efficiency of the health workforce in a given situation
- Design organisational capacity for managing human resources effectively
- Review and evaluate critically the planning, management, and development of human resources in a health-care organisation
- Access, adapt, and use tools for human resource planning and management.

### Career Opportunities

Given the importance of human resources for health to the delivery of health services, employers will see this course as a bonus to current and future managers. Attendance on this course will improve the CV's of consultants working in HR.

*This course not only provides knowledge and learning but also develops wisdom for critical and innovative thinking. For example; now I would be able to use my competencies developed through this course for bringing positive change in planning and managing human resources in my own setting in a more strategic and innovative ways.*

*As someone who is in the NGO sector, I could really relate to this course. I thought that even though the days were long and packed with information, that it was still entertaining and very engaging.*

## Systematic Reviews for Policy and Practice

2 weeks

### 3 good reasons to study

1. This course is run by people with an international reputation in preparing systematic reviews. The editorial base of the Cochrane Infectious Diseases Group is based here. Leading a network of over 300 people synthesizing research to inform global, regional, and national policies in tropical infections and conditions relevant to low-income and middle-income countries.
2. The course is based on 20 years of experience, introducing systematic reviews to tropical medicine and supervising the authors preparing them.
3. Systematic reviews are increasingly important in policy development.

#### Course Outline

This course aims to provide you with the skills and confidence to appraise, interpret, and use systematic reviews, and to know how to use them in evidence-informed policy making. You will learn how to find, read, appraise, and interpret systematic reviews, and explore ways in which research evidence is used in building policy and practice. The Course Leaders co-ordinate the Cochrane Infectious Diseases Group, a global network of researchers and clinicians committed to preparing, updating, and using research evidence to guide interventions to tackle tropical diseases and other health problems in low-income and middle-income countries. The staff are world leaders in this area, and contribute to many global and national policy and guideline developments, and many of the materials used in this course come from this work. The course is taught through interactive sessions involving discussion and group work exercises.

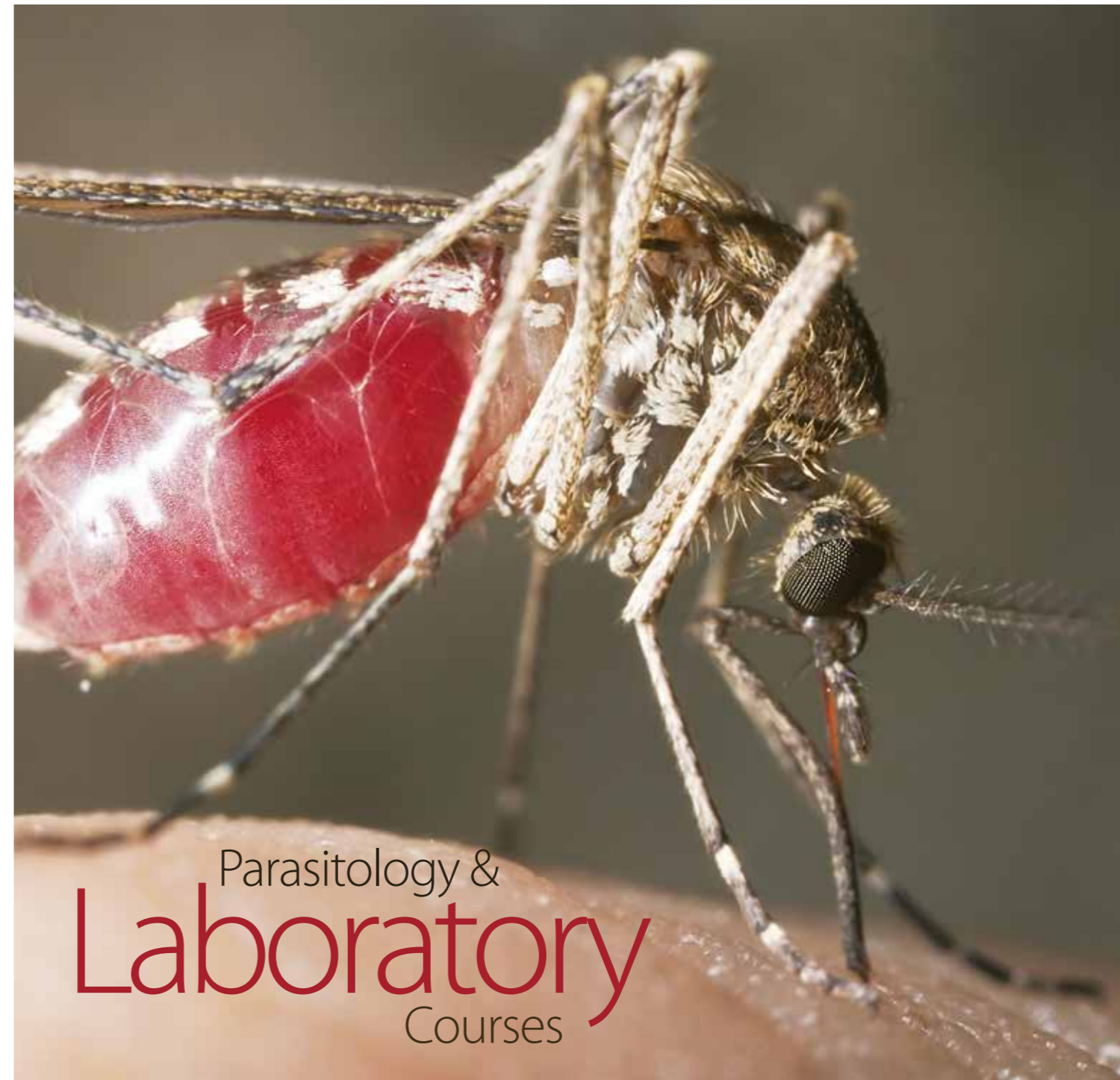
#### Learning Outcomes

- Identify, appraise, and interpret systematic reviews relevant to public health
- Assess the quality of research evidence and apply evidence to policy and practice using appropriate tools
- Discuss critically influences on evidence-informed practice at global, national, and local levels, and articulate a variety of strategies to improve decision-making.

#### Career Opportunities

The course will give you an overview of evidence informed policy and practice that is currently important in international health. This course is particularly useful for people who want to understand the basics of systematic reviews and how they are used in policy and guideline development. This will give you insights into current debates in this area, and how WHO and others link systematic reviews to decision making. It will help you if you go into public health policy and evaluation of new technologies, or health services research.

*“The course was a really good learning experience and opened my mind for critical appraisal, systematic review of literature, and policy making. The lecturers were highly skilled and very interactive.”*



## Laboratory Diagnosis of Faecal Parasites

2 days

This intensive course has a high practical content and is designed for medical officers and biomedical scientists. It concentrates on the identification in the laboratory of those parasites of medical importance (both indigenous and imported) likely to be seen in Western Europe. We will use a series of mini lectures by specialist staff, followed by extensive practical work.

### Course Content

- Examination of wet preparations faeces for the diagnosis of protozoa and helminths
- Biology of Nematodes, Trematodes and Cestodes
- Uses of concentration techniques
- Staining methods for Cryptosporidium and D.fragilis
- Diagnostic problems and other self-assessment exercises

### Career Opportunities

This intensive course has a high practical content and is designed for medical officers and biomedical scientists, especially those working in diagnostic labs.

## Laboratory Diagnosis of Faecal and Blood Parasites

4 days

This intensive course has a high practical content and is designed for medical officers and biomedical scientists. The course concentrates on the identification in the laboratory of those parasites of medical importance (both indigenous and imported) likely to be seen in Western Europe. We will use a series of mini lectures by specialist staff, followed by extensive practical work.

### Course Content

- Examination of faeces for the diagnosis of protozoa and helminths
- Malaria - recognition of parasites and other diagnostic approaches
- Recognition and diagnosis of haemoflagellates, spirochaetes and filarias
- Diagnostic problems and other self-assessment exercises
- Parasites in the immunocompromised host

### Career Opportunities

This intensive course has a high practical content and is designed for medical officers and biomedical scientists, especially those working in diagnostic labs. However, it is also open to other interested parties from related disciplines – for example, past students have included a PhD student who was studying Egyptian mummies and wanted to use these skills to identify parasites within ancient specimens!

## Laboratory Diagnosis of Malaria

3 days

This intensive course has a high practical content and is designed for medical officers and biomedical scientists. The malaria course concentrates on the biology and differential diagnosis of malaria in the laboratory but other blood-related parasites are also included. Each course comprises a series of mini lectures by specialist staff, followed by extensive practical work.

### Course Content

- Biology of malaria parasites
- Diagnosis - morphological differential of blood-stage parasites; other approaches; quantification
- Morphological anomalies and artefacts
- Malaria and the traveller / Clinical aspects in relation to laboratory diagnosis
- Diagnostic problems and other self-assessment exercises
- Introduction to other blood and tissue parasites

### Career Opportunities

This intensive course has a high practical content and is designed for medical officers and biomedical scientists, especially those working in diagnostic labs.

## Key Aspects in Molecular & Cellular Biology of Parasites and Vectors

4 weeks

## 3 good reasons to study

1. You will understand today's advances in molecular medicine and discuss its translations to contemporary disease interventions in the tropics.
2. This course is taught by world experts from LSTM and other UK universities.
3. Lectures are combined with practicals on basic gene cloning, PCR methodologies, and bioinformatics.

### Course Outline

This course aims to provide you with key knowledge and critical understanding of the molecular and cellular biology of selected parasites and pathogens, and vectors thereof, which cause significant tropical disease. Through practical laboratory training applied to study of snake venoms, you will gain key bench skills in the use of recombinant DNA technology, PCR, DNA sequencing, and basic bioinformatics analysis. Lecture content covers a broad range of topics including state-of-the-art genomic sciences and next generation DNA sequencing; molecular biology of surface antigens and their roles in parasite invasion and survival; gene function and transcription underlying antigenic variation and diversity in kinetoplastids and apicomplexans; survival and development of parasites in their arthropod vectors and parasite/vector interactions; chemotherapeutic targets and drug design including insecticide resistance in key vectors; and an introduction to molecular epidemiology. Using a contemporary example of the Ebola epidemic, this information will be conveyed by formal lectures highlighting key concepts and essential facts, guided reading to explore topics in greater depth, interactive tutorials to develop critical understanding, student seminars to reinforce learning outcomes and gain experience in presentation skills, and practical sessions to gain technical competence and to illustrate important concepts in action.

### Learning Outcomes

- Discuss the importance of differences in the molecular biology, cell biology, and biochemistry of eukaryotic parasites from those of their vectors and mammalian hosts
- Identify the unique adaptations of parasites and critically review their importance in survival and completion of their life cycles
- Critically review the exploitation of biochemical differences between parasites and their hosts in relation to parasite chemotherapy and vaccine research
- Apply a range of techniques in molecular cell biology and critically interpret the outcomes.

### Career Opportunities

Understanding the fundamental biology of parasites and insect vectors is critical for designing disease control strategies like new drugs and vaccines. This course offers a good opportunity for those who plan to work as lab or insectary technicians, fieldworkers, or pursue a PhD degree.

*I felt the course convenor was very clear from the start on the planning and what we should expect from the course - a more applied approach of using molecular techniques to solving key tropical diseases rather than the basic molecular biology.*



## Parasite Epidemiology & Control

4 weeks

### 3 good reasons to study

1. Tropical disease caused by parasites blights the lives of over a billion people globally, and you will develop a deep understanding of the epidemiology, ecology, and biology of these organisms in the fight against these debilitating infections.
2. The programme is delivered by LSTM Departments of Parasitology and Vectors of Disease which includes biologists, epidemiologist, clinicians, and leaders within WHO and global programmes to control neglected tropical disease, all with a strong research base that works in countries throughout resource-limited tropical regions of the world.
3. Knowledge and skills developed in this programme provides experience of essential techniques, as well as significant theoretical and practical knowledge in key areas of the field of tropical disease epidemiology.

### Course Outline

This course aims to provide you with knowledge and critical understanding of the principles of parasite ecology, epidemiology, control, and their practical application. Tropical disease caused by parasites blights the lives of over a billion people globally, and the application of epidemiological methodology is key in the fight against these debilitating infections. The science of epidemiology integrates surveillance, statistical analyses, laboratory and field science, and clinical and public health information, in order to understand and manage health-related problems and disease in communities, areas, and regions. In this course, you will learn about the major control programmes and approaches to combat malaria, trypanosomiasis, schistosomiasis, soil-transmitted helminths, and filarial nematodes. You will also look at the applicable aspects of surveys, sampling, modelling, education, and communication, and the impact of drug resistance on epidemiology. This is taught by a combination of lectures, seminars, laboratory practicals, and student-directed learning exercises. In the practical sessions, you will be introduced to diagnostic sample concentration methods, drug-sensitivity assays, use of 'Rapid Diagnostic Tests', and staining methods for blood and faecal parasites.

### Learning Outcomes

- Explain the meaning of key concepts in parasite epidemiology
- Describe and apply techniques used in epidemiological surveys
- Critically analyse and interpret ecological and epidemiological data
- Discuss the roles and effectiveness of chemotherapy and chemoprophylaxis in control of parasites.

### Career Opportunities

Over many years we have educated hundreds of students, many of whom have established successful careers in industry and research in the academic or private sectors, or who have gone on to work in development as part of government or NGO teams. Many different career options exist within the field of parasitology because parasites affect the world in so many ways. Previous students have included medical doctors who want a grounding in parasite epidemiology, microbiology laboratory professionals who wish to strengthen their lab with wider skills, and PhD students who are researching this area.

“ I found that the lecturers were really good and their experience in the field was often brought up in lectures which I felt was useful and gave a good idea what to expect for parasite surveillance in the field. ”

## Immunology of Tropical Diseases

4 weeks

### 3 good reasons to study

1. Immune responses to pathogens are not only important for protection from disease but also play a major role in pathology and chronicity of infection.
2. This course addresses the most efficient tool to reduce mortality and morbidity due to infection – vaccination.
3. Pathogens evolved alongside human hosts and have developed immune evasion strategies to ensure their survival. This course covers some of the evasion strategies which might be exploited in the treatment of other diseases, such as autoimmune conditions.

### Course Outline

This course aims to provide you with knowledge and critical understanding of the interaction of pathogens with the immune system, mechanisms of immune evasion, and their relevance for pathogenesis and chronicity of infection. You will learn how the host defends itself against complex pathogens including protozoa, helminths, bacteria, and viral infections commonly encountered in tropical regions. You will appreciate the complex interaction between the pathogen and the host that contribute to pathology, immune evasion, and chronic infections. We will cover a diverse range of topics including an introduction to basic immunology and immunological techniques; immunity to various pathogens; antigenic variation of *Plasmodium falciparum*; modulation of immune responses by helminths; sero-therapy of snake bite; and modern approaches to vaccination, all taught through a combination of lectures, tutorials, and practical classes. You will have the opportunity to examine up-to-date research literature through student-led presentations, and one week is devoted to intensive laboratory sessions, during which you will be exposed to a range of cutting-edge immunological techniques.

### Learning Outcomes

- Explain the nature of humoral and cell-mediated immune responses to parasitic infections
- Discuss the role of cytokines in the modulation of immune responses
- Explain why inappropriate immune responses can have undesirable immune-pathological consequences
- Discuss immune evasion strategies that parasites employ and explain their significance to chronic infection
- Use current research to explain how sero-therapy, biological vaccination against tropical diseases might be achieved
- Apply a range of immunological techniques and critically interpret the outcomes.

### Career Opportunities

People with skills from this course typically work in the following fields: academic clinical research, pharmaceutical industry (vaccine development, immune therapy), and diagnostic labs.

“ The lectures were very varied and interesting. ”

“ The practical aspects of the module were really useful. ”

## Vector Population Biology & Control

4 weeks

### 3 good reasons to study

1. This course takes a strongly applied approach to understanding population biology, which lies at the heart of vector control.
2. You will gain insight of real world examples of vector control from research-active staff and guest lecturers running projects in Africa, Asia, and South America.
3. The highly interactive course is broad discipline (DNA to species) with a range of learning methods to enhance problem solving skills.

### Course Outline

This course aims to provide you with knowledge and critical understanding of how theory and practice in disease vector population biology is applied in the design and implementation of control programmes. Vector population biology is a diverse field at the centre of well-designed control programmes. You will study and apply knowledge of vector genetics and evolution, individual behaviour, population ecology, and population connectivity. The course aims to provide not only in-depth insights into the key features of particularly important vectors and how these can be exploited for control, but also to identify cross-cutting themes, which can inform integrated multi-disease management programmes. Multiple methods of control, including genetic (transgenic), chemical, biological, and physical methods will be compared and evaluated, along with practical methods essential for monitoring and evaluation of interventions. Learning occurs through a combination of lectures and seminars – many involving guest speakers, all of whom are experts in the field - informal seminars using problem-based approaches and case studies, and laboratory and computer practicals. It includes a 'journal club' exercise when you will get the opportunity to critically analyse a primary research paper in vector population biology.

### Learning Outcomes

- Explain how ecological techniques are used to investigate vector population dynamics and how this knowledge can be applied to control
- Discuss key principles of population genetics and population structure, the methods available for their study, and their relevance for vector control
- Explain how the principal genetic, chemical, biological and physical methods of control for vectors are carried out, and discuss their limitations
- Discuss the major forms of insecticide resistance, their genetic and bio-chemical basis, and their impact on control operations
- Evaluate the importance of vector control in relation to other methods, including chemotherapy and vaccines

### Career Opportunities

Learning from leading tropical-disease research scientists, you will hone skills in analysing and investigating data, problem solving, and verbal and written communication that are highly valued by employers across the board.



## Key Topics in Snakebite: Biology, Epidemiology, Pathology & Treatment

2 weeks

### 3 good reasons to study

1. This is the only course in UK to focus exclusively on tropical snakebite - and is delivered by teaching staff that are experts in the field, and at the centre of global efforts to reduce snakebite-induced mortality and morbidity.
2. This course covers all aspects of snakebite and provides you with the information needed to understand why snakebite is a profoundly neglected disease.
3. This course incorporates a practical session which provides you with unique access to venoms and antivenoms, as well as opportunities to conduct experiments on the antivenom/venom binding that explain many clinical, geopolitical, and fiscal issues.

### Course Outline

LSTM hosts the Alistair Reid Venom Research Unit with a herpetarium housing more venomous snake species than any other research establishment in Europe, mainly spitting cobras, puff adders and carpet and saw-scaled vipers because of their significance in envenoming.

This course aims to provide you with in-depth knowledge and critical understanding of the key reasons why the rural poor in Africa and Asia suffer the highest rates of snakebite mortality and morbidity, and yet are so neglected by Tropical Governments and International Health Agencies.

You will learn about the global snakebite disease burden, the main risk groups, and the geopolitical factors that make snakebite one of the most marginalised of all the Neglected Tropical Diseases, and the attempts being made to increase the global recognition of snakebite as a tropical public health concern. You will discover how a fuller understanding of snakebite pathology, treatment and epidemiology, can be gained from studies on molecular, biochemical, and immunological aspects of snake venoms and venomous snakes. The content is designed to appeal to students from diverse academic backgrounds (e.g. biology, public health, and medicine). The course uses lectures to provide core information, tutorials for interactive discussion of topics raised in the lectures and an intensive practical session linking methods of immunological analysis to snakebite treatment.

### Learning Outcomes

- Discuss critically the major issues that categorise snakebite as a Neglected Tropical Disease.
- Demonstrate detailed in-depth knowledge and understanding of the clinical treatment and epidemiology of snakebite and the basic biology of venomous snakes.
- Explain how an understanding of molecular, biochemical and immunological aspects of snake venom and venomous snakes relate to, and inform our knowledge of, the biology, epidemiology, pathology and treatment of snakebite.
- Conduct an enzyme-linked immunosorbent assay (ELISA) assay in the laboratory and correctly interpret the results

### Career Opportunities

This course is designed to appeal to people from diverse backgrounds, e.g. biology, public health, medicine, and veterinary medicine. Also, PhD students may find this course useful.

Please note that there is a laboratory aspect to this course and that suitable experience would be required. Tropical disease information and practical skills gained from this course provide a USP to improve your CV. The tropical disease information and practical-skills gained from this course are transferrable to other tropical disease careers you may wish to pursue.

*“The course was interesting and the staff were excellent. I particularly enjoyed the amount of guest speakers as they had different teaching methods which kept things dynamic.”*

*“The clinical and epidemiological aspects of this course were very interesting and useful for people with medical background.”*

## Applied Bioinformatics

2 weeks

### 3 good reasons to study

1. Tropical disease blights the lives of over a billion people globally and you will see how bioinformatics solutions help further our understanding in approaches to control in the fight against these debilitating infections.
2. The course is delivered with a strong research base that works in countries throughout resource limited tropical regions of the world.
3. This course will provide you with experience of essential practical methods and techniques, as well as significant theoretical knowledge in key areas of the field of bioinformatics.

#### Course Outline

This course aims to provide you with knowledge, understanding, and practical experience in using computational methods and bioinformatics approaches. Although bioinformatics is a relatively new scientific discipline it is increasingly broad in its definition and application. Its generic skills and methods are now commonly seen to be applied in furthering our understanding in the broader life sciences including biology, chemistry, and medicine for example. In this course, you will learn how to use a variety of bioinformatics tools and interpret output data from functional genomics experiments and genomic, transcriptomic, and proteomic technology platforms. At the start of the course, you will be given an individual 'mystery DNA sequence' and, as the course proceeds, will learn how to analyse this sequence, discovering and unfolding the properties, functions, roles, and biological importance of the gene and encoded protein. We take a practical-based interactive learning approach where introductory lectures and computer-based practicals in bioinformatic approaches employ a range of data from parasites and vectors of disease as examples to introduce the concepts of functional genomics technologies and analyses.

#### Learning Outcomes

- Demonstrate knowledge and understanding of the types of data generated by different genomic, transcriptomics, proteomics, and metabolomic technologies and the implications for analytical methodologies.
- Develop & apply bioinformatics approaches and skills to address research questions and problems of practical relevance
- Use a variety of appropriate bioinformatics databases and publicly available bioinformatics software packages.

#### Career Opportunities

Over many years we have educated hundreds of students, many of whom have established successful careers in industry and research in the academic or private sectors, or who have gone on to work in development as part of government or NGO teams. Big data is pouring out of life sciences research, creating ample opportunities for scientists with computer science expertise. With a seemingly endless stream of biological data being generated across sectors, there is high demand for talented, experienced professionals at the crossroads of biology, statistics, and computer science. Scientists who can analyse large amounts of information and present it in a clear manner to decision-makers are finding opportunities in terms of jobs and career pathways, especially in the big pharma and biotech sectors.

“Using mystery sequences from a real research study was brilliant as well, rather than having something just made up, it gave a feeling of a real experience.”

# Postgraduate Research Degrees (PGR)



## Postgraduate Research Degrees (PGR)

Our research degrees provide professional, self-motivated researchers with the freedom to explore their chosen subject to its limits. Students are given support to make a significant contribution to important areas of research.

At LSTM, we offer students the opportunity to work with internationally recognised and renowned experts and research groups. Our research continues to improve the health of the world's poorest people, with a research portfolio in excess of £210 million.

LSTM offers the following Research Degrees:

1. **PhD studies** are undertaken over a period of between two to four years (full-time), or four to six years (part-time).
2. **MPhil studies** are undertaken over a period of between one to two years (full-time), or two to four years (part-time).
3. **MD studies** are undertaken over a period of between two and six years (part-time only).

There are opportunities for both laboratory and field-based research, depending on the subject area selected.

We supervise students in the following general research areas:

**Vector Biology**  
**Parasitology**  
**Public Health**  
**Sexual & Reproductive Health**  
**Maternal & Newborn Health**  
**Clinical Tropical Medicine**  
**Humanitarian Research**

**Applications are accepted all year round, with some fully paid studentships available annually (see website for details, and how to apply).**

**Structure:** Pursuing a PGR programme at LSTM means embarking on a programme of research which is supported by a catalogue of opportunities for Personal and Professional Development, and Core Training offered by the Liverpool Doctoral College, and LSTM. The written thesis must be submitted within four years from the beginning of registration (full-time) or six years (part-time). Students and supervisors must engage with a process of identifying development needs, completing training as required, and producing a portfolio of activity, before the oral examination can take place.

### Our commitment

Registration for research degrees represents a contract between the candidate and LSTM, within which are a number of requirements and expectations on both sides.

LSTM is committed to providing:

- Supervision by a research-active Supervisor, plus any appropriate external supervisor
- Outstanding support in terms of access to essential equipment, access to the library and electronic resources, computing

facilities, and facilities related to the research area for on-site and off-site students

- Regular supervision including formal planning meetings throughout the academic year, at which targets are agreed and recorded
- Annual progress monitoring
- Support where possible for the student to present results at national and international conferences
- An oral examination of the thesis by an external and internal examiner, within three months of submission.

### Important events throughout the year

LSTM PGR Student Conference Progress Assessment Panel Meetings **May – June**

Annual Progress Report Release **–June**

**All enquiries to [pgr@lstmed.ac.uk](mailto:pgr@lstmed.ac.uk)**

*I chose to study at LSTM because I knew I would receive guidance and support from researchers at the forefront of international public health. As a doctoral student, I am encouraged to develop myself as a scientist and learn new skills necessary for a long-term successful career in tropical medicine. Rinki Deb, 2016*

### Professor Sally Theobald

Chair in Social Science and International Health

LSTM offers a vibrant opportunity to study and research using multidisciplinary approaches. For example our COUNTDOWN programme of work on neglected tropical diseases brings together partners from Ghana, Cameroon, Nigeria, Liberia and researchers from each of LSTM four departments to better understand how to address and implement change for more equitable, effective and sustainable approaches. Many of our research projects take a health systems approach, to enable analysis of how to strengthen and build resilient health systems that respond to health priorities in different contexts and we are delighted to be the hosts of the 2018 Health Systems Global symposium.



### Professor Alister Craig

Dean of Biological Sciences, Member of the Wellcome Trust Expert Review Group (Pathogen Biology and Disease Transmission)

“LSTM’s research is driven by its mission to improve the health of the poorest communities in the world, and so has a strong translational theme running through it. We believe that to deliver our vision we need to support research and promote communication across multiple disciplines spanning laboratory, clinical and social sciences.”

## Research is at the core of LSTM

Ranked 6th in the UK for Impact in the REF 2014, we aim to become an undisputed world leader in research and scholarship.

## LSTM School Centres & Units

**Centre for Evidence Synthesis in Global Health (WHO Collaborating Centre for Infectious & Tropical Diseases)** - Research to inform global health policies in international Health

**Centre for Maternal & Newborn Health (WHO Collaborating Centre)** - Improving the availability and quality of healthcare for mothers and babies in contributing to a global reduction in maternal and newborn mortality and morbidity and improvement in quality of life

**Research Centre for Drugs & Diagnostics** - An experienced multi-disciplinary group of experts at LSTM working together to develop new drugs and diagnostics

**MaITREC** - Malaria Transmission Reduction and Elimination Centre

**Centre for Applied Health Research & Delivery** - Transformation of health systems to improve the health of low and middle income populations.

**Centre for Health in the Eastern Mediterranean (CHEM)** - Focussing on education and training, research and technical assistance.

**Alistair Reid Venom Research Unit** - a unique resource for snake venom research and housing the largest collection of venomous snakes in Europe.

**Filarial Programmes Support Unit (FPSU)** - Working towards the elimination of filarial infections and reducing the burden of neglected tropical diseases

**Capacity Research Unit** - More robust evidence is needed on what works in health research capacity strengthening and about what metrics to use to demonstrate the progress and impact of such initiatives

**Bioinformatics Unit** - a strategic academic partnership to develop bioinformatics tools

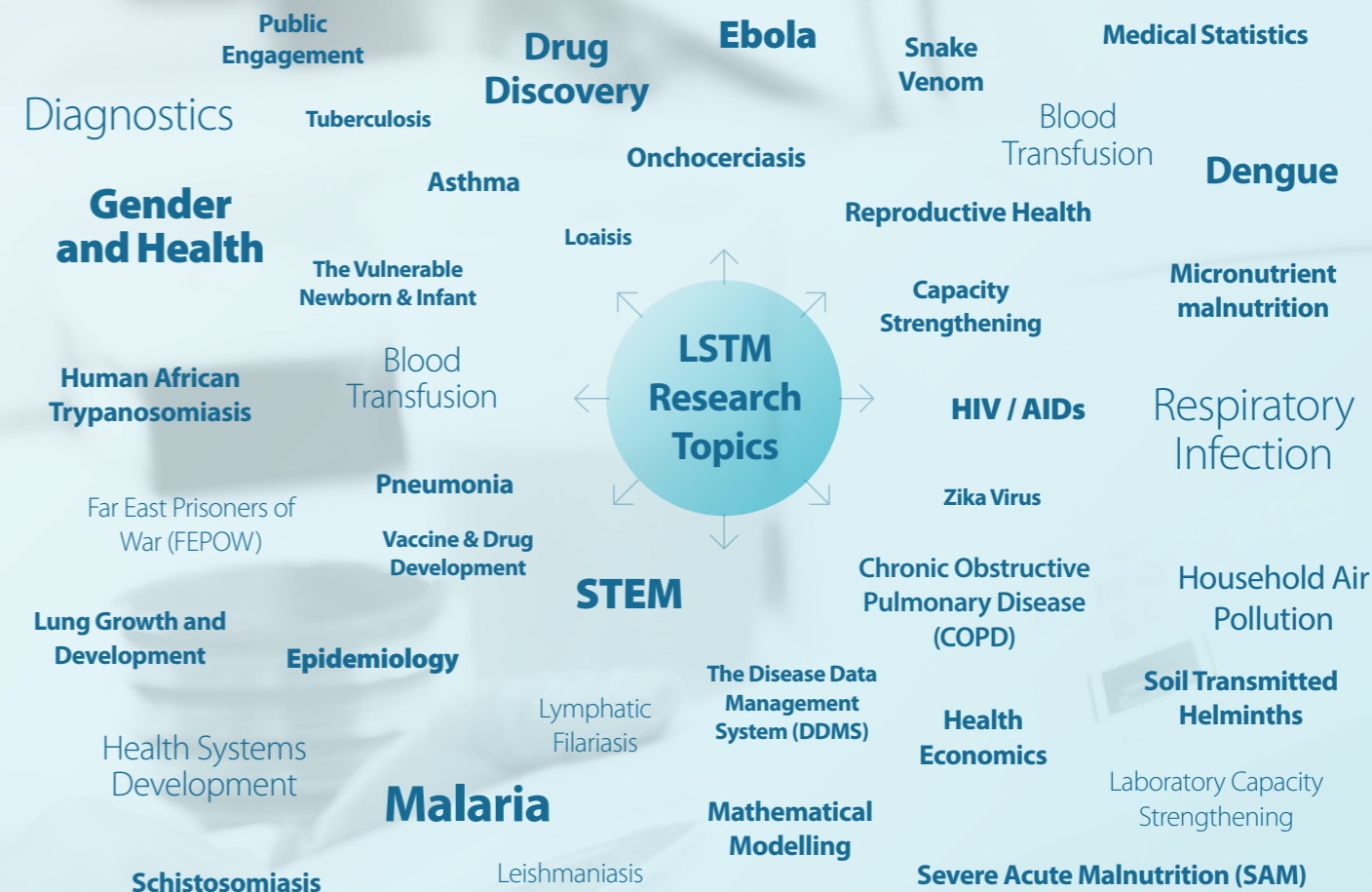
**Tropical Clinical Trials Unit** - Working to ensure that the best possible interventions are available to those people suffering from infectious & debilitating disease and conditions amongst the world's poorest communities

**ETCH: Engaging Tools for Communication in Health** - the unit develops, delivers and analyses the value of digital solutions for training, communication and engagement in public health

## LSTM Cross-Cutting Research Themes

We have six cross cutting themes representing significant areas of strength in LSTM and draw upon expertise from across all research departments.

- Neglected Tropical Diseases
- Malaria & other Vector Borne Diseases
- Maternal & Newborn Health
- Lung Health and Tuberculosis
- Applied Health
- Resistance Research & Management





*Your* LSTM  
**story**  
*starts*  
**here!**

## How to **Apply?**


All applications are online through our website  
[www.lstmed.ac.uk](http://www.lstmed.ac.uk) select your course and click the Apply Button.

This will take you through to our online portal – mylstm

## How to **Enquire?**

There is an Enquiry button on all course pages.  
Please click this and post your enquiry

Alternatively, you can email [mylstm@lstmed.ac.uk](mailto:mylstm@lstmed.ac.uk)



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**[www.lstmed.ac.uk/study](http://www.lstmed.ac.uk/study)**

*All information in this Prospectus correct  
at time of print. LSTM reserve the right to  
amend any information therein.*

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*Unattributed student comments have  
all come from anonymous online  
evaluations of the programme or course  
on which the quote appears.*