

LIVERPOOL SCHOOL OF TROPICAL MEDICINE



ANNUAL REPORT
2006 - 2007

Mission Statement

As a centre of excellence, the Liverpool School of Tropical Medicine, through the creation of effective links with governments, organisations and institutions and by responding to the health needs of communities, aims to promote improved health, particularly for people of the less developed countries in the tropics and sub-tropics by:

- providing and promoting high quality education and training;
- conducting first class research and disseminating the results of that research;
- developing systems and technologies for health care and assisting in their transfer and management;
- providing appropriate consultancy services.

In fulfilling this mission the School also provides a clinical service of acknowledged excellence.

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Chairman's Foreword

Going past the School in Pembroke Place no one can doubt that it is flourishing. The sight of people from all over the world going in and out has long been a sign that what went on in the School had tremendous significance throughout the tropical world and beyond. Indeed, it has been claimed that this relatively small institution has made a difference to more lives worldwide than any other organisation in Liverpool - through its research, teaching and technical assistance. Now the huge stunning glass structure alongside our older buildings tells of great expansion and further potential. The new Centre for Tropical and Infectious Diseases, nearing completion and equipped to the very highest standards for modern groundbreaking scientific research, will enable the School to fulfil even more its mission "to promote improved health particularly for people of the less developed countries in the tropics".

This has been the fifth year of an extremely ambitious strategic plan and the targets set five years ago have been greatly surpassed, as the new build and the many new staff adequately demonstrate.

The reputation of the School is stronger than ever, and research grants are at record level. Teaching provision has been reviewed and enhanced with new courses overseas as well as improvements in Liverpool. Thus, as the research base is expanding, so is that of teaching. With the new overseas courses, students here and abroad, will reap the benefits of the School's high standards of teaching

The services of LATH, the School's wholly owned subsidiary and technical assistance arm, are in high demand. To equip LATH to respond ever more effectively, its governance and management arrangements have been

reviewed and strengthened. Here I must warmly thank Lawrence Holden who has been a noble friend in helping LATH by conducting the review, as well as his earlier review of School, and David Greensmith for his leadership of the improvements since taking over the Chairmanship of the LATH Board earlier this year.

New plans to greatly expand and enhance the services and coverage of the Travel Clinic have started to be put in place to meet the much greater demand for expert advice and treatment for overseas travel.

The School's links with the NHS have always been strong with clinical staff coverage of the infectious disease wards at the Royal and other hospitals in the city, but this year we were very proud to be part (with the University of Liverpool and led by the Royal Liverpool and Broadgreen University Hospital) of the award of the NHS Biomedical Research Centre Programme in infectious diseases.

Most of these great achievements and plans are covered in this Annual Report, which aims to share and explain the very considerable changes and successes of the year.

Recognition and enormous thanks are due to the School's rapidly expanding dedicated and immensely talented staff, led by an exceptionally dynamic and far sighted Director, supported by strong senior management and a very good Bursar. During Janet's six years with us LSTM has prospered and grown to three times its previous size, and there will be much more to come.

The School is very fortunate to benefit from the wise counsel and knowledge of the wider world context of our President, Sir Mark Moody-Stuart, and for the support of all our distinguished Vice-Presidents. We are also very grateful to all supporters and benefactors who have generously donated to make such growth possible.



The Board of Trustees and its subcommittee have overseen a magnificent programme of development and has recently approved a new strategic plan. I would like to thank all of them for their strong contributions. During the year we said goodbye and thank you to Dr Ruth Hussey for her many years service. Last December we welcomed warmly, as new Trustees, Jonathon Brown, who has taken over Chairing the Audit Committee, David Greensmith, Who Chairs LATH, and Dr Ann Hoskins, Deputy Director of Public Health for the North West, herself an alumna of the School.

At the AGM five of us will be retiring after an immensely rewarding association with the School: Rob Macfarlane has been a superb Treasurer and Board link to the new building; Simon Sherrard was persuaded to continue as a very valuable Vice Chairman; Martin Cooke has given great help with finance, investment and nomination matters; William Fulton, who was Chairman before me, has stayed on to Chair the Nominations Committee and has always been a very knowledgeable and passionate supporter of the School; and I shall also be retiring at the AGM after twelve years on the governing body and five as Chairman. It has been a fascinating and very rewarding time for me, full of admiration for all the able and inspiring staff and students I have met. I am delighted that James Ross with his great knowledge and love of Liverpool, distinguished international business experience and strong understanding of Higher Education will take over the Chair of the Board at the AGM for its next exciting phase.

This is a time to celebrate huge achievements and to be very confident of an even stronger future for the School with new branding and identity, but continuing true to its ideals to serve the very neediest people in the world as well as we possibly can.

Rosemary Hawley

Director's Report



Infectious diseases are receiving greater attention now than a decade ago. The international community, spurred by the growing leadership of new organisations such as the Bill and Melinda Gates Foundation, are starting to assess where we can make a major impact on some of the major causes of morbidity and mortality in tropical countries. While these initiatives are welcome, the challenges posed by the roll-out of treatments for HIV, the deployment of drugs in novel combinations for multi-drug resistant malaria and TB, and the rate at which new treatments for many diseases can be discovered and developed in partnership with industry continue to grow. The School's expanded staff, combined with the new Centre for Tropical and Infectious Diseases facility has a growing international role in these initiatives.

This year we have seen the expansion of the malaria drug development programme, and major initiatives to reduce the transmission or improve the treatment of elephantiasis (filariasis), sleeping sickness and dengue haemorrhagic fever have received funding. The School also has a lead role in a new US\$40million Consortium that will develop and evaluate treatment regimes for malaria with existing drugs for young children and pregnant women. The first projects have also been initiated with industry to develop new public health insecticides for malaria control.

Two joint ventures, with the University of Liverpool (UoL) are flourishing. The leadership of the Wellcome Trust Tropical Centre in Malawi (a joint venture with UoL and the College of Medicine, Malawi) has transferred from Professor Malcolm Molyneux to Professor Robert Heyderman. Rob will continue to support the active programme on cerebral malaria while expanding his own research area of Medical Microbiology within the centre. Plans are being developed, in consultation with the Wellcome Trust, to expand the current facilities to house the expected increase in activities in Malawi. In the UK the Royal Liverpool and Broadgreen Hospital Trust along with UoL and LSTM were awarded one of only two NHS Biomedical Research Centres outside the golden research triangle. This national centre of excellence for Infectious Diseases in Liverpool recognises our unparalleled collective strengths in this area.

None of this would be possible without the many unsung hero's of the School. The many technicians, secretarial, financial, facilities management, IT and human resources support staff ensure that the School can undertake its massively increased research and teaching programmes effectively and efficiently. Team spirit within the School remains high, with all members of staff understanding and valuing their roles and importance within the broader strategic plans of the institution, as evidenced by the award of Investors in People status to the Institution earlier this year.

We will be making several new senior appointments this year, the first in International Health, in line with the strategic growth plans for the next 5 years. These new appointees will, I am sure, become part of the coherent expanded team of staff, trustees and LSTM supporters who together ensure that we continue to be a major force in directly and indirectly improving health for millions of people in tropical disease endemic countries.

I hope that many of our valued supporters will manage to visit us in the new facilities in 2008.

Janet Hemingway

Treasurer's Report

It gives me great pleasure to write another positive report on the year's financial results. In my last year as LSTM's Treasurer, having held the position for the last 12 years, I am proud to see a surplus of £420k, not only from the financial performance perspective but also from the high level of control and the quality of financial stewardship embedded in the Institute. The effectiveness of support services and professional planning by the external auditors ensures that the process of producing Financial Statements is timely and without surprises. The production of regular monthly Management Accounts and budgetary control systems emboldens the process. The research, teaching and consultancy undertaken by LSTM have always been of the highest level. It is comforting, from an accountant's perspective, to know that the internal control and administrative processes are of a quality to match those activities that are reflected by the ease of the year-end audit programme.

Although the management and support provision is streamlined compared to other academic institutions, LSTM has continued to invest in its core support services during the year reinforcing its teams for Information; Estate development; Health and Safety; Research Management; Finance; Human Resources and Student Support specialists. LSTM has also undertaken major initiatives including re-branding, modularisation of its courses, and the building of a major new facility.

The completion of the Centre for Tropical and Infectious Diseases (CTID), our new prestigious building, is on time and within budget with an anticipated completion date of 20 December 2007. The actual capital expenditure to the end of July is £19,978k. Staff moves have been organised for February 2008 and a formal opening anticipated in May 2008. The process has been controlled by a steering committee which has ensured that the variations are kept to a minimum. The effectiveness of the process is easily evidenced by the close resemblance of the building to the original plans. The third floor fit-out has been omitted from the main contract due to timing issues and the work is anticipated to commence early in 2008, with a completion date in November 2008.

Following Professor Janet Hemingway's success with the Bill and Melinda Gates Foundation reported last year, two senior staff members have been awarded major

funding. Professor Mark Taylor has been awarded a \$23 million Gates grant for Lymphatic Filariasis to research *Wolbachia*, and Professor Mike Lehane has been awarded US\$4.2m from the Bill and Melinda Gates Foundation, and €2.5 million from the EU to improve area-wide control of Tsetse flies through odour-bated traps. The financial impact of these grants is yet to be reflected as they follow a nominal distribution of costs over 3-4 years. As a post financial statement note it is worth mentioning that another \$30m project, researching malaria in pregnancy, is soon to be announced. The diversity of research funded by the Bill and Melinda Gates Foundation and the increasing number of individuals in LSTM leading these projects, provides significant comfort that the first programme success was not isolated and is an indicator of the high quality of research undertaken in the School.

Deputy Director Professor Steve Ward's consortium, Antimal, is also proving very successful and has attracted a further award of €2m. Gaining this high level success within the European dimension allows further applications on a firm EU Framework 7 platform.

From a risk perspective, it is comforting that the growth in research grants is spread across several funders, and the portfolio of active grants showed a balance of £103 million as at 31st July 2007.

John McCullough, the Managing Director of Liverpool Associates in Tropical Health (LATH), LSTM's wholly owned subsidiary, has again reported increased turnover from which it has transferred £636K of Gift Aid to LSTM. LATH is the consultancy arm of LSTM and has incorporated three subsidiaries to cater for changing markets, to increase opportunities and anticipate a higher scale of prospective contracts.

The School is eligible for a Higher Education Funding Council (HEFCE) grant through its affiliation with the University of Liverpool (UoL), which in the year, increased by 28.7% to £2,928k, less £515k which is paid to the University for its services. I noted in my last report how Government policy purported to encourage Charity Support Funded (CSF) research, although the figures for last year had fallen. I am reassured that this anomaly has been rectified and the funding formula reinstated, with the current year growing by 57.6% to £1,762k less UoL contribution.



Research and student related income increased by 30% and 51.6% respectively. However, considering the importance placed on students by the Board of Trustees, their related income was seen to grow from a disappointingly low result in 2006. The student income is further skewed by a 343% increase in external and LSTM course income. The external teaching and short course results are to be applauded, and Dr Amir Hassan has been instrumental in this success. However, when these effects are adjusted the core figures reflect growth of only 11.5% in postgraduate student income. Over a five year period the income from tuition fees, in particular postgraduate research student fees, continues to fall, reflecting the difficulty in identifying sponsors available to support the high cost of funding for postgraduate qualifications. From internal analysis it is clear that the reduction in numbers is a consequence of a lack of funding rather than from decreased demand for student places in LSTM.

LSTM's inability to effect growth in its HEFCE-funded postgraduate taught provision is perceived as a major impediment to the realisation of the Board of Trustees' aspirations. This is especially problematic for LSTM as it develops new innovative courses such as those in Humanitarian Assistance.

A new five year strategic plan was adopted in 2007 and committed LSTM to invest in six new professorial posts. The commitment to appointing international experts is fundamental to the growth of the Institution and was unanimously supported by the Board of Trustees.

The national framework for support staff pay awards continues to be implemented and appropriate provisions are in place to backdate the harmonisation settlement to August 2004. The award has been implemented in conjunction with the UoL, in discussion with the Unions, and is expected to be completed by March 2008.

Rob Macfarlane

Fundraising

The past year has seen a series of successes and new challenges in fundraising, and across the whole School. A new strategic plan for 2007 – 2012 outlines organisational aims and objectives, increasing demands for donations and grant income. During 2006/2007 £1,262,700 has been received in donations to support learning, research and the expansion of LSTM.

Centre for Tropical and Infectious Diseases (CTID)

The construction of the new centre is nearing completion, and our attention is now focussed upon completing the fit-out. A fundraising appeal continues to raise funds for new equipment and the fit-out of laboratory space. CTID will be at the forefront of the development of new treatments for diseases such as malaria. More information on the CTID can be found on page 24



CTID July 2007

Student Funding

A total of £38,585 was received from donors including the Oglesby Charitable Trust, the Gunter Charitable Trust, World Friendship, The Methodist Church and several anonymous donors. Funding of this kind provides additional scholarships and hardship grants to students. An appeal is now underway to establish a Wilberforce Memorial Scholarship for refugee students. LSTM is working with the Windle Trust to provide this tribute to the anti-slavery movement.



Refurbishment

In preparation for many staff and laboratories moving over to CTID we are progressing with plans for the refurbishment of the main School buildings. Many of the old laboratories will be converted into teaching and office spaces to provide state-of-the-art facilities for students and staff



One of several laboratories in need of refurbishment.

Donald Mason Library

The fundraising office continues to support the development of the library with funding to provide multi-media resources for students and staff. A grant from the Wellcome Trust has allowed a survey of the archives currently held by LSTM to be conducted, as the first stage of an archive development programme, so that the work of our pioneers will be remembered and utilized.



Sir Ronald Ross working in his laboratory.

Alumni

Our former students occupy senior positions in health ministries and NGO's across the world. Where possible, our alumni support LSTM's mission with donations, their time as guest lecturers, and as volunteers or advisors.

If you are a former member of staff, or a former student, and would like to be kept informed of developments at the School please contact the Fundraising Office with your contact details and we will send you the new newsletter 'Tropical'.

An appeal for donations of foreign currency continues, with regular contributions coming in from far afield. Thank you to everybody who has supported this ongoing appeal.

Donations are particularly encouraged for the General Fund, which is used to fund projects that emerge without warning, and require immediate attention.

A full list of donors during this period can be found in the School's Financial Statements publication.

If you would like more information on how to support LSTM please contact: Billy Dean, Fundraising Office, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool, L3 5QA. Or alternatively you can email: william.dean@liverpool.ac.uk or phone 0151 705 3272

Thank you to all of our donors, your support is deeply appreciated.

Above - LSTM students visiting the river Mersey.

Clinical trials

“ Expansion of clinical trial activity has been identified as a major theme within the School’s research strategy... increasing our capacity to organise and sponsor such trials will be an important part of our development over the next few years ”

Since the early years of the twentieth century, staff at the Liverpool School of Tropical Medicine have been involved in the assessment of new treatments and interventions for infections. Starting with the investigation of arsenical compounds for the treatment of trypanosomiasis, many different drugs have been evaluated in clinical trials of treatment for all of the common tropical diseases. Clinical trials remain a very important activity for the School, and the portfolio of trials has increased considerably over the past five years. Currently, LSTM is responsible for 7 trials in 4 different countries with grant funding from a number of different agencies, including MRC, the Wellcome Trust, EDCTP, DfID and the Gates Foundation. Studies groups include both adults and children, and subjects range from lymphatic filariasis to malaria, TB, HIV and even to snakebite.



A nurse explaining trial medication to a participant



Expansion of clinical trial activity has been identified as a major theme within the School’s research strategy, and increasing our capacity to organise and sponsor such trials will be an important part of our development over the next few years. As new products are developed within laboratories, the capability to take such products and evaluate them in the field from first time in man (phase I) studies through to licensing (phase III) will become of increasing importance.

The past three years have been an interesting and challenging time for those involved in clinical trials. There have been considerable changes in regulatory requirements affecting clinical trial ethics, management and governance. Clinical trial directives and

initiatives such as GCP (good clinical practice) have started to outline clear requirements for both sponsors (the administering academic authority) and investigators. At the same time, there has been a considerable expansion in interest in international clinical trials and the development of clinical trial capacity in resource poor settings, at least partly driven by the need to develop the ability to undertake large scale HIV and malaria vaccine trials in the near future.

Within the School, a small group has been working to respond to these changing circumstances and exploit these opportunities. The development of the research management office (detailed elsewhere) has been partly driven by this. LSTM has developed and expanded the infrastructure to support

clinical research and is in the process of forming a clinical research support unit (CRSU). This will provide a single resource for researchers to obtain advice and support on all aspects of clinical trial management, including writing grant proposals, developing study protocols, ensuring GCP compliance, writing research ethics application forms, developing good data management facilities, statistical analysis of results and writing reports. A major part of the work will involve helping to develop local capacity to run clinical trials in resource poor settings, particularly with major overseas partners such as the MLW programme in Malawi, but also in a number of other settings around the world. The CRSU will also develop and run courses at appropriate academic levels on aspects of designing, conducting and evaluating clinical research studies, including randomised clinical trials.



Opposite - The trial clinic in a major MRC funded clinical trial in Masaka, Uganda

Right - Following up trial patients in the field



David Laloo

Pulmonary Immunology

Introduction

Pulmonary infections are the leading cause of death in children under 5 years of age world-wide, the leading infectious cause of death in adults world-wide and the leading cause of death in HIV infected adults. *Pneumococcus* is the most common bacterial infection in all age groups, with increased burdens of disease found in children, cigarette smokers, and HIV infected patients. *Mycobacterium tuberculosis* causes 8 million new cases of disease each year, with the worst incidence rates found in HIV infected patients in sub-Saharan Africa. Current vaccines against pneumonia and TB are inadequate in the most affected groups, particularly in Africa, and antibiotic resistance among African mycobacterial isolates is at an all-time high. There are, therefore, compelling reasons to study carriage and transmission of respiratory pathogens and the immunology surrounding susceptibility, pathogenesis and prevention of these infections. It is these research areas that are the focus of the Pulmonary Immunology group.

Pneumonia, pneumococcal infection and HIV

We collaborate closely with the Malawi-Liverpool-Wellcome programme of Clinical Tropical Research. For example, Kondwani Jambo has recently demonstrated that carbohydrate-binding innate immune factors (collectins) in lung fluid and serum are normal in HIV infected adults by studying samples from Malawi in the Pulmonary Immunology laboratory in the School. Also, using a similar study design, and collaboration



with the University of Indiana, we have recently demonstrated for the first time that pneumococcus-specific lung immunoglobulin is functionally impaired in HIV infected adults. These projects not only add to current knowledge regarding immune defects in the lung that occur as a result of HIV infection, but also demonstrate aspects of pulmonary immune defence that must form a component of a successful vaccination strategy.

As with several respiratory pathogens, pneumococcal infection can result in mild mucosal disease including sinus, ear and lung infections, severe bacteremic pneumonia and in the most severe infections – meningitis. We have just completed a collaborative study of the effects of steroids in adult meningitis among HIV infected adults (no benefit) and this year we have extended the study to include a detailed proteomic analysis of the CSF samples obtained in the clinical trial. These studies follow from our descriptions of pneumococcal disease in Malawi some years ago, and should lead to further intervention trials. We expect to publish data soon regarding the CSF correlates of good clinical outcome in pneumococcal meningitis in HIV infected adults, and to use these data to develop hypothesis-driven trials to improve patient survival.

Biomass fuel use and susceptibility to infection

One third of the world population burns organic material for cooking, heating and lighting on a daily basis. The resulting

smoke exposure has been convincingly associated with increased respiratory infections in children, bronchitis in women and with tuberculosis infections. The mechanism underlying this increase in infections is not well understood and is the subject of a Wellcome Trust project grant to our laboratory. Using monocyte derived macrophages from the blood transfusion service and human alveolar macrophages obtained from bronchoscopy volunteers in Liverpool, we have shown that increasing doses of carbon black are internalised by lung cells with a consequent release of inflammatory cytokines. The inflammatory cytokines released in these laboratory studies are the same as those noted in studies of humans exposed to forest fires and other pollution. The new observation in our laboratory is that it is not only high dose pollution that produces an inflammatory effect, but also very low doses studied over a longer period (24 hours or more). We now plan to extend these studies to determine the effect of laboratory particle challenge on lung cells obtained from Malawian adults exposed to both chronic low levels of pollution, and the higher levels found in cooking huts. We also plan to examine the possible anti-inflammatory effect of carbon exposure, and in particular the possibility that carbon exposure might be immunosuppressive by a mechanism of receptor down-regulation and anti-inflammatory cytokine production.

Opposite - The Pulmonary Immunology team - left to right, Katy Baple, Kondwani Jambo, Natalie Swann, Helen Tolmie, Upali Goonetilleke, Amy Knott and Steve Gordon.

Below right - A Malawian cooking pot. Exposure to smoke from cooking fires is a major risk factor for pulmonary infections.

“Cooking pots may hold clues to respiratory diseases”

Biomass fuel use and HIV

Biomass fuel use is common among HIV infected adults in Malawi. Since HIV infection and biomass fuel smoke both cause inflammation of the lung and increased susceptibility to pneumonia, it is possible that these threats to health are synergistic. That is, we suspect that the inflammation resulting from smoke exposure may increase the rate of HIV replication in the lung. We plan to test this hypothesis using lung fluid samples obtained from smoke-exposed adults in Blantyre, Malawi during 2008.

Vaccine studies

In collaboration with Dr Neil French, we have completed and published a study describing the effect of vaccination using pneumococcal conjugate vaccine on lung immunity. The results of this study indicate that pneumococcal conjugate vaccine is immunogenic in lung fluid in both HIV infected and normal adults. The observation that HIV infected adults have impaired immunoglobulin function described above, however, may mean that the vaccine is not effective. We anticipate the results of the randomised controlled trial testing the use of conjugate vaccine in HIV infected adults in October 2007.

Current pneumococcal conjugate vaccines have limited serotype coverage and are expensive to produce. We are continuing to investigate the possibility of an inhaled vaccine with studies on pneumococcal protein immunogenicity and the function of interleukin 12 as a mucosal adjuvant. An important aspect of this work will be to ensure that pneumococcal proteins presented as vaccine do not induce alveolar macrophage apoptosis and so we have developed techniques for highly sensitive detection of apoptosis in lung samples. Natalie Swann has used these

techniques this year in collaboration with the University of Leicester in an MRC-funded study of genetic susceptibility to pneumococcal infection.

Tuberculosis

We have completed a study of sequential patients suspected of tuberculosis infection in Blantyre, Malawi, and the results are being validated by Russell Dacombe. This study has shown that invasive tests such as bronchoscopy are of limited utility in gaining extra diagnoses compared to the repeated rigorous examination of expectorated sputum. In addition, this study has generated isolates that can now be tested for antibiotic resistance among Malawi mycobacterial infections.

Future plans

Next year, the Pulmonary Immunology Group plans to expand its work on inhaled vaccines, and to link the biomass exposure project to *in vitro* studies of susceptibility to infection with mycobacteria. We will also develop antigen-specific flow cytometry assays with appropriate collaborative groups to determine the pulmonary correlates of cellular immune protection against pneumococcal and mycobacterial infection.



Steve Gordon



Diabetes in Africa - North and South

Diabetes mellitus is one of the commonest chronic incurable diseases in the world. It is also associated with serious and sometimes fatal complications – including blindness, amputation, coronary thrombosis and stroke. Diabetes is rapidly increasing in prevalence throughout the world – particularly in developing countries, including the African continent. Diabetes traditionally exists in two forms in western countries – “type 1” and “type 2”. Type 1 diabetes presents in young people who develop severe symptoms and always require lifelong insulin injections. Type 2 disease occurs usually in middle age or the elderly with less dramatic symptoms, and can often be treated with tablets, though insulin may be needed later in the disease process. In western countries type 1 accounts for about 20%, and type 2 for 80% of the total diabetic population. Both types are equally associated with diabetic complications, the risk of which is increased particularly by poor blood sugar control.

Professor Geoff Gill of the School has been collaborating with colleagues in Africa to explore some interesting peculiarities of the classification and causes of diabetes in that continent. The research has centred on two sites - northern Ethiopia and rural South Africa. The Ethiopian project is at Mekelle District, in northern Ethiopia, and the collaborators are Professor Solomon Tesfaye (University of Sheffield) and Dr Atakilt Gebrekidan of Mekelle Hospital. The work has been supported by the Ethiopian Department of Health and the Association of Physicians of Great Britain. The South African project is at



Figure 1 – Diabetic patients at a clinic in Kwazulu Natal, South Africa. The majority are middle aged, overweight and female. Insulin treatment is not usually needed.

Hlabisa District – a remote rural area of Kwazulu Natal. Collaborators here are Dr Martin Dedicoat and Sister Dudu Shandu (Hlabisa), Sister Caroline Price (UK) and Professor David Wilkinson (Adelaide, Australia). This project has been supported by the Rhodes Trust and the Eleanor Rathbone Foundation.

Detailed investigation of the diabetic populations in both areas have been carried out, using either laboratory equipment brought into the areas, or transporting deep-frozen serum samples to the UK for analysis. The vast majority (96%) of patients in Hlabisa, South Africa, had type 2 diabetes characteristics. They developed their diabetes in late middle age, most were tablet-treated, and 56% were obese and 80% hypertensive (Figure 1). Obesity in the area is more common amongst women, which is reflected by 70% of diabetic patients there being female. In Mekelle, northern Ethiopia however, the situation was very different (see Table).

Here, patients developed diabetes at a younger age (often teens or twenties) and were mostly extremely thin (only 4% of the population were obese) – see Figure 2. Hypertension was rare, and many required insulin treatment. Curiously, and in contrast to South Africa, 70% of the group were male. Overall, 42% had characteristics consistent with type 1 diabetes (compared to 4% in Hlabisa). This is a remarkably high proportion, and led Professor Gill and his team to investigate whether these patients may have a new, atypical, type of diabetes.

From the serum samples transported to the UK, sophisticated tests were performed to examine immune marker of type 1 diabetes (“GAD antibodies”) and hormonal markers of endogenous insulin production (“C-peptide”). Type 1 patients would be expected to have positive GAD antibodies but negative C-peptide. However, only half of the apparent type 1 patients were GAD positive and C-



Figure 2 – Diabetic patients in Mekelle, northern Ethiopia. Most are young, male and lean; and require insulin treatment

peptide negative. This suggests that though some were true type 1, a number had an atypical form of diabetes. Their very low body weight and high proportion of males raises the possibility that their diabetes may be related to childhood malnutrition. This relationship between nutrition and diabetes was suggested many decades ago, but has remained controversial because of lack of previous direct evidence of its existence.

These studies demonstrate that these two areas of Africa – at extreme north and south of the continent – have very different types of diabetes. In South Africa, the vast majority is type 2 – strongly related to obesity and the general ravages of westernisation. Rural Ethiopia, however, has significant numbers of atypical forms of the disease not seen in Europe, probably related to malnutrition in the early years of life. It is ironic that the disease in Africa appears to be caused by over-indulgence in the south, but famine in the north.

Characteristics of diabetes in northern Ethiopia and rural South Africa

	RURAL SOUTH AFRICA	NORTHERN ETHIOPIA
Age	45– 65y	15 – 50y
Gender	70% female 30% male	30% female 70% male
Diabetes type	4% type 1 96% type 2	42% type 1 58% type 2
Obesity	56% obese	4% obese
Hypertension	80%	5%

“ Contrasting lifestyles point to link with childhood malnutrition ”

Geoff Gill



Nursing team plays important role in protecting British travellers

“School was founder member of body that provides national telephone advice line for health professionals”

The National Travel Health Network and Centre (NaTHNaC) was created in 2002 with the broad goal of “Protecting the Health of British Travellers”. Since its founding, the organisation has developed rapidly and is now recognised as an authoritative body in the discipline of travel medicine.

Liverpool School of Tropical Medicine (LSTM) was a founder member of NaTHNaC, in partnership with the London School of Hygiene and Tropical Medicine, the Health Protection Agency, Centre for Infections (Cfi), and the Hospital for Tropical Diseases, London. NaTHNaC was originally funded directly by the Department of Health, England and is now funded through the HPA. The centre is based in London but also has network offices at LSTM and Cfi within the HPA.

NaTHNaC facilitates the delivery, by health care providers in the UK, of standardised and consistent travel health advice, based on the best available evidence. In order to do this, NaTHNaC is working to the following objectives:

- To develop consistent and authoritative national guidance on health matters for health professionals advising the public travelling abroad
- To provide guidance on specific situations relating to the health of travellers
- To carry out surveillance of infectious and non-infectious hazards abroad, producing accessible regular outputs of such surveillance
- To administer yellow fever vaccination centres
- To engage the major stakeholders concerned with travel health



especially the travel industry and government bodies, to assist in sentinel surveillance and to engage in constructive dialogue towards a unified approach

- To facilitate, in collaboration with other training providers, the training of health care and other personnel in the provision of best quality travel health advice, based on such evidence as is available
- To define short-term and long-term research priorities in relation to travel medicine

The School has a long history providing health advice for international travellers. NaTHNaC's presence in the School has complemented and enhanced the in-house travel medicine service and has helped to provide the travel clinic team with the most up-to date national recommendations for vaccination and malaria chemoprophylaxis, as well as real time surveillance and disease outbreak data. School staff have also played a role in developing national standards in travel medicine.

One of the major roles undertaken by NaTHNaC is the provision of a national telephone advice line for health professionals who require advice about travellers with complex itineraries, medical histories or both. This is manned on a rotational basis by NaTHNaC

nursing staff at the LSTM and London offices and has been extremely well received. The website also provides a great deal of resources for health professionals including a unique country information and disease surveillance database, which is also available to the general public. One of the other major successes for NaTHNaC has been the development of a national regulatory system for yellow fever centres which has included the registration of sites, development of standards and education packages. This model is now being adopted by a number of other countries.

NaTHNaC's Director is Professor David Hill who is based in London together with clinical and administrative team members. NaTHNaC staff currently employed at LSTM are Dr. Lisa Ford (Clinical Advisor), Hilary Simons (Senior Nurse Advisor) and Claire Wong (Nurse Advisor). Dr. Nick Beeching is Chair of the NaTHNaC steering committee and Dr. David Laloo is a member of the committee.

Further information about NaTHNaC and resources can be found at <http://www.nathnac.org/>

Above - The NaTHNaC team, from left to right, Hilary Simons, Claire Wong & Lisa Ford.

Addressing the Balance of Burden in AIDS Research Programme Consortium (ABBA RPC)

The **ABBA RPC** work considers the existing evidence on the social, economic and institutional factors that place the livelihoods of vulnerable and neglected groups at increased threat from HIV and AIDS, and identifies which institutions and programmes are best placed to alleviate those threats.

In the first year of the ABBA RPC we, and our partners in Ghana, Kenya, Malawi, South Africa and Uganda, are engaging with governments, key policymakers, stakeholders and National AIDS Commissions to develop projects that will help them to improve their policies for the poor and vulnerable groups affected by HIV and AIDS. The synthesis of the findings from these projects, in combination with existing evidence, will fill key gaps in knowledge which need to be addressed by policymakers to improve policy and programme implementation. Involving policymakers at early stages gives the ABBA RPC a better chance of influencing the use of research findings in their policy deliberations.

Partners lead research projects and other initiatives, and are responsible for protocol development and testing of tools in years 1 and 2 of the programme and for rolling out these robust methodologies in partner countries in years 3 to 5. These projects include studies of the benefits provided by interventions such as crèches and peer education for orphans and vulnerable children; a large scale investigation of the impact of antiretroviral therapy (ART) in health related quality of life, and economic globalisation on vulnerability to HIV/AIDS. For example, the completed study under the project on Emotional Development and Quality of Life of Vulnerable Children



and Orphans has assisted Amangwe Village in KwaZulu Natal, South Africa to identify useful norms and standards for Orphans and Vulnerable Children (OVC) interventions such as crèches and play groups. The findings are being disseminated to other OVC programmes, and are shaping further development of OVC services in the local area.

Policy engagement in Kenya, with 28 organisations working with people with disability (PWDs), has resulted in better project design, as well as highlighting capacity building needs and policy gaps. A study has been initiated which seeks to:

- Quantify the burden of HIV/AIDS in PWDs
- Identify social, economic, cultural and environmental factors that reduce or increase the burden of HIV/AIDS on PWDs
- Identify institutions that aggravate or reduce the HIV threat for PWDs
- Undertake spatial mapping of HIV/AIDS services and assess their proximity to PWDs

New tools have been developed within the programme for assessing:

- The impact of HIV/AIDS on Health Systems
- Previous and current socio-economic status of both HIV+ and HIV- individuals in order to assess the interaction between poverty and HIV/AIDS

Above - HIV infections and AIDS related deaths are changing the pattern of fishing in Cape Coast, Ghana. HIV infected fishermen are often too weak to travel out to the traditional fishing grounds

- Generic and disease-specific Health Related Quality of Life tools for HIV positive adults and children
- Social mapping tools for use with vulnerable girls and young women living in the path of HIV
- Questionnaires for assessing the impact of institutions that address HIV/AIDS in people with disabilities

In some of the partner countries we have noticed a rather narrow focus in the policy debate on ART and scale-up, perhaps due to the large grants available for such services. Our partners in Ghana and Kenya shared the reports of their policy dialogue meetings with a wide range of policy makers and HIV/AIDS stakeholders which has assisted in widening the policy deliberations in both countries to consider the social context of HIV impact.

“ Projects include studies of the benefits of interventions such as creches and peer education for orphans and vulnerable children ”

Using evidence to improve health

Fantasy is often more terrifying than reality. Clinicians in the past viewed systematic reviews as Stalinist dogma that dictated what they should do. The establishment perceived evidence based medicine as a threat to their power base, which lay in the opinion of experts. But over the years this has shifted, and the reality is that systematic reviews can help make decisions and judgements better informed. And now it is really moving: in relation to developing countries, 2006-07 year saw some critical and explicit shifts in institutions towards evidence informed policy and practice.

The Effective Health Care Research Programme Consortium remains one of the major technical and strategic contributors to the Cochrane Collaboration in relation to middle and low income countries, and in addition has a sophisticated communication strategy to help ensure decisions made in the health sector are grounded in reliable evidence. The Consortium includes groups with major programmes in China, Philippines, India, South Africa and Nigeria, with more modest activities in Kazan.

The Cochrane Infectious Diseases Group produced some notable reviews this year: a review of insecticide treated bednets in pregnancy showed a reduction by almost a third in fetal loss, and was used by Hilary Benn as an announcement on Africa Malaria Day; Gawrie Galappaththy from Sri Lanka completed a review of primaquine in vivax malaria, which has already meant India and Sri Lanka have changed their treatment guidelines. Also a review of mosquito buzzers and the research summary showing they have no effect on mosquito biting behaviour by Ali Enayati and the School's Director, Professor Janet Hemingway - this was reported in the Daily Express, 104 web sites, and publications worldwide.

The first African Cochrane Contributors Meeting was held in South Africa. More



than 100 people, many of them Cochrane authors in the region, attended the meeting. The advancement of the review capacity in the region is a credit to the South African Cochrane Centre, particularly Jimmy Volmink, as well as the Consortium, and the Collaboration as a whole.

A collaboration on a systematic review of qualitative research in TB adherence has recently been published, carried out mainly by partners in South Africa, with Helen Smith in Liverpool. Helen Smith co-ordinated a study evaluating access to electronic health knowledge with collaborators in five countries in Africa, and showed that, for post-graduate doctors, institutional access was widespread but generally poor, and in two countries the professionals used cybercafés to access medical literature.

Partners in Calabar, Nigeria, led by Martin Meremikwu, are setting up and carrying out trials in malaria treatments and have also taken on a project to co-ordinate demographic data collection in three states. Martin is also working hard to update Cochrane reviews in his area, and to support the high number of Cochrane authors now established in the country.

In India, partners in Vellore obtained a prestigious Indian Medical Research Council grant to develop capacity in Cochrane reviews in India, and Prathap Tharyan has helped create a tremendous energy to prepare and use evidence for policy and practice.

Lantern night in Chongqing, China ...with left to right, Dr. Daiya Hu, Professor Paul Garner and Dr. Helen Smith, after completing their report on TB adherence

In the Philippines, Mary Ann Lansang and colleagues have taken on a portfolio of complex reviews in infectious diarrhoea, and their highly experienced team is tackling these with gusto. There are emerging joint activities with partners in Chongqing, China.

Consortium outputs from China have been extensive: a study by Qian Xu and colleagues in Shanghai promoting contraceptive use in young women working in a mobile telephone factory was published. A fascinating study from Chongqing of adherence to tuberculosis treatment has shown that actual treatment completion rates are much lower than government figures report. This report is currently with the Government.

“ A review of insecticide treated bednets in pregnancy showed a reduction by almost a third in fetal loss ”

The need to address world's neglected diseases gains international momentum



Last year's report reminded readers of the goal of the Global Alliance to Eliminate Lymphatic Filariasis (GAELF) to eliminate lymphatic filariasis by 2020, and the Centre's role in achieving that goal.

The past year has seen the Centre continue its normative role as a key member of the Global Alliance, specifically as the Secretariat and with David Molyneux as the Executive Secretary of its Executive Group. At the fifth global meeting in Fiji the Representative Contact Group (RCG), the body representing the different constituencies of GAELF, recommended a number of changes. Most important was to increase its interaction with the Executive Group and advising on the direction of future GAELF activities. The Secretariat has been working closely with the RCG towards achieving these changes.

Very exciting for the Centre over the past year is recognition by the international community, of the advantages of addressing the package of "neglected tropical diseases" (NTD), one of which being lymphatic filariasis. The publication of several innovative papers in internationally renowned journals has had an enormous positive impact by raising awareness. Jeffrey Sachs, the Director of the Earth Institute at Columbia University, the UN Millennium Project and Special Advisor to UN Secretary General since 2002 profoundly stated "For the equivalent of a few days worth of military spending, devastating illnesses of the global poor could be controlled worldwide"¹

An outcome of the raised awareness is the formation of the Global Network for Neglected Tropical Diseases (GNNTD) which aims to raise funds to improve

childhood development, school attendance and performance, pregnancy outcomes and worker productivity among the world's poorest populations. *The Centre is one of the founding members of GNNTD.*

In April the World Health Organization's Department for Neglected Tropical Diseases held its first Ad Hoc Strategic and Advisory Group for Neglected Tropical Diseases. Along with 20 other renowned authorities in various aspects of NTDs including case management, chemotherapy, epidemiology, public health and vector control David Molyneux was invited to be a member of this innovative initiative. The group identified 14 action points and five areas of research activity that will support the control of NTDs as a focus for WHO's attention

(http://www.who.int/neglected_diseases/STAG_speech/en/index.html).

Immediately following this a Global Partners Meeting on NTDs was held. Approximately 200 participants representing countries, academia, donors, the private sector and NGOs all endorsed their commitment to support the initiative.

Back in Liverpool, Dominique Kyelem successfully defended his PhD thesis based on the "Epidemiology and Control of Lymphatic Filariasis in Burkina Faso". Dominique's work was undertaken whilst he was the Programme Manager of the Burkina Faso national programme. Dominique has recently moved to Atlanta to take up the appointment of Program Manager of the Gates Foundation funded GAELF research study "Resolving the critical challenges facing LF elimination". Based with Mark Taylor's group another PhD success is Sarah Gibbons who was part funded by the Centre and GSK for her work on "Population Genetics of *Wuchereria bancrofti* and their



Above - Diagnosing filariasis using ICT tests in American Samoa

Below - School children during Mass Drug Administration in Haiti



endosymbiotic bacteria *Wolbachia*".

The Centre has been a little short staffed this year with the absence of Lisa Bluett on maternity leave after the arrival of Sam. However with support from the School's IT department, some temporary assistance and the short term appointment of Guy Barnish to design and develop country web pages, it has continued to be productive.

¹ Sachs Jeffrey D (2007) The Neglected Tropical Diseases. *Scientific American*, 48. January

CRESTHA

How storekeepers and home based carers are helping poor people to access TB diagnosis and care

CRESTHA's main activities this year have been the hosting of the Interim Secretariat of the Global STOP-TB Partnership's TB & Poverty Sub-group, the start-up of a new project called "Triage-Plus" in Sudan and Malawi, and the continuation of work on Mema Kwa Vijana 2 (MKV2) in Tanzania.

The TB & Poverty Sub-group Secretariat has worked in partnership with the Fund for Innovative New Diagnostics (FIND) in Geneva to appoint a full-time TB & Poverty Technical Officer. This new officer will be based at the FIND Offices in Geneva and will work on ensuring that new TB diagnostics can be marketed and implemented in such a way as to be truly accessible to the poor within developing countries.

The Triage-Plus project started in May 2007 with funding from LHL (The Norwegian Heart & Lung Patient Organisation). This is a 5-year, community-based, randomised controlled trial of a policy of engaging informal care providers in the provision of health services for patients with TB and HIV in Malawi and Sudan. The knowledge base for Triage-Plus was laid by the DFID-funded EQUI-TB Knowledge Programme (2001-2006) and extended by additional community-based work in Malawi funded by LHL. Through this work it became clear that poor people in peri-urban Lilongwe are preferentially consulting small, street-corner grocery stores and home-based care providers for symptoms of persistent cough suggestive of TB. Furthermore, these people (mostly daily-wage earners) often have to choose between starvation for a day and seeking formal diagnostic services, even though the public health services are provided free of charge at the point of delivery.

In order to support such patients along the pathway to TB diagnosis, the EQUI-TB Knowledge Programme (www.equibt.org.uk) worked with the REACH Trust (www.reachtrust.org) and LHL to develop the skills of store-keepers and home-based carers to identify people consulting with the more severe symptoms, and use strengthened referral networks to ensure these patients reach diagnostic services. This "triage" role of disease recognition and health communication is now being extended through the Triage-Plus project. A wider range of informal providers will be engaged and appraised for their capacity to take on a more comprehensive role by adding diagnosis and treatment to the initial triage role. For example, some grocery store keepers may be able to triage by recognising a number of key syndromes suggesting TB and HIV and go on to offer HIV testing and counselling as well as act as TB and HIV treatment supporters or observers.

This policy of informal provider engagement (Triage-Plus) will be implemented in randomly selected health centre catchment areas matched with control areas where the policy will not be followed. Primary outcome indicators include numbers of TB and HIV notifications and TB treatment success rates using standard WHO outcome categories.

Triage-Plus signals the facilitation by LSTM of a new partnership between the REACH Trust in Malawi and a similar NGO in Sudan called Epi-Lab (www.epilab.org.sd). Epi-Lab will supervise the conduct of a parallel Triage-Plus trial in Sudan from its offices in Khartoum and exchanges between the two NGO's are expected to build capacity in both.

Month	2007	2008	2009	2010
JANUARY	25	3	22	10
FEBRUARY	28	0	28	6
MARCH	22	0	33	5
APRIL	23	1	29	21
MAY	1	2	29	15
JUNE	17	1	18	7
JULY	17	1	18	12
AUGUST	18	1	19	12

MkV2 has continued to scale up an innovative adolescent sexual and reproductive health intervention from an NGO-led pilot involving 18 health facilities and 61 schools to an integrated government-led programme involving all 179 health facilities and 649 primary schools in 4 districts of Mwanza Region. An external process evaluation is underway which moves beyond documentation of activities and aims to identify and understand key issues and processes necessary for the effective large-scale implementation and successful integration of such programmes into existing government structures. The findings have already assisted in programme development and delivery. Full documentation of the results will be available in 2008.



Top - Building the knowledge base for CRESTHA's Triage-Plus Project 2: TB case detection record from the wall of a home-based care provider in Mitsiriza, Lilongwe, Malawi.

Above - Mafayo Phiri – trainee Health Economist with the REACH Trust returning from field work with a good catch from Lake Malawi, while Epi-Lab's Gada Kadoda from Sudan looks on in the background

Going A·WOL

“ Return of old enemy reinforces need for new anti parasitic drugs ”

Over the past decade there has been a paradigm shift in our understanding of the parasitic nematode worms that are responsible for diseases such as ‘river blindness’ (*Onchocerca volvulus*) and ‘elephantiasis’ (*Wuchereria bancrofti* and *Brugia malayi*). The discovery that the parasites are host to a symbiotic bacterium, *Wolbachia*, has changed our understanding of the biology of filarial nematodes, the cause of filarial disease and most importantly has provided a new way of treating filarial parasites using antibiotics.

Field trials in Tanzania, Ghana and Cameroon have now shown that the common antibiotic doxycycline is effective at treating both onchocerciasis and lymphatic filariasis leading to sterilisation of worms with long-term suppression of microfilarial loads and, most significantly, the death of adult parasites. The treatment is both safe and well tolerated and for the first time gives individual patients the means of curing their infection *and* preventing the disease caused by these parasites.

An effective treatment requires at least a 4-6 week course of antibiotics. This length of treatment, although much shorter than drug treatments required for TB or HIV, is nonetheless logistically impractical for the community-based treatment strategies currently employed against filariasis. Current control strategies in Africa, which harbours >95% of the global burden of onchocerciasis and just over a third of the cases of LF, rely on annual doses of ivermectin or ivermectin and albendazole respectively. Alarming, in some communities in Ghana, *Onchocerca volvulus* appears to be developing resistance to ivermectin, with early repopulation of skin with microfilariae. This is of particular concern for onchocerciasis as there are no safe alternatives to ivermectin available. There is therefore an urgent need for new drugs against this parasite and in particular drugs that can kill or permanently sterilise

adult worms, both to treat resistant parasite populations to avoid their spreading to other communities and to provide an alternative to ivermectin for community-based control.

Even in the face of widespread control, estimates of the numbers of people infected with onchocerciasis have increased from 18 million to 37 million due to the discovery of new areas of endemicity in Africa - many of these areas are co-endemic for *Loa loa*, which can lead to rare but serious adverse events to ivermectin in individuals with high microfilaraemia. Alternative treatments to ivermectin, which avoid this outcome, would also be of enormous value to control programmes in areas of loiasis co-endemicity.

In light of these concerns, and obstacles facing the current control of filariasis, the award of a major grant from the Bill & Melinda Gates Foundation to develop and discover a new treatment for filariasis targeting the nematode-bacterial symbiosis is especially timely. The grant will fund the A·WOL (anti-*Wolbachia*) Consortium over a five-year period with the goal of providing anti-symbiotic chemotherapy directed against *Wolbachia* compatible with mass drug administration (MDA) programmes for human filariasis; or a regime suitable for more restricted use in populations showing evidence of resistance to existing drugs.

The plan of work comprises four major objectives.

- 1) **Regime refinement:** To refine existing regimes of drugs with known activity against *Wolbachia* (e.g. doxycycline, rifampicin) in field trials on onchocerciasis and lymphatic filariasis in Ghana.
- 2) **Assay development:** To develop novel *Wolbachia* cell-line assays to screen drugs using high throughput technologies.
- 3) **Library screening:** To screen novel tetracyclines and combinations of all registered drugs using high throughput screening to identify new drugs and

combinations active against *Wolbachia*.
4) **Target discovery:** To identify targets and inhibitors of key enzymatic and metabolic pathways using genomics, and to define the ‘essential gene set’ using bioinformatics. These targets will be screened using a surrogate screening system in *E.coli* and aptamer technology to identify inhibitors of novel drug targets to incorporate into the library screen strategy.

The aim of these objectives is to provide both short-term options for treating resistant parasites and a portfolio of drugs or combinations, which can clear *Wolbachia* in a shorter time frame and form the basis of new treatments compatible with community based control strategies.

Professor Mark Taylor heads the consortium, with the scientific and administrative support of the Filariasis Research Laboratory and A·WOL management team. Other partners in the consortium include Professor Ward (LSTM), Professor Hoerauf and Professor Adjei from the Institute for Medical Microbiology, Immunology and Parasitology, University Clinic Bonn, Germany and KCCR, Ghana; Dr. Townson of The Tropical Parasitic Diseases Unit, Northwick Park, Institute for Medical Research; Professor McCall of TRS Labs, USA; Dr’s Slatko, Carlow and Kumar of New England Biolabs, USA, and industrial partners from CombinatoRx based in Singapore and Boston, USA.

Further details can be found at



www.a-wol.net

LATH

The opening of Country Offices in Nigeria and Kenya marks major milestones in 2007

LATH celebrated a major milestone in 2007 with the opening of Country Offices in both Nigeria and Kenya. This reflects the strategic importance of having a permanent presence within the East and West African Regions, thus facilitating closer linkages to Ministries of Health, donors and other key-stakeholders. The LATH Nigeria Office is based in Abuja, within the premises of Zankli Medical Centre and is managed by Dr Gafar Alawode, a recent graduate from the MTropPaed Course at the School. The Kenya Office is based in Nairobi, within the premises of Liverpool VCT, Care and Treatment, a Kenyan NGO which has a long established relationship of working with both the School and LATH. Sheila Waruhui is LATH's Kenya Country Manager.

Further to LATH's key role in the USAID Control of Neglected Tropical Diseases (NTD) Programme, LATH participated in the inaugural meeting to formally establish the *Global Network for Neglected Tropical Disease Control*, set up to advocate for support to an integrated control strategy to treat seven NTDs, safely, effectively and affordably. LATH's Managing Director, John McCullough participated with Professor David Molyneux of LSTM at the meeting which was hosted by Professor Jeff Sachs at Columbia University, New York.

LATH has continued to develop and grow, and now has 24 HQ staff, four technical specialists based in Malawi, Ghana and Mozambique and more than 50 people working for LATH under client funding, predominantly in Africa. Reflected in our growth was the recruitment of two new strategic posts to



enhance the scope of LATH's senior management team. Stephen Cooper has been recruited as Head of Programmes and Stephen Collens as Head of Business Development, both with extensive field-based and strategic experience in international health development assistance.

LATH's business development focus has concentrated on consolidating our position in Africa, whilst at the same time diversifying our client base through winning new work with US funders and developing networks and strategic alliances within Asia. To this end business development activity encompassed networking trips to Malaysia, Philippines, Pakistan and USA. Closer to home LATH hosted its annual open day for School staff and students, to promote the importance of technical assistance and provide information on opportunities for consultancy.

One of LATH's key strategies for reinforcing its technical *know-how* and

Above - LATH's Dr Paul Dielemans, Maternal and Neonatal Health Adviser, Kenya, accompanies colleagues across Lake Victoria in Nyanza Province to visit safe motherhood sites in remote locations

influencing the development agenda with donors and Ministries has been to proactively develop and promote LATH and the School's capacity to deliver high quality technical assistance in key technical areas. In 2007 LATH has focused on:

- Laboratory Systems Strengthening
- Maternal and Newborn Health
- Malaria
- Human Resources for Health.

LATH is currently providing both short-term and long-term technical assistance and programme inputs in over 20 countries worldwide. LATH continued its support to Ministries of Health in Kenya, Malawi and Mozambique in implementing the sector-wide approach to delivering



“ Projects include helping health workers to identify and manage life-threatening obstetric and neonatal complications ”

Left - The Capacity Project - Checking blood pressure, Kajiado Hospital, Kenya

health services. The first external evaluation of the Essential Health Services Programme in Kenya in July 07 recommended expansion into more districts of Nyanza Province.

LATH has maintained a strong presence in Nigeria through its major role in supporting health systems strengthening on the DFID funded Partnership for Transforming Health Systems (PATHS) Programme which has been extended to June 2008. LATH continues to provide long-term technical expertise on the USAID funded, global Capacity Project addressing the problems caused by insufficient human capacity in the health sector, and in Malawi on The Health Foundation Programme supporting the improvement of the quality of maternal and neonatal care.

In the last year LATH has been successful in winning new contracts which has helped diversify our portfolio of work and expand our client base.

In Somaliland, The Royal College of Obstetricians and Gynaecologist International Office (RCOGIO - a partnership of RCOG, LSTM and LATH) with King's College Hospital, Tropical Health and Education Trust (THET), Save the Children UK and Health Unlimited were awarded a DFID contract to support health systems strengthening, with a focus on increasing human resources for health capacity. The role of the RCOGIO is to improve the capacity of health workers to identify and manage life-threatening obstetric and neonatal complications through the delivery of

emergency obstetric care training. LATH has been contracted by the Global Alliance for Vaccines and Immunization (GAVI) to support and facilitate the process of translating the GAVI Strategy (2007-10) into a milestone plan and annual plans supported by an evaluation framework. The system ensures that all GAVI partners are able to work autonomously towards common goals. LATH was subsequently re-commissioned to support GAVI in the development of its 2008 annual work plan.

Russell Dacombe (LATH), and Dr Imelda Bates (LSTM) were contracted directly by The College of Medicine, Malawi to help develop and implement the first Malawian BSc in Medical Laboratory Technology. The course aims to provide Malawi with suitably qualified district laboratory managers. Technical support is focused on the final two years of the course when the students are primarily based in district hospital laboratories developing the skills they will require to become effective laboratory managers.



Above - Preparing a sputum smear for microscopy, Malawi

LATH is a partner on the USAID-funded Global Indoor Residual Spraying (IRS) Programme to establish a world-wide procurement mechanism to support the President's Malaria Initiative (PMI), and to implement USAID's goal of reducing the burden of malaria in Africa. This programme is supporting scale-up of indoor residual spraying (IRS) in 15 African countries. LATH is using the LSTM's pioneering models to help National Malaria Control Programmes avoid and manage insecticide resistance whilst through Dr Eve Worrall of LATH, supporting cost effectiveness analysis of IRS programmes in some of these countries.

LATH would like to acknowledge the hard work and commitment of its staff and consultants throughout the world and thank Ministries of Health and their collaborating partners for the opportunities they provide us to make a contribution to improving the lives of disadvantaged people in developing countries.



email info@lath.com

Awards for students on the TALE programme

February 2007 saw a successful outcome for students taking part in the Teaching and Learning Enhancement programme (TALE) when Robin Broadhead, principal of the College of Medicine, Malawi, presented certificates to 7 successful participants from the initiative.

The Gates Malaria Partnership GMP officially came to an end in June 2006. However, additional support, both financial and human resources was offered to the 4 GMP training and research centres, for the following 12 month period. As part of this additional support the TALE programme, a major programme in teaching and learning that aimed to enhance the teaching and training skills of health promotion staff working in training centres in sub-Saharan Africa, was funded.

LSTM facilitated the TALE programme by collaborating with the University of Liverpool's Centre for Lifelong Learning in order to modify and adapt the University's Certificate in Professional Studies in Learning and Teaching towards adult education in sub-Saharan Africa. The course was adapted specifically for GMP to suit the needs of 10 tutors from Ghana, Gambia, Tanzania and Malawi. It was designed to build upon existing educational strengths by addressing gaps with the design, planning, delivery and teaching and learning resources. Building on the tutors' current teaching and learning experiences through the introduction of teaching and learning theories and principles, the aim throughout has been to improve the quality of teaching, learning and training and establish robust and internationally credible assessment, monitoring and evaluation processes for all activities.



There are flagship programmes that encourage a learner-centred focus. However, it is the norm in sub-Saharan Africa to place learners in a passive role. At the start of the programme initial teaching observations revealed that teaching sessions consisted mainly of didactic, lecture based training delivered around PowerPoint presentations. Learners were expected to sit, listen and absorb the information presented to them by the trainers without questioning or being given the opportunity for discussion. Assessment was mainly multiple choice questions that tested memory pre- and post- each session. The evaluation procedure failed to reflect the quality of teaching, there were no learning outcomes, and course objectives were used as content lists for lesson plans.

There is increasing evidence that using a skills based approach to health education is more effective than teaching knowledge alone, especially in areas such as health and lifestyle where individual behavior, social and peer pressure, cultural beliefs and practices may all contribute to problems. Therefore as an exemplar, the TALE programme was delivered using a skills based, blended learning technique that involved bringing the students together, on three occasions in the 12-month duration of the programme, for intensive workshops. These workshops used a

learner focused, active pedagogy to promote the development of critical thinking and problem-solving skills. Such techniques, although new to the course participants, were quickly recognised as positive learning experiences. Mid-term observations demonstrated that newly developed skills were already being tested in practice. It is hoped that the final teaching observations, which are due to take place shortly, will demonstrate further changes in the teaching practices of the tutors and that they will continue the transition towards a more learner focused, skills based approach.

The long term vision is to provide a lasting contribution to each participant through the teaching qualifications gained and raise the profile of the centres in order to promote 'best practice' in their training activities and assist with their mission to become sustainable 'centres of excellence' for health related training programmes post GMP.

Congratulations to those who successfully completed the course.

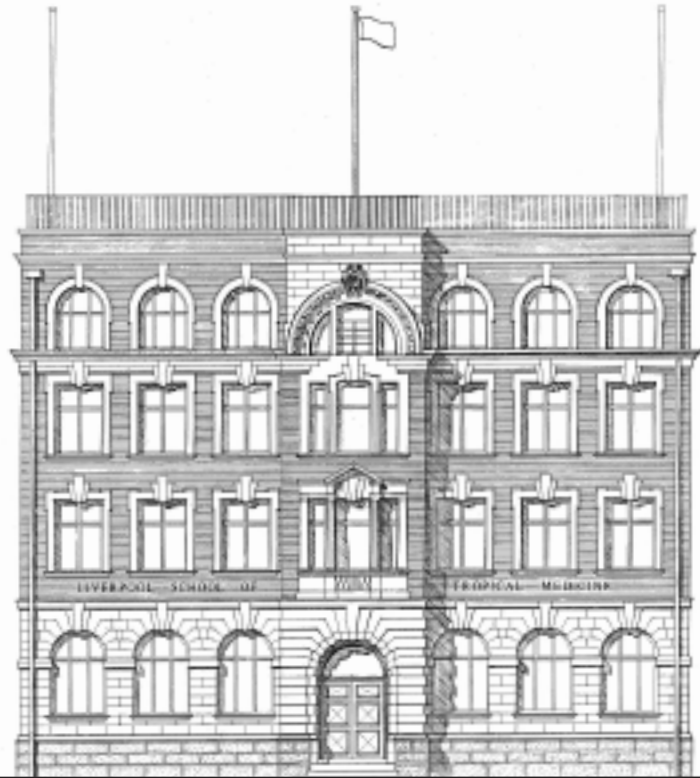
Above - Professor Robin Broadhead presents Kwabena Opoku-Mensah, a student from Ghana with his TALE certificate. TALE facilitators Ian Willis and Hazel Howden-Leach look on.

New team's dual role protects trial participants and keep staff aware of funding opportunities

Research organisations operating in an international arena, face an increasing level of statutory regulations and contractual obligations which require significant management and support. Staff within the School have always operated to the highest standards of research practice, but the need to demonstrate compliance with national and international guidelines in both clinical and non-clinical research led the School to appointing Sian Roberts as Head of Research Management. Sian has recently been joined by an assistant, Vicky Cowley and together they are developing a Research Management Office.

The responsibilities are varied, and continue to evolve. This first year has been spent in drafting policies and procedures governing the conduct of research, drawing up procedures for clinical trial management and monitoring and drafting research agreements and contracts.

The School acts as a sponsor for clinical trials and studies which are run overseas. This entails considerable responsibility in ensuring that all members of the public who participate in such studies have given their consent, are protected against harm and that they have received appropriate and adequate information about the research study. The School's Research Ethics Committee is responsible for ensuring that these responsibilities have been met and the Research Management Office then has the role of monitoring the progress of these projects. The emphasis in carrying out such studies is on building the skills in the workforce based in the country, rather than managing operations from the



UK. The challenge is therefore to provide clear and useful systems and procedures which are sensitive to local needs and compliant with international regulatory guidelines.

Another strand to the role is that of research funding information or research intelligence. Research staff need to have information on funding opportunities and to be kept up to date on developments within funding bodies. Whilst much of Sian's time in this first year has been spent on operational matters and laying the foundations for a research management structure, her focus is now moving to providing staff with information on funding opportunities via the School's intranet and via dissemination within the Research group structure.

The research management structure within the School is still in its infancy and will be shaped and formed by the requirements of research staff and the projects they are involved in. It is an exciting and challenging time for the School as a whole and particularly for Sian and Vicky whose roles will continue to develop to answer the needs of the staff within the School and those who are our partners in research.

“ The emphasis is on building skills in the workforce based in the country rather than managing operations from the UK ”

Library & Computer Services

During a year when the new Centre for Tropical & Infectious Diseases (CTID) has been taking spectacular shape in front of us, the Library and Computing Services teams have been facing up to dealing with a number of new challenges in their day-to-day operations.

Donald Mason Library

Although refurbished a mere 3 years ago, in common with most libraries, the Donald Mason Library staff have been tackling the problem posed by its growth. Summer 2007 provided an opportunity to carry out some reorganisation; extending the capacity for more journals by about 3 years. This meant that space was provided for important new acquisitions, and some of the older holdings were reviewed.

The “quieter” summer months also provided an opportunity to introduce a new layout and furniture to the main area, providing increased options with low seating for browsing current copies of journals and a meeting table for users to share information in an informal setting. Courtesy of Wellcome Trust funding, there has also been an archives survey carried out which has sought to identify which of the current collection might usefully form the basis of a valuable archive for the future.

A regular activity in which all library staff participate; both to groups or on a one-to-one basis; is helping new students find their way around and gain access to the resources that support their studies at the School. The Library staff must develop a range of skills in order to respond to the needs of students to learn I.T. skills; new software packages and how to gain access to the electronic and hard copy information services they need.



Tropical Medicine Computer Services

Computer Services staff faced a busy year. In addition to the routine IT activities needed to support the administrative staff and student users, IT demands have emanated from new grant funded projects. Two staff joined the team during the year bringing new skills which has helped extend the range of services we can support. Apart from the skills, the projects being hosted at the School all have their own demands, for example, requiring document sharing and collaboration between consortium members who may be located anywhere in the world. The Computer Services team worked with the IVCC to implement Open Text Corporation’s document management system “Livelihood” for such collaboration. This enables members of the project to share information through web-based software, and to be reassured that controls are in place to manage those documents and provide adequate levels of security.



The team has also been instrumental in developing the School’s web site which was launched in early 2007. Since the School now has a Web Editor in post it is in a position to develop and maintain the web site as well as to design other web sites for some of the grant-funded projects associated with the School including the IVCC: <http://www.ivcc.com/>. In addition, during the year, a small team of Administrative staff carried out a review of the LSTM staff intranet. The new design attempts to capture more operational information for staff to access in one location.

The teams are well placed to look forward to the new challenges which will emerge when the CTID is finally finished and internal relocations take place as further development within the School emerge in 2008 and beyond.

Archive photographs

Top - The Dagnall Laboratory. Please note students in suits with Professor Bob Howells in Lab coat.

Left - The late Joe Brady, Head of Medical Illustration, demonstrates a new microscope to students

Opposite - The New build?!! - Look again! The Maegraith Building under construction c.1981.



Centre for Tropical and Infectious Diseases building nears completion

The new £23,500,000 Centre for Tropical and Infectious Diseases is on programme for completion in December 2007. The building will provide the School with an additional 7500m² of high quality laboratory research space.



The scheme started on site in February 2006 with the appointment of the main contractor, Shepherd Construction Ltd. One of the features of the building design is the use of natural daylight. There have been significant efforts to ensure that daylight penetrates into the heart of the building by using internal glass walls, assuring that the laboratory users have a good quality naturally lit environment.



The external elevations are distinguished by the use of horizontal aluminium glazing fins and vertical pillars of Italian limestone. The limestone finishes are carried through to the inside in the spacious double height reception area by using limestone on the feature stairs and the reception floor.

The building had a traditional topping out ceremony with a speech from Lord Sainsbury in March 2007. This milestone celebrated the completion of the upper section of the structural frame.

This project has not been without some challenges, one of which was the construction of the foundations. Following numerous site investigations the ground works commenced, and then the contractor uncovered an 18m deep, 4m diameter ventilation shaft leading from a disused rail tunnel. The contractor had to build a supporting raft of concrete over the shaft to enable the structural frame to be constructed.

The design of the link bridge joining the new CTID building with the existing School building has been similarly challenging. The design team had to provide a structure which fulfilled its function, but did not detract from the appearance of either the existing School or the new CTID building. To satisfy this difficult brief the design team opted for a contemporary design along with extensive landscaping and replacement of mature London Plane trees. This design ensures LSTM staff can move freely between the buildings and encourages staff interaction which is crucial to the School's activities.

The building work is continuing on programme and is on target to complete within the £23.5 million budget.



The third floor fit out is due to start early next year and will be ready for occupation in November 2008.

The next phase of the project is to ensure a smooth move into the new facility. This is planned to start in



February 2008 and will be phased over a three week period. The office staff will move in the first stages, followed by the ground, first and second floor occupants. The move will necessitate all staff being trained on the specific building requirements before the building can become fully operational. This training will commence in late December 2007.

Left above - New laboratory space under construction

Left below - The old ventilation shaft.

Above top - View of link bridge from Pembroke Place.

Above - View from Anson Street.

School leads new initiative to improve public health in Syria

LSTM is leading an exciting major new initiative in academic institutional development and capacity building sponsored by the EU in Syria. Dr Amir Hassan and colleagues are working to establish and help run the Centre for Strategic Health Studies (CSHS) constituted by three institutes: the Institute of Health Systems Management (IHSM), the Institute of Public Health (IPH) and the Institute of Health Economics (IHE).

The goal of this initiative is to develop the CSHS into a national, and in the long term regional, centre of excellence through partnership with LSTM, its partners and associates. The main activity areas of the CSHS and its Institutes will be: (1) Education and Training, (2) Research and (3) Technical Assistance.

To fulfil its immediate priority objective of contributing to improving health and health care in Syria, the initiative proposes to establish the CSHS with the mission of providing excellence in training courses, research and technical assistance in the core areas of work of the Health Sector Modernisation Programme (HSMP) of the Ministry of Health. These core areas are public health, health systems management/administration, hospital management, health economics, health planning and financing and health information technology. By targeting improvement in these areas the CSHS will help the HSMP address the main problems facing the health sector. These include low health status of the population, low utilisation of health services, inaccessibility to disadvantaged groups, inadequate financial and management processes and systems, and a lack of quality assurance mechanisms.

CSHS training and research will aim to be relevant to the demographic, socio-economic and epidemiological situation of Syria, responding to the needs of the

population, informed by regional and international experience and with the highest quality standards.

In summary the expected outcomes of this initiative are:

- CSHS with functional structures and management mechanisms with state of art training and information equipment.
- Staff trained in: Teaching methods, management and administration, Research methods, Technical assistance.
- Postgraduate internationally recognised courses (Masters) on the main areas of: Health Systems and Hospital management, Public Health and Health Economics.
- Initiating advanced postgraduate internationally recognised Doctorate and PhD degrees.
- High quality research on the main issues affecting the health sector in Syria, and on the main health problems of the population, disseminated locally, nationally and internationally through press, meetings, conferences and publications in peer-reviewed journals.
- The development of technical assistance, business oriented activities that will be based on the expertise of the CSHS and that will assist health sector institutions within Syria and the Region.
- The development of an institutional network to create synergies with health and academic institutions within the country and internationally, assisting in continuous medical education, e-learning, sharing of experiences and the establishment of strategic alliances.



CSHS staff attending a training session.

- A growing and recognised expertise that will assist policy making within the Ministry of Health, translating research findings into policies and practice.
- A progressive transfer of technology, skills and capacity from international consultants involved in the programme, towards the Syrian staff.
- A sustainability plan based on the capacity of the CSHS to generate funds for training and research, together with a growing output of its technical assistance activities.

The initiative is conceived and approached as an institutional partnership. It aims to transfer not only the technical know-how, as is customary in technical assistance projects, but also to share and transfer institutional work-environment, settings, structures, work practices and traditions, adapting them to local conditions under which the CSHS will be working i.e. local application of international best practice.

Because of the highly specialised and academic nature of developing an institutional building approach, it was necessary to select highly specialised experts who will continue working together with their national counterparts, undertaking the sustained incremental capacity building of the CSHS from inception through to implementation and consolidation.

Introducing the LSTM Business Office

This year we welcomed Dr. Phil Gould as the school's first Business Officer. The role of the Business Office is to manage the commercialisation of a number of the School's activities, and to support its mission of furthering the development of science, products and health care delivery to the tropics and other parts of the developing world.

To start the process, the School formed a new trading subsidiary: Liverpool International Health Ventures Ltd as its trading 'umbrella', with two new 'spin out' companies: a travel health company called Well Travelled Clinics Ltd, developed from the existing travel clinic, and Liverpool International Health IP Ltd designed to manage the School's growing intellectual property base as part of the Ventures Company.

Introducing Well Travelled Clinics Ltd

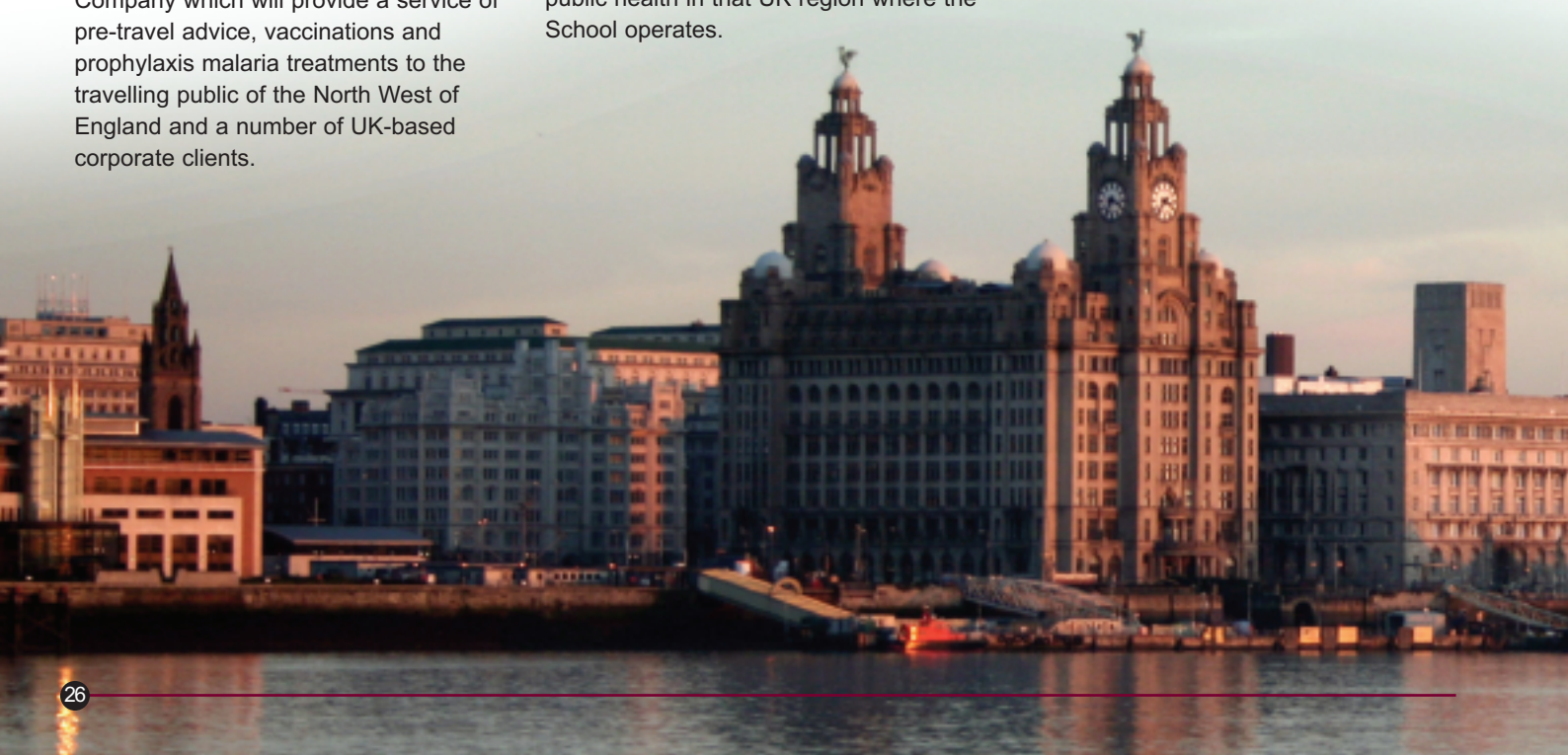
Much of the initial focus has been on starting up the Well Travelled Clinics Company which will provide a service of pre-travel advice, vaccinations and prophylaxis malaria treatments to the travelling public of the North West of England and a number of UK-based corporate clients.

Importantly, the new business will build on the unique resources of the Liverpool School of Tropical Medicine, which has a strong 'brand' and tradition of supporting public health in the Liverpool area. The existing Travel Clinic, which has been run by the School for a number of years, has now been integrated into the new business. Historically this clinic has struggled to meet demand for its services, and as a new company it will gain dedicated management resource and investment to expand the service, and better meet that demand. We know, not just from the size of the queues at our existing Clinic, that there is a sizeable demand for our travel health service. The North West of England contains approximately 12% of the UK population, from which approximately 500,000 each year travel to tropical locations for both business and pleasure. Currently, only about 2-3% of these travellers use our Travel Clinic. There is, therefore, a significant opportunity for the School to expand its business and provide an increasing contribution to public health in that UK region where the School operates.



Dr. Phil Gould

To lead this business opportunity we are delighted to welcome Philippa Tubb as the Managing Director. Philippa's team will be responsible for driving the business forward by providing a high quality, volume, client focussed service for pre-travel advice and preventative treatment services to overseas travellers. To aid the process, Philippa plans to expand our nursing and clinic support staff, implement new management systems, develop web-based support to our travel information and build the retail side of our service. In the long term, we intend to develop the corporate side of the Clinic, supporting occupational health programmes for North West companies that send their staff to the tropics.





Lead Nurse Narelle Gray advises traveller on health precautions while abroad.

Initially the main 'hub' of the Business will be in the existing Travel Clinic facilities at the School in Liverpool city centre, and we are already recruiting staff and extending the opening hours to evenings and weekends to better meet demand. It is anticipated that the present clinic will move to more suitable, expanded facilities in or near the School within the first year of operation, and then start a series of satellite clinics in the North West region over the next few years, to better serve our immediate region. At the same time the Travel Clinic in the School will be used to continue to support the National Health Service post-travel referral Clinic run by the School.

It is intended that the majority of the surplus income generated by the new Clinic will be returned to the School. A limited amount will be retained to allow further investment in the clinic and to support its expansion, as well as to fund new marketing, sales and health information initiatives.

Liverpool International Health Intellectual Property Ltd

The School's success in research will, in part, be related to the quality of the intellectual property (patents) and the protection and use of that property. Technology transfer through patent licensing is now pursued in the School, and our first patent was filed this year. This patent will now be held by our new IP company, Liverpool International Health IP Ltd.

Management of the School's IP, through the new company, will support the expansion of its research portfolio, and allow it to undertake larger consortium-based projects where commercial partners require stringent management of the IP. In addition, the School now has the opportunity to generate royalties and, more importantly, develop long term partnerships for further research with major licensee companies.

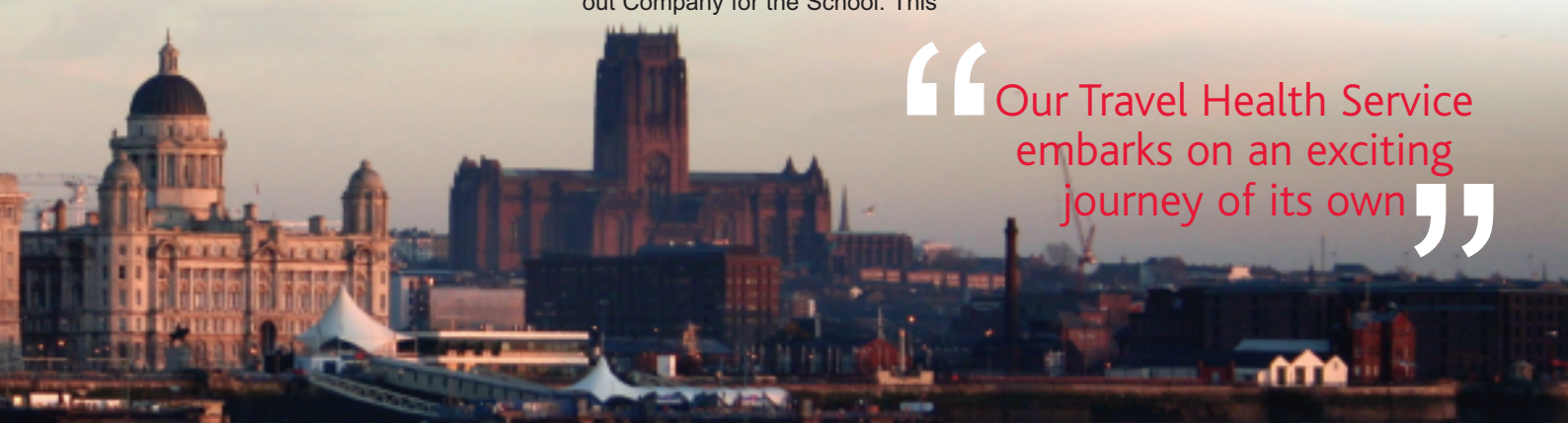
Looking Forward

The Business Office is now preparing for two new activities. The first is a new spin-out Company for the School. This

Company will work alongside the School's existing subsidiary, Liverpool Associates in Tropical Health (LATH) Ltd and will be focused on international professional development courses run 'in country', as well as in Liverpool. These courses will be aimed at building local skills and capacity, supported by a quality assurance system endorsed by the School. Formation of the Company and recruitment of its business head should begin early in 2008.

Secondly, the office is now backing our growing base of consortium R&D projects which involve both academic and commercial partners. A good example of this is the new anti-Wolbachia Consortium (A-WOL) where we have commercial partners working with us on drug targets, high throughput screening and compound screening libraries. All these relationships have involved considerations of intellectual property, definition of contractual obligations, and an understanding of how we move forward with the charitable objectives of our project, thus ensuring global access of our research findings.

“Our Travel Health Service embarks on an exciting journey of its own”



New unit will build on School's tradition in external teaching by developing bespoke programmes for developing countries

Implementation of the New Modular Framework for MSc Programmes.

LSTM's MSc programmes are now fully aligned. In 2007/08 we are offering nine MSc programmes with a possible choice of 50 modules. The Masters in Community Health has been renamed 'MSc in International Public Health' and the Masters in Tropical Medicine has become 'MSc in Tropical and Infectious Diseases'. A major innovation shared by all of our MSc programmes is the Research Skills and Project Design (RSPD) module, the backbone of LSTM's new modular framework. RSPD guides and supports our students on their journey from conception to implementation of their research project. The RSPD module has been coupled with another new, non-credit bearing module 'Key Skills, Professional Development Planning and Review'. This module is designed to enhance the student's learning experience by integrating all the modules in a chosen MSc programme and providing academic, professional, peer and personal support throughout their studies. This module is also promoting the use of IT learning resources such as VITAL (Virtual Interactive Teaching at Liverpool) which provides a platform for tutors to present learning materials, communicate with students, track student activity, and manage assignments and assessments online through the Internet. VITAL also includes 'blog' and 'discussion room' features.

In 2006/07 307 students attended our postgraduate taught programmes, of these 166 attended the DTM&H courses, a record number. About 55% of doctors who attended the DTM&H were from the UK and about one-third of these planned to work with medical non-Government Organisation (NGOs), for example

Médecins San Frontière (MSF), following the course. In contrast, over 70% of students attending other taught programmes were from outside the UK. In addition, 70% of our 101 research students were international students. In total 62 different nationalities were represented in the School in 2006/07.

Extending the Reach of LSTM's Education and Training Programmes

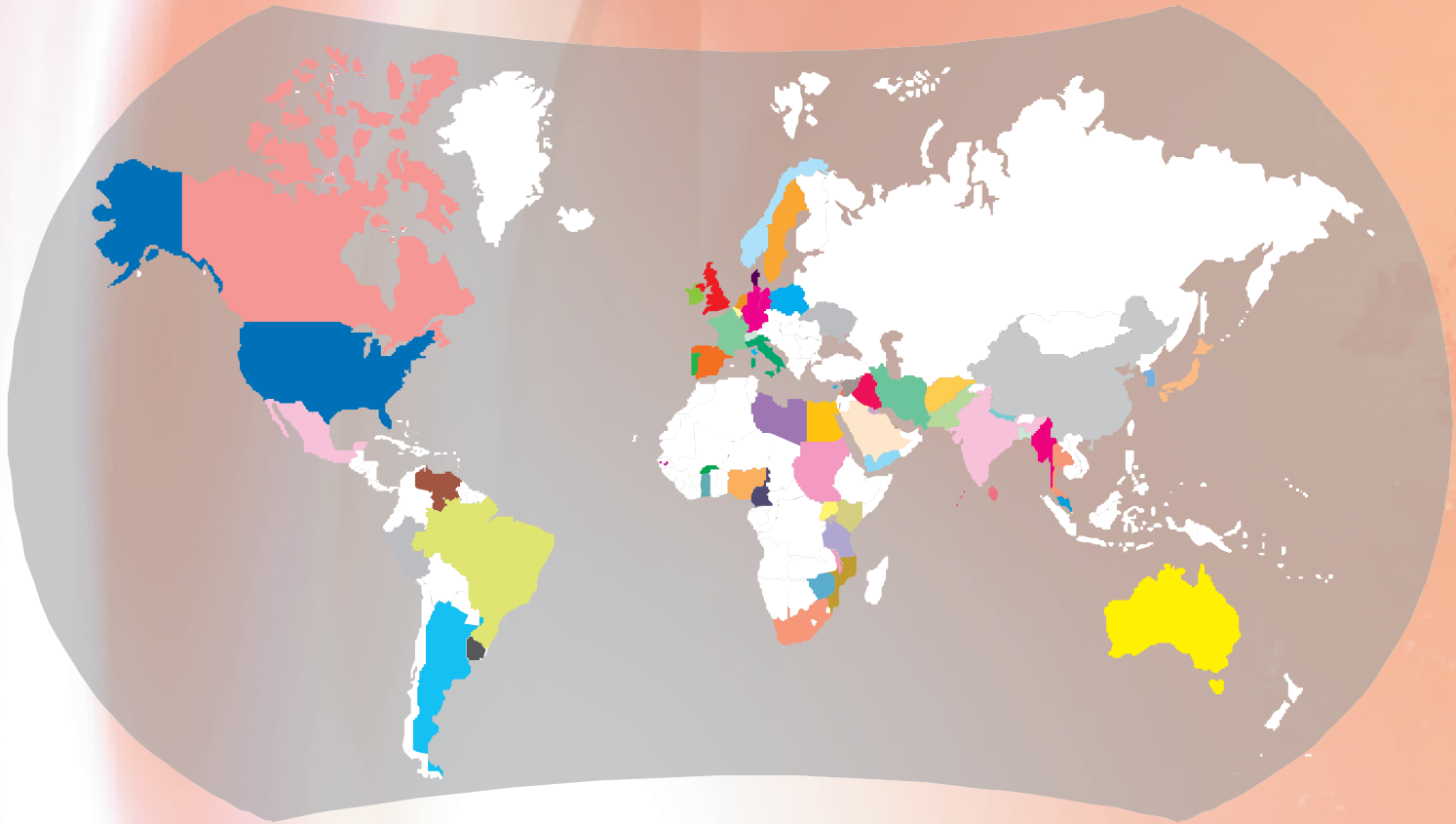
The School's collaboration with King Saud bin Abdulaziz University for Health Sciences, in the Kingdom of Saudi Arabia to help establish and run a postgraduate School of Public Health is now in the second year. There has also been considerable progress with the establishment of the Centre for Strategic Health Studies (CSHS) in Syria. In March 2007, LSTM hosted a one week study tour for academic and administrative staff from the four Syrian partner institutes. The aim of this study tour was to improve management of higher education institutions in CSHS Syria, by drawing from international experience – specifically the British University System – with regard to the following major issues: planning; finance management; change management; curriculum, faculty and staff development; modern education methods, student evaluation systems and teaching and learning assessment; life long learning and virtual learning environments; research governance and management as well as issues of quality assessment and assurance.

External teaching has been an important part of the School's activities for decades. Over the next 12 months LSTM will be creating a new external teaching unit that will consolidate existing external teaching links and develop new partnerships that will enable the School to provide bespoke education and

training programmes meeting specific needs in developing countries. This development will also see the establishment of a Quality Assurance unit that will ensure that all of our teaching programmes meet with international standards.

“ Research Skills and Project Design (RSPD) module guides and supports our students on their journey from conception to implementation of their research programme ”

Student Numbers



Argentina	1	Italy	10	Singapore	1
Afghanistan	2	Japan	6	South Africa	5
Australia	4	Kenya	6	South Korea	1
Bahrain	1	Kuwait	2	Spain	5
Bangladesh	4	Lebanon	1	Sri Lanka	4
Belgium	2	Libya	9	Sudan	7
Brazil	1	Malawi	15	Sweden	1
Burkina Faso	1	Malaysia	5	Switzerland	4
Cameroon	2	Maldives	1	Syria	2
Canada	7	Mexico	2	Tanzania	5
China	7	Mozambique	1	Thailand	6
Cyprus	1	Myanmar	4	Uganda	2
Denmark	1	Nepal	1	UK	140
Egypt	1	Netherlands	2	UK/Spain	1
France	6	Nigeria	24	Uruguay	1
Gambia	3	Norway	6	USA	7
Germany	10	Pakistan	5	Venezuela	1
Ghana	9	Palestine	1	Yemen	10
India	11	Peru	1	Zimbabwe	1
Iran	1	Poland	1		
Iraq	1	Portugal	3		
Ireland	7	Saudi Arabia	4		

Research Grants and Contracts

Professor B Brabin

University of Amsterdam (supplement)
'The Tropical Paediatric Programme' **£18,550**

Professor A G Craig

The Wellcome Trust
'The role of von Willebrand Factor (VWF) on malaria pathogenesis' **£307,716**

Bill and Melinda Gates Foundation
'Re-entry grant, Dr H Phiri': "Is the ability of *Plasmodium falciparum* patient isolates to bind directly related to their ability to cause malaria disease?" **£84,663**

The Wellcome Trust
'Research Training Fellowship, Dr J Montgomery': "Functional investigation of *Plasmodium falciparum* var genes expressed at high levels in the tissue of Malawian paediatric malaria patients" **£546,859**

The Wellcome Trust (supplement)
'Parasite-host interactions in malaria pathogenesis & transmissions' **£3,184**

Dr L Cuevas

Thrasher Research Fund
'Towards new diagnostic approaches for active & latent TB infections using IFN' **£218,395**

Dr M Donnelly

The Royal Society
Travel Award "Identifying barriers to gene flow in the malaria vector *Anopheles gambiae*" **£4,782**

Professor P Garner

European & Developing Countries Clinical Trials Partnership (EDCTP)
'Sub-contract between South African Cochrane Centre and Cochrane Infectious Diseases Group for work related to the ATM Registry' **£43,823**

European & Developing Countries Clinical Trials Partnership (EDCTP)
'Evaluation of 4 artemisinin-based combinations for treating uncomplicated malaria in African Children' **£16,172**

World Health Organization (supplement)
'Development and course design for the Health Policy Support project knowledge management related evidence based approach training workshop' **£6,668**

World Health Organization (supplement)
'to do a short systematic review of observational studies in developing country community settings of aetiology of persistent diarrhoea in children' **£5,136**

World Health Organization (supplement)
'to do a scoping study and systematic review of RCTs for treating children with persistent diarrhoea in developing countries' **£2,568**

Dr S Gordon

American Thoracic Society (supplement)
'Promoting the development of the Pan African Thoracic Society' **£5,140**

The Nuffield Foundation
'Pan African Thoracic Society research training (PATS-MECOR)' **£250,000**

Dr A Hassan

European Commission
'Technical Assistance to the Centre of Strategic Health Studies, Syria' **£3,571,400**

Professor J Hemingway

The Wellcome Trust
'Open access publishing' **£10,000**

The Wellcome Trust
'Pilot survey of medical history archives at Liverpool School of Tropical Medicine' **£11,350**

Medical Research Council (supplement)
'Molecular approaches to the control of insect vector borne disease' **£3,492**

The Wellcome Trust (supplement)
'A full genome microarray resource for *Anopheles gambiae* and *Aedes aegypti*' **£1,196**

The Wellcome Trust (supplement)
'A full genome microarray resource for *Anopheles gambiae* and *Aedes aegypti*' **£704**

Bill and Melinda Gates Foundation (supplement)
LSHTM/PhD Studentships **£12,723**

Bill and Melinda Gates Foundation (supplement)
LSHTM/PhD Studentships **£1,750**

Dr J Hodgkinson

'Development of a diagnostic immunassay for larval cyathostomiasis' **£96,730**

Dr J Kryzwiniski

World Health Organization
'Identification of sex determination genes in mosquitoes' **£13,750**

Dr D Lalloo

World Health Organization
'Making epidemiological data that is currently available on snake bites more scientifically robust in order to raise awareness of snake bites as an important global public health problem' **£3,048**

Medical Research Council
'Primary prevention of invasive cryptococcal disease using fluconazole prophylaxis in HIV infected Ugandans' (extension to current grant) **£580,113**

Meningitis Research Foundation (supplement)
'Randomised trial of glycerol adjuvant therapy in adult bacterial meningitis in Malawi' **£42,210**

Professor M Lehane

Bill and Melinda Gates Foundation
'Vector based control of Human African Trypanosomiasis using bait technology allied to a better understanding of vector population structures' **£2,174,588**

Professor D Molyneux

Izumi Foundation
'Year Five Mass Drug Administration (MDA) in Kenya, Madagascar and Tanzania' **£384,300**

GlaxoSmithKline (supplement)
'Lymphatic filariasis programme' **£50,000**

Bill and Melinda Gates Foundation (supplement)
'Lymphatic filariasis elimination programme' **£140,214**

Professor M Molyneux

The Wellcome Trust (supplement)
Malawi-Liverpool-Wellcome Trust Clinical Research Programme (MLW): A Tropical Medicine Research Platform - training **£560**

The Wellcome Trust (supplement)
Malawi - Liverpool - Wellcome Trust Clinical Research Programme (MLW): a tropical medicine research platform (Core) **£35,264**

The Wellcome Trust (supplement)
Malawi - Liverpool - Wellcome Trust Clinical Research Programme (MLW): a tropical medicine research platform (Core) **£13,230**

The Wellcome Trust (supplement) Malawi - Liverpool - Wellcome Trust Clinical Research Programme (MLW): a tropical medicine research platform (Core) £40,380	Professor M Taylor Bill and Melinda Gates Foundation 'Anti-symbiotic chemotherapy directed against <i>Wolbachia</i> bacterial endosymbionts for the control and treatment of human filariasis' £11,163,461	GlaxoSmithKline (supplement) 'Pharmacokinetics of CDA' £53,828
The Wellcome Trust (supplement) Malawi - Liverpool - Wellcome Trust Clinical Research Programme (MLW): a tropical medicine research platform (Core) £88,070	Dr F ter Kuile Bill and Melinda Gates Foundation (supplement) 'Start-up Activities of Malaria in Pregnancy Working Group' £82,623	SHARED AWARDS
The Wellcome Trust (supplement) 'Malarial Disease in Children' £15,955	Dr DJ Terlouw Drugs for Neglected Diseases Initiative 'Determination of a safe, effective, user- friendly age-based dose regimens for the new fixed dose combination of As-MQ for use in South America based on Brazil data and data from South East Asia' £19,699	Professor A G Craig The Wellcome Trust "Research Training Fellowship, Dr S Wassmer": "Ex vivo combined co-cultures of host cells, plasma and parasites isolated from patients: a new approach to cerebral malaria pathogenesis" <i>Shared with Professor P Winstanley, University of Liverpool</i> £275,473
The Wellcome Trust (supplement) 'Malarial Disease in Children' £16,700	Dr S Theobald Institute of Development Studies (supplement) 'Research Programme Consortium on Realising Rights: improving sexual and reproductive health for poor and vulnerable populations' £11,846	Dr D Haran Department for International Development 'Addressing the balance of the burden of AIDS' <i>Shared with Dr D Laloo, Dr S Theobold and Dr A Medina-Lara</i> £3,750,000
The Wellcome Trust (supplement) 'Malarial Disease in Children' £15,200	Professor A Trees European Commission 'Sustainable control of onchocerciasis today and tomorrow (SCOOT)' £368,236	Professor M Lehane European Commission 'Tsetse flies and the control of African Sleeping Sickness (TFCASS)' <i>Shared with Dr M Donnelly</i> £1,686,113
Dr N van den Broek Royal College of Obstetricians and Gynaecologists 'Evaluation of Implementation of EOC Skills' £35,000	Dr Y Wang Health Protection Agency 'Access to tuberculosis diagnosis and care for new arrivals in Merseyside and Cheshire' £15,000	Professor S A Ward The Wellcome Trust 'Liverpool-Oxford Tropical Link (LOTLink) in Clinical Pharmacology RENEWAL' <i>Shared with Professor D Back, Professor P Winstanley and Dr S Khoo, University of Liverpool</i> £281,658
World Health Organization 'Evaluation of Implementation of EOC skills' £7,249	Professor S Ward Bill and Melinda Gates Foundation 'Anti-symbiotic chemotherapy directed against <i>Wolbachia</i> bacterial endosymbionts for the control and treatment of human filariasis – Activity 3, assay development' £532,445	
Department for International Development 'Health system strengthening in the Somali Republic through phased interventions with an initial focus on Somaliland' £2,291,504	GlaxoSmithKline 'PCR amplification of three microsatellite markers: NSP-1, MSP-2 and GLURP in blood spot samples collected from patients participating in Phase III CDA studies' £54,867	
Dr B S Squire World Health Organization 'TB Poverty Secretariat' £62,500		
Norwegian Association of Heart and Lung Patients (LHL) 'Triage Plus for TB-HIV: improving community-based provision for TB and HIV in Africa' £29,705		
Norwegian Association of Heart and Lung Patients (LHL) (supplement) 'Linking Civil Society and TB Care (LCS)' £16,042		
Norwegian Association of Heart and Lung Patients (LHL) (supplement) 'Linking Civil Society and TB Care (LCS)' £48,178		
Dr S Tang China Medical Board 'Support for writing workshop aimed to assist Chinese and Vietnamese researchers' £7,273		

Student Profiles

Working as a unit or location manager for big screen films might not at first seem to be the sort of background you would expect for someone embarking on the School's Masters in Humanitarian Studies Course. But American, Amy Segal, from San Francisco, says it has proved invaluable experience for work in humanitarian disaster areas.

Managing the handling of a herd of elephants, making sure that units in more remote film locations had all the services they needed such as lighting, running water and road access were all in a day's work for Amy - giving her the sort of logistical skills on which she could call when she volunteered to work for Médecins Sans Frontières four years ago.

"Managing a film unit is not dissimilar to finding a way to provide clean running water, sterilisation methods and electricity to a clinic or operating theatre in a refugee camp", says Amy.

A graduate of History and Literature from Yale, Amy worked initially in prison reform and as a journalist/foreign correspondent in the Soviet Union before working in films with stars such as Sean Connery, Catherine Zeta Jones and Jodie Foster.

Seeking a complete change of direction, Amy volunteered for Médecins Sans Frontières four years ago and has since worked in Nigeria, Uganda, Sierra Leone and in Indonesia on relief efforts following the Tsunami.

Amy Segal



"As well as needing medical experts, humanitarian situations also need people who can do logistical and practical work, and my film background gave me the experience

I needed. Now my course is equipping me with the trained skills to equip me for where I want to be, along with a better sense of the history of other emergencies. It also teaches you how to work in a team, which is what you have to do in the field. My aim is to move up into co-ordinating aid programmes."

Not so many years ago, Hazel McCullough was a busy district nurse, visiting patients with a wide range of needs. But now she is studying for a PhD in Education which she hopes will one day indirectly benefit patients in Africa.



For her PhD in Education Hazel is researching the effectiveness of personal development planning specifically for post doctoral graduates whose studies were funded by the Bill and Melinda Gates Foundation. To that end, she is managing a group of post doctoral malaria research graduates who studied at the School and have now returned to Africa. She has developed a personal development planning system for each graduate to individualize and follow for five years.

As Hazel explains: "They are not just using their personal development planning to develop their technical and professional skills but also to develop their personal skills, which collectively will help to promote their career development and progression."

At the same time they are continuing their work in malaria research which covers a wide range of topics in malaria control, including research into health systems to improve community-based health programmes.

Her study is being sponsored by the Gates Malaria Partnership as part of its initiative to set up strategies to support scientists in malaria in developing countries in sub-Saharan Africa, so effectively they don't feel that they have to go to Europe or America in order to progress and achieve maximum personal development. When such graduates leave Africa, their countries not only lose their expertise but also have to import skills, says Hazel.

"Usually funding tends to go to research but the Gates Malaria Partnership is particularly

keen on using money for education and training in Africa. In that way they hope to develop capacity in malaria and help reduce what has been described as brain drain."

Hazel herself grew up in South Africa but came to England to study general nursing. From hands-on nursing, she went on to manage the setting up of a stroke unit at the Countess of Chester Hospital. After taking time out to complete a teacher training course, she moved on to become a Senior Lecturer at the University of Chester's School of Health and Social Care. She was then promoted to Deputy Head of Practice Learning. She is a Fellow of the Higher Education Academy and an external examiner at City University (London).

"I realise that I am probably not a typical LSTM student," says Hazel, "but have taken a three year sabbatical because part of my own personal development planning was to undertake a PhD, and this sponsored programme really interested me."

Hector Diaz

As a small boy growing up in Mexico, Hector Diaz was fascinated by insects and the natural world. Spending holidays exploring the countryside, he was perpetually asking the question: 'why?'



"I spent hours in the open and would ask my dad so many questions that he became fed up trying to answer them!" As a result, his father presented him with his first fully illustrated book about insects when he was seven years old and set him on a path which eventually brought him to the School to study sandflies for his PhD.

Not surprisingly, Hector opted for a scientific career and graduated from the University of the State of Mexico in biology. He then worked in his country's Public Health Services for seven years at the Laboratorio Estatal de Salud Publica (Public Health State Laboratory), specialising in tropical diseases surveillance and epidemiology. Four years ago, he joined a new research team from the university to work on Chagas disease in relation to parasite isolation, DNA-vaccine evaluation and related issues. It was the first group of its kind in his home state (State of Mexico.)

However, having read about work being done at the School into the interaction and continuing relationship between Leishmaniasis and sandflies and the research techniques which were being used, he was eager to take part and delighted to become a member of the group. Hector's PhD studies are being

funded by his country's Council of Science and Technology (Conacyt).

"I decided to change to *Leishmania* because the School's sandfly group's approach appeared to me to be one of the most interesting ones regarding parasite-host interactions, a subject in which I have been increasingly fascinated in the last couple of years," says Hector. "Eventually I hope to go back to Mexico and start my own research project in parasite-host interaction with all I have learned here, but with the "Kissing Bug" and *Trypanosoma cruzi*."

Hector's father, who encouraged his interest in insects all those years ago, is delighted that his son is studying in Liverpool - "My dad is definitely the biggest Beatles fan in Mexico," says Hector.

Staff Profiles

Finance Department

The School has seen a period of rapid growth in recent years and a consequent expansion in the size of the Finance Department. As Financial Controller Chris Brooks explains, it has grown of necessity and is particularly important in view of the increasing number of large grants which the School is receiving. Without a sound financial base the School could not have grown as rapidly as it has, he says. "Donors want to be assured that the financial structure is in place so that the best use can be made of their funds."

Chris leads a group of 13 staff who handle all things financial in the School assisted by the Deputy Financial Controller, Duncan Preston and Management Accountant, June McGuire. The longest serving member is supervisor, Gwen Allen, who came to the School for a three week temporary job fifteen years ago.

Their work is now greatly facilitated by the CODA Dream accounts package which was introduced by Chris Brooks and Finance Office Manager, Dave Thomas to cope with the exponential growth of the School. The software will allow a more efficient and effective finance function to develop whilst maintaining the flexibility needed in today's constantly changing environment in Higher Education. Dave says that the department is always striving to improve its processes.

"Whilst focusing on continuous improvement, the Finance Office never loses sight of the need to maintain good customer service for both its internal and external stakeholders," says Dave.

Complementing Dave's team is the centralised Purchasing Department led by Cathy Harrison. Her team acts as a conduit for the purchase of quality goods and services at the lowest price possible through economies of scale and negotiated corporate contracts with our preferred suppliers.

Working alongside Dave and Cathy's team is Helen McCormack, supervisor of the Grants and Contracts Support Office (GCSO). The number of grants awarded to the School has grown substantially in recent years and the GCSO is central to this process.

Helen and senior research clerks, Sharda Mistry and Maureen Malloy, work proactively with the academic and research staff in making grant applications and also provide ongoing advice and support on finance related issues once a grant has been awarded.



Helen, who joined the School eighteen months ago from a similar role at Liverpool City Council, explains: "We deal with all aspects of research and teaching grants, from budgeting, forecasting and costing advice for applications to claiming income from the funding bodies once a grant has been awarded. Our aim is to free up the researchers' time as much as possible so that they can concentrate on the scientific aspects of their projects".

Left to right, back row: Gwen Allen, June McGuire, Chris Brooks, Duncan Preston. *Middle row:* Maureen Malloy, Dave Thomas, Helen McCormack, Sharda Mistry. *Front row:* Pat Harper, Ena O'Keefe and Kathy Morris.

Maintenance Department

The Facilities Management team headed by Daniel Bennett, could probably best be described as the School's trouble shooters and housekeepers who are responsible for the physical environment of the School. When their telephones ring, it usually means that something isn't working or is causing a problem.

Members of the team have service ranging from over 20 years to five years. They include Jo McWilliam and Christine Hadley - the first people to greet visitors, staff and students at the reception desk. The team's Administrator is Teresa Hewitt, and John Hughes, the maintenance and development manager, is supported by Andy Burns and Alan King. Health, Safety and Fire are the remit of Rick Young, and Tadge Szeszak is the Laboratory Co-ordinator.

A dedicated Facilities Management function was established in 2006 when Daniel Bennett took up his post. An ex Royal Navy electrical engineer, Daniel joined the School from the University of Central Lancashire where he was the FM for two busy Higher Education/Further Education campuses in Cumbria. He has a professional Health and Safety qualification and experience of managing "unplanned" events. These have included the closure of a rural Agricultural Campus in Cumbria due to the foot and

mouth outbreak when he had to oversee the slaughter of cattle and sheep.

As Daniel points out, the FM team has to be extremely flexible and responsive to ever increasing client needs and to new legislation. Since his arrival he has been integrating the various FM teams including those currently outsourced (Security/Logistics and Cleaning), as he firmly believes that good team-work is essential for the effective delivery of FM support.

As the School doubles in size with the completion of the Centre for Tropical and Infectious Diseases, members of the FM team have a particularly demanding time ahead. As Daniel says, everyone will have an important role to play in ensuring the smooth operation of this state of the art facility.

He adds: "Before I came I thought the School would be a very interesting place to work and that has proved to be the case. I feel lucky to have joined at such an exciting time."



Left to right, back row, Tadge Szeszak, Rick Young, Andy Burns, John Hughes. *Middle row:* Daniel Bennett and Alan King. *Front row:* Christine Hadley, Teresa Hewitt and Jo McWilliam

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Retirements

Dr. Guy Barnish

Yorkshire-born Dr Guy Barnish believes he has his father to thank for his fascinating career in tropical medicine. He nurtured his son's interest in natural history, and when Guy was eleven years old, his father became a mine surveyor in what was then Northern Rhodesia (now Zambia), taking his family to live there. The love of Africa that Guy developed as a boy stayed with him for the rest of his life.

Memories of the freedom of his childhood years, playing in the bush and witnessing the exotic animals that were part of everyday life, stayed with him when he returned to Britain to attend Scarborough High School for Boys. After winning the Kingsley Fairbridge Memorial Scholarship, he returned to Africa to become a student at the newly founded University College of Rhodesia and Nyasaland where he majored in Zoology and Botany.

As a student, he was president of the University Exploration Society, and led an expedition to the source of the Zambezi to collect mammals, reptiles, amphibians, birds and insects for the

National Museums of Rhodesia. As the expedition took his group through the Congo, just after the Belgians had left and into Angola at the time of their civil war, they had some fraught experiences including the party being jailed.

On graduation Guy worked for the Ministry of Health in Zimbabwe as a Bilharzia Research Officer, controlling schistosomiasis in sugar cane irrigation systems. He then went to work for the Rockefeller Foundation in the West Indies, studying the transmission and control of schistosomiasis. His career with the School began 12 years later when he took a sabbatical to do a Masters in Community Health at the School in 1982. This was followed by a period of research into *Strongyloides* for the School in Papua New Guinea. He returned to Liverpool to work as a lecturer, and was later employed by the Medical Research Council to open a malaria research laboratory in Sierra Leone. Due to the escalating civil war, he returned to the School where he became Senior Lecturer in Parasitology.

For the past ten years he has been Projects Co-ordinator of the DIFD funded Malaria Knowledge Programme, living and working for part of that time in Namibia on projects to improve the diagnosis of malaria. Having spent half



his life in the tropics, Guy is appreciative of the fact that the School has given him the opportunity to travel extensively. "It has been a great and rewarding experience. I have thoroughly enjoyed meeting people of all nationalities and experiencing different cultures."

Although retired, Guy has not severed his links with the School having been invited to return as a part time lecturer in parasitology, and he continues to be the Editor of the Annual Report.



Ray Rogers

Ray Rogers, retired in February 2007 after nineteen years as a porter at the School. Ray was very well liked and his cheerful ways will be missed by staff and students alike.

His retirement party was well attended by all sectors of the School staff, who gathered to say goodbye and wish him well for the future."

Jean Taylor

Jean Taylor, who retired this summer after 27 years at the School, has many memories. Most vivid amongst them are the time when she worked with Dr Dion Bell. There were more than 3000 ex Far Eastern Prisoners of War and Dr Bell helped many after long years of suffering.

"Dr Bell used to see four ex-FEPOWs a week, and the DHSS used to send me four huge musty-smelling files on the men we were seeing," recalls Jean. "Many of them had harrowing tales to tell and Dr Bell was the first person they had spoken to about their experiences in the POW camps."

Jean started work at LSTM in September, 1980, having previously worked in the University of Liverpool's Senate House, for eight years. Prior to that she had worked for what used to be Wallasey Corporation and had other jobs in commerce. Her first School appointment was as departmental secretary to the department of Tropical Medicine, then headed by Professor Herbert Gilles.

"In those days Dr Bell was also co-ordinator for the DTM&H course and we ran the only 3 week course in tropical medicine for nurses in the world. I helped run 23 of these courses, and have often thought it a great shame that this course no longer runs. When Professor Gilles retired Professor Hommel was appointed in his place and I worked for him," recalls Jean.

During a reorganisation of the School's structure, Jean moved to Child Health, working with Professor Bernard Brabin and Dr Brian Coulter, remaining there until her retirement.

"The highlight of my time in the School was undoubtedly the Centenary Ball held at St George's Hall in September 1998. It was a very grand occasion held on a glorious evening and was enjoyed enormously by everyone who attended."

Since retiring Jean has taken up badminton again - this time with the over 50s - and yoga. She is also enjoying line dancing. As she says: "It is just nice to be able to do what you want when you want. No rush, no hassle."



Highlights

Rob Heyderman was appointed Professor of Tropical Medicine and Director of the Malawi-Liverpool-Wellcome Trust Clinical Research Programme (MLW) in November 2006. He trained in London and Zimbabwe, was a Senior Lecturer and then Professor of Infectious Diseases in Bristol before coming to Liverpool.

He says: "This was a once in a life time opportunity to direct a Wellcome-funded Major Overseas Programme in close partnership with an African University"

"Our vision for the MLW Clinical Research Programme is to improve the health of people in Malawi and elsewhere in the Region through excellent research and research training in basic sciences, experimental medicine and public health. Our aim is that MLW will be the Region's leading laboratory-



based health research institution, lead by Malawian and international scientists, inspiring the work of other institutions throughout the World"

Professor Heyderman's own research interests comprise the biology of severe infection; the development of naturally

acquired immunity to bacteria that cause meningitis and pneumonia; regulation of inflammation; and the clinical diagnosis and management of meningitis and other severe infections. Current initiatives include new approaches to mucosal vaccination to prevent pneumonia and meningitis both in the UK and in the tropics; and a trial of steroids in severe sepsis in children.

The 2007 Leverhulme Lecture

Dr. Stephen Graham was the 2007 recipient of the Leverhulme Medal following his invited lecture, on 18 September, entitled, "Child health in the tropics: the clinician and clinical research in the era of IMCI"

Steve's association with the School began in 1991 when he enrolled for the Diploma in Tropical Child Health, for which he received a distinction, despite having attended only half the lectures! He was then appointed Lecturer in the Department of Tropical Paediatrics and during his tenure in that post he set up a long standing Brazilian association following a British Council link. This association has led to many new research and training initiatives, which continue to this day.

Following his time with the School, Steve moved to Malawi to work for the Department of Paediatrics, in the Queen

Elizabeth Central Hospital, Blantyre. He joined at a formative time in its development and he greatly facilitated the expansion of clinical teaching and research activities in child health. He was subsequently appointed as a Wellcome Trust Research Fellow based at the Malawi-Liverpool-Wellcome Trust Programme of Tropical Research where he specialised in studies on respiratory infections in HIV-infected children, helping to establish new management protocols.

Dr. Graham is a member of the Child TB Sub-group of the WHO Stop TB Partnership DOTS Expansion Working Group; chairman of the Respiratory

Diseases Section of the International Union Against Tuberculosis and Lung Disease, and is a member of the Global Action Plan for Pneumonia.



Dr. Steve Graham receiving his Leverhulme Medal from Professor Janet Hemingway.

He has completed his work in Malawi, having resigned his post as Senior Clinical Lecturer at the School and Deputy Director of the Malawi-Liverpool-Wellcome Trust Programme of Tropical Research. He now moves to Australia to take up the post of Associate Professor of International Child Health with the University of Melbourne.

Highlights

Dr Alexis Nzila, an honorary lecturer at the School, received a prestigious award from the Royal Society in recognition of the advances his research has made into drug resistance and new treatments for malaria.

Dr Nzila, who has worked closely in tropical pharmacology with Professor Steve Ward for over ten years, was awarded the Royal Society's Pfizer Award for his research into malaria folate biochemistry, and its parallels in cancer.

Both cancer cells and the malaria parasite multiply readily and rely upon the availability of vitamins called folates in order to grow. By comparing the role of these vitamins in cancer cells to their function in malaria, Dr Nzila was able to understand their function more clearly,



particularly their role in causing resistance to some commonly used antimalarials. These treatments are used to inhibit the production of folate molecules, thereby preventing the malaria parasite from multiplying. The parasite, however, can quickly develop resistance to the drugs, making it difficult to treat the disease.

Dr Nzila has found a new way of treating the disease by using a non-toxic compound called probenecid, that can be used in combination with antifolates to reverse the parasite's ability to resist drug treatment. This has already been used to treat children in Nigeria.

Paying tribute to Dr Nzila for his groundbreaking work, Professor Ward said: "This award is highly prestigious and thoroughly deserved. It recognises the research activities of an African scientist who has made groundbreaking advances in parasite chemotherapy while working for most of his career in the field in Africa rather than seeking great financial rewards elsewhere. Alexis shares the School's ambition to use high quality basic scientific information on parasite biochemistry and resistance as the pathway to newer, safe, effective and affordable drugs for Africa.

Lord Rees of Ludlow presenting Dr. Nzila with his award.

The pioneering work in Malawi of the School's Professor of Clinical Tropical Medicine, Malcolm Molyneux and his wife, Professor Elizabeth Molyneux, were given national recognition when they each received the OBE in the New Year's Honours List for their services overseas.

Professor Malcolm Molyneux is Director of the Malawi-Liverpool-Wellcome Trust Research Programme (M-L-W) at the College of Medicine in Blantyre and is a Wellcome Trust Research Leave Award recipient. He has a special interest in cerebral malaria in children.

The programme supports locally based scientific investigations into diseases such as malaria, TB and HIV, and other bacterial and viral infections.

The programme works in collaboration and partnership with the University of Malawi College of Medicine and has direct collaborative links with the Liverpool School of Tropical Medicine and the University of Liverpool. The partnership of over ten years has

helped to strengthen the research capacity in Malawi and to improve diagnosis and treatment of serious diseases in the country.

Professor Elizabeth Molyneux, (an Honorary Professor of the School), who worked at Alder Hey Children Hospital before she and Malcolm left Merseyside to begin their pioneering work, is now Head of the Paediatric Department in Blantyre's College of Medicine. She has won acclaim for her care of children with cancer at the Queen Elizabeth Central Hospital in Blantyre. There, her determined efforts led to the building of a 16 bed oncology ward for children with cancer. She and devoted colleagues have to struggle to buy even the most inexpensive chemotherapy drugs, but have still managed to reduce the death rate of children with the most common childhood cancer in Malawi.

The couple, who have four children and two grandchildren, like to go walking in the mountains in their spare time and sing in an amateur choir.



Rosemary Hawley, JP, DL, who steps down this year as School Chairman, received an MBE in the New Year's Honours List for her services to healthcare on Merseyside. The Honours List reflects and pays tribute to outstanding achievement and service in the community.

In addition to her long association with the School, she is Chair of Knowsley Primary Care Trust. She is also a governor of Liverpool John Moores University, a Director of Blackburne House Centre for Women, a Committee member of the Duncan Society, a Trustee of Community Foundation and a Trustee of Community Spirit. She is a magistrate and Committee Member of Mersey Common Purpose. She is also a trustee of the Bishop David Sheppard Anniversary Trust, in memory of the well-known Bishop of Liverpool. Her husband, Anthony, is currently Canon Treasurer of Liverpool Cathedral and Mrs Hawley recently held the office of High Sheriff for Merseyside.

Born in India, Mrs Hawley worked as a teacher for the VSO in Ghana after reading English at London University. She then went on to hold various posts in the voluntary sector and in community work. Mrs Hawley is well known and respected in the region for her strong commitment to the health and well being of its people, illustrated by her many diverse roles in the community.

City of Culture

As Liverpool becomes alive with events and celebrations of historical and contemporary achievements for its reign as European Capital of Culture 2008, LSTM's contribution is being marked in heritage and health events

'The world in one city' is a slogan often used by the city of Liverpool to describe the vibrant and varying cultures which have established themselves on the banks of the River Mersey over the centuries. The same sentiment sits equally well with the Liverpool School of Tropical Medicine which, like the city of its birth, welcomes people from all parts of the globe.

As Liverpool launches its programme for European Capital of Culture year 2008, celebrations are focussing on all aspects of culture which have made the city so famous. Its maritime history, its famous musical heritage, its literary, theatrical and sporting histories and the

achievements of its academics will all play a part. The School shares a rich heritage with other historic Liverpool institutions and individuals that have played a major role in the city's pioneering work in the field of health. One of the School's own pioneers, Sir Ronald Ross, received the Nobel Prize for Medicine in 1902 for establishing the link between the mosquito and malaria. Liverpool was the first city in Britain to have a Medical Officer of Health, a City Bacteriologist and an Environmental Health Officer. It was also the first city in the world to have public baths and wash houses, thanks to the vision of a local woman called Kitty Wilkinson.

The School's history in part reflects the city's preoccupation with health at the close of the 19th Century. As shipping and trade with all parts of the world expanded from the port of Liverpool, so did the diseases which sailors brought back with them from the tropics. As a result, the Liverpool School of Tropical Medicine came into being.

Identifying so closely with so much of Liverpool's history, LSTM has welcomed the opportunity to be a key partner in contributing to the health and heritage programmes organised by Liverpool Culture Company for European Capital of Culture Year. The School's achievements have already been marked during Liverpool's 800th birthday festival this year in an event called An Extraordinary Journey. This charted the role that the city has played in improving the health and wellbeing of people worldwide. On a contemporary note, School Director, Professor Janet Hemingway, recently won an award in the "Spirit of Liverpool Greatest Merseysiders" event in the category of education and innovators.



OBITUARIES

Professor Tony Hart 1948-2007

Charles Anthony Hart was born in Stockton-on-Tees, County Durham and was educated at St. Michael's College, Leeds and the Royal Free Hospital School of Medicine, University of London, where he graduated in medicine in 1972. In 1977 he was appointed as Registrar in Clinical Pathology for Liverpool health Authority and Research Fellow in the Department of Medical Microbiology, University of Liverpool, qualifying for Membership of the Royal College of Pathologists in 1982 and during this time completed his PhD in biochemistry.

He remained at the University of Liverpool for the remainder of his career and was appointed Professor of Medical Microbiology in 1986 at the age of 38 years. He had a lifelong interest in

membranes and the science of cells and translated this into a matrix of applied laboratory, clinical and epidemiological research studies on infectious diseases. His primary interests were in paediatric infections and this led to ground-breaking work on meningitis, rotavirus, diarrhoea and respiratory infections in children, which was brought into a global context through the Tropical Microbiology Centre, which he established as a joint activity with the School and collaborations with research staff in the Child and Reproductive Health Group. He worked extensively with veterinarians at Leahurst and succeeded in bringing medical and veterinary science closer together.

He was a very popular lecturer, prolific scientific writer and valued member of University Committees. Many young doctors and scientists are indebted to his support, good humour and sustained encouragement. He engendered strong feelings through his personal warmth and academic brilliance. To many people he was a hero as he was so supportive of ideas and projects and always willing to

help individuals, supervising more than 100 PhDs and MD theses. There was probably no better-liked person in the Medical Faculty.

He died unexpectedly in September aged 59 years and is truly irreplaceable as an academic colleague. His friendly ways and good humour will be greatly missed by so many colleagues in both the School and University.



A recent photo of Tony Hart with Jenny

Lorna Elsie Maegraith

Lorna Maegraith died in Liverpool on 2nd December 2006. She was born in Adelaide, South Australia in 1907, ten days before her husband-to-be Brian Maegraith, who became Dean of the Liverpool School of Tropical Medicine in 1946. She became engaged to Brian in Adelaide at the tender age of 17 and the engagement turned into marriage only ten years later. Brian went to Oxford as a Rhodes scholar and stayed there until war broke out, becoming Dean of the Medical Faculty.

She was a beautiful woman with considerable sporting talent, being a junior tennis champion at State level in South Australia. Her love of sport continued throughout her life, in addition to her acute awareness of world affairs.

After her husband's appointment as Dean of the Tropical School she travelled with Brian on many of his trips, particularly to Thailand, West Africa and



Lorna and Brian Maegraith

the United States. After Brian's death, in 1989, it was a major challenge for her to stay in a big house on her own, but never for a moment did she contemplate leaving Liverpool. She had grown to love the city and its friendly people so much. She was fortunate to have many close friends, including the friendship of Herbert Gilles, who had worked so closely with Brian. She was always close to her son Michael, his wife Helga, and

her two grandchildren Birgitta and Janine, who all survive her. Lorna died peacefully in her bed in her own surroundings, aged 99 years.

Professor Sir Ian McGregor, CBE, FRS.

Ian McGregor died in Homington, Wiltshire, on 1st February 2007. He was one of the last remaining scientists to have complete mastery of malariology, past and present.

Born in Lanarkshire in 1922, he had a distinguished undergraduate career and qualified in Medicine from Glasgow in 1945. He joined the scientific staff of the Medical Research Council (MRC) in the Gambia in 1949. McGregor set himself the task of leading the scientific effort to elucidate the epidemiology and immunology of human malaria and to characterise the host's response to infection. In collaboration with many distinguished investigators, he pursued this lifelong interest in acquired malaria immunity and the mechanisms responsible for it, and he subsequently extended these studies to malaria in pregnancy and its consequences for the infant. Ian McGregor's vision of tropical medicine was broad and was exemplified

by his views and efforts to promote global disease control. He acted as chairman and consultant to several World Health Organization Expert Committees on malaria and for this work was awarded the WHO Darling Foundation Medal. This was one of many distinctions and accolades that were granted to him. He relocated to the Liverpool School of Tropical Medicine as a Professorial Fellow after he and his wife, Joan, finally returned from the Gambia in 1980.

His time in Liverpool was a period of change and he was a constant support to senior management. During this time he published with Walther Wernsdorfer, his magnum opus, **Malaria: principles and practice of malariology (1988)**, which is an essential reference on this subject. The McGregors' hospitality at their rural retreat in Cheshire was a frequent gathering place for friends and colleagues where they created a splendid rural garden. He is remembered by School staff with affection, for his support to young scientists and doctors and for his exemplary lecturing. He is survived by his wife, Joan, and their two children.



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