

LIVERPOOL SCHOOL *of* TROPICAL MEDICINE



ANNUAL REPORT
2002 - 2003



LIVERPOOL
SCHOOL OF
TROPICAL
MEDICINE

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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 result 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

Last December at the AGM of the School, I was very honoured to be elected Chairman of the Council. I had served as Vice-Chairman under William Fulton, who exemplified for me strong commitment to the work of the School, combined with a well informed wider knowledge of some of the developing countries it works with, and also of the voluntary sector and business on Merseyside. We are all very grateful for what he contributed to the School during his term and I am pleased to say he agreed to continue as a Member of the Council.

Liverpool has enjoyed a lot of attention this year. The theme of its successful bid to be European Capital of Culture was "The World in one City". The School is certainly an important part of that with over thirty nationalities working here. We have had a very full and productive year. Our Director, Professor Janet Hemingway, who started here in September 2001, has continued her cracking pace in raising standards and expanding the School, as she promised she would in the development plan she drew up in consultation with all staff and partners. The plan described how the School would double in size in five years, and it is well on course to do that. Indeed the increase in staff, in research projects, teaching, clinics and technical assistance and consultancy means we have run out of space despite moving the growing and highly respected Liverpool Associates in Tropical Health (LATH) services elsewhere, and urgently need the new building now being planned. It will stand alongside our existing accommodation. The design is well in hand, and £24 million of funding is being sought. The Council is confident that the funding will be forthcoming because the new building is so obviously needed, and will be put to such good use in forwarding the objectives of the School in developing countries, as well as increasing jobs on Merseyside and its reputation for excellent biological sciences. We expect to be able to report further at the AGM on December 5th.

We are grateful to our Vice-Presidents who continue to provide strong general support as a body for all our work, but are also in some cases developing individual joint projects with their companies. We are very appreciative of their international knowledge and worldwide connections.

As you will see in this Annual Report, the School is expanding on several fronts: LATH – our consultancy and technical assistance subsidiary – has had its best year ever, demonstrating how well placed it is to meet the increasing need worldwide for its services; the new distance learning MSc, in conjunction with Liverpool John Moores University, has started; the new training courses starting in January for refugee doctors, which, we hope, will help to meet the needs of minority communities in this country, has received to date sixty applicants for its ten places; there are huge increases in research and knowledge programmes; teaching overseas and UK students in Liverpool is strong; the clinic is bulging and the new infectious diseases wards at the Royal Liverpool University Hospital are busy, as is the work with child health at Alder Hey. All this expansion coupled with a visit from the Charity Commission has caused us to start a review of the structure and workings of the Council and its committees to make governance even more effective as the School expands.

I am very grateful to all Council Members, drawn from business, the voluntary sector, the University of Liverpool and the School itself who serve it in this way, particularly to Simon Sherrard, Vice-Chairman and Chairman of the Audit Committee, and to Rob Macfarlane, Treasurer and Chairman of the Finance Committee. Both have done sterling work this year and can report considerable improvements. The money is in better shape than for some time, thanks to increased research grants and also to the wise stewardship of our Bursar, Einion Holland. Janet and he have provided effective management leadership in the School, allowing it to move into a new and very exciting phase of developments. I am full of admiration



for them, and for all the extremely dedicated staff who accomplish so many amazing things here in Liverpool, and in developing countries, to promote improved health for the very neediest in the world.

Rosemary Hawley

Director's Report



In 2001 the School adopted a new strategic plan that was designed to foster growth in activities solidly in line with its mission statement. The plan was a blueprint for doubling the School's size over five years, while tackling the long-standing financial problems that have plagued the School for over a decade. I am delighted to report that we are well on track for achieving these goals. Our baseline turnover of £9.8 million in 2001 has increased to £15 million in 2003, an improvement of 53%. We have also moved from an average operating deficit over the last decade of -£225k per annum to an operating profit of £221k this year, putting the School in a much healthier position than it has been for many years. The bulk of this growth has come from increased research activities (see Figure), with research accounting for 73% of our income in 2003 compared to 50% or less of income from 1994-2000. This is a trend that is set to continue with our teaching and HEFCE block grant income likely to remain steady (as it has for the last decade) at its current levels for the foreseeable future. Recent new research awards in excess of £1 million from the National Institutes of Health have opened up new areas of funding, while our traditional support from the Department for International Development, the Wellcome Trust and the Medical Research Council remains strong, giving the School a

balanced portfolio of research from cutting edge molecular to state of the art social science-based analysis of tropical diseases and their control programmes.

As the School now advances with renewed confidence our major problems move to one of space. Much of our current space was last refurbished 20-30 years ago and we have neither the quality nor quantity of space to cope with our strategically planned growth. To rectify this we are now developing plans to establish a state of the art laboratory-based research facility, which will give us 7000m² of new space, built on the derelict site immediately adjacent to our current building. We have already raised almost £3 million towards this and other major donors are being approached to allow us to reach our target of £23 million within the next 12 months. Meanwhile we will spend in excess of £1 million on refurbishing the worst of our teaching space over the next two years.

During the year Professor Dick Ashford retired after a long and distinguished service, Professor Axel Kroeger was seconded to TDR,WHO and our technical support staff were restructured to reflect our increased need for research support. We welcomed onto the staff Dr. Feiko ter Kuile, who will strengthen our epidemiology, clinical

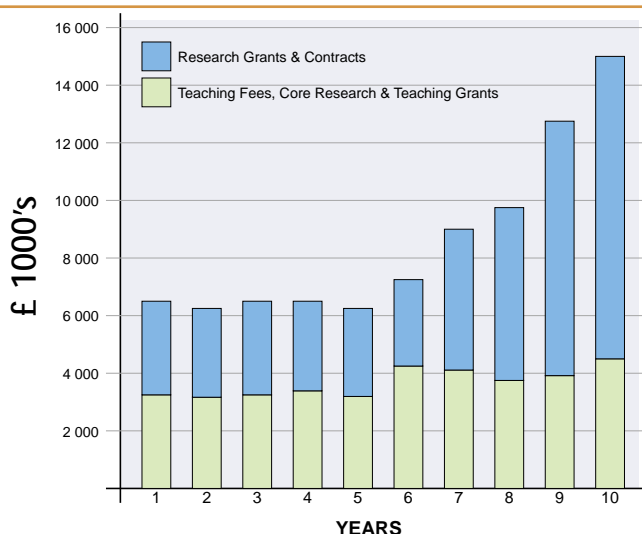
trials and child health arms and Dr. Pip Fisher who heads up our refugee doctors' course alongside a raft of research fellows and post-doctoral staff. More appointments are planned in the near future as the School invests in growth in strategic areas.

A major contributor to our success this year has been LATH, who, via a series of contracts throughout the developing world have contributed significantly to the School, both academically and financially. Plans are well advanced to build on LATH's success and at least two new appointments will be made to strengthen this area of the School's activities in the coming year.

The School's practical and academic outputs, in terms of long-term linkages in the tropics, at ministry, district and research institute level, and publications in highly ranked journals, continue to expand. This should ideally position us for recognition as one of the top world and UK centres for infectious diseases with some of the major diseases, such as malaria being covered from clinical treatment to mosquito vector ecology. This is a range that few, if any, institutes can match, and continues to be a major strength within the School.

We thank our many supporters for continuing to help the School achieve its goal of becoming the world's leading School of Tropical Medicine and look forward to interacting with them as we pursue these exciting developments.

Janet Hemingway

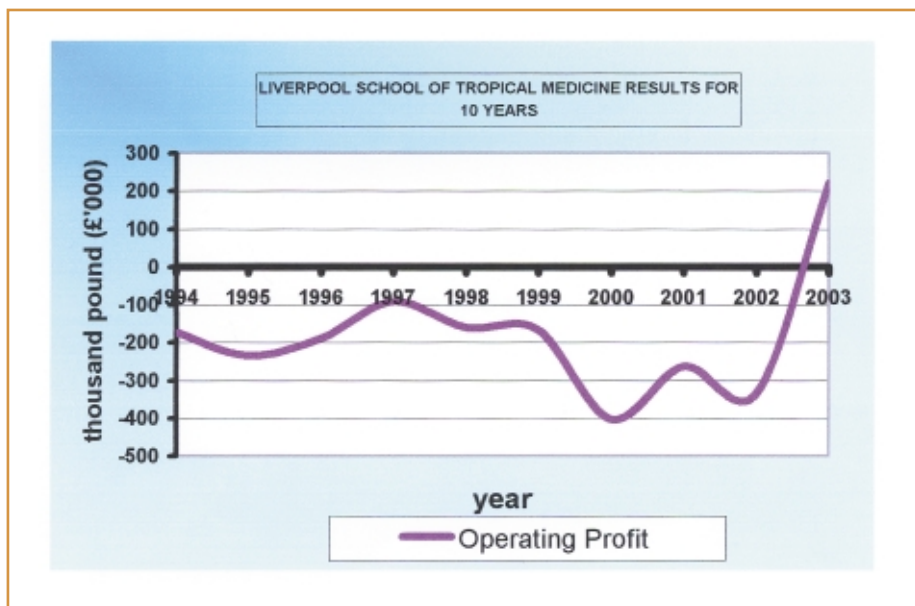


Treasurer's Report



Treasurer's Report on the financial results for the year ended 31 July 2003

The year has marked a turning point with the School producing an operating surplus for the first time in the last 10 years. This is shown below.



This improvement in the financial performance is the result of a range of developments, improvements and new procedures during the year, and reflects a successful end to the first year of the School's five year Strategic Plan.

Key areas of improvement in arriving at these enhanced results were:-

1. The re-negotiation and increase in block teaching grants received from The University of Liverpool
2. Substantial growth in research grants and contracts, with a linked increase in overhead recovery contribution.
3. Substantial increase in the profitability of the School's wholly owned subsidiary company, Liverpool Associates in Tropical Health (LATH) from £322K to £521K – all of which is gift aided to the School.

4. Lower than anticipated uptake under the voluntary early retirement scheme.

The year saw a considerable improvement in the School's cash resources, resulting primarily from implementation of improved controls over receivables. Consequently the School was able to continue to reduce its indebtedness to The University of Liverpool. It is envisaged that the balance outstanding at the year end of £343k will be repaid in full during the current year.

Looking to the future, it is clear that many of the core targets contained within the School's five year strategic plan are being progressed. These include:-

- Development of our adjoining derelict site, on which it is proposed to build a £23 million research facility.
- Enhancement of the quality of the facilities in

the School's main building, through the utilisation of a £300k Wolfson grant to part fund the £660k scheme, which is due to start in Spring 2004.

- Improvement of the effectiveness of financial management within the School through restructuring, and
- Continuation of growth in research grants and contract income.

Whilst all of these will have considerable implications, it is hoped that the success of 2003 can be continued in future years.

Rob Macfarlane
Hon-Treasurer

7 November 2003.

Fundraising



The Fundraising Office is responsible for securing funds to underpin major School initiatives and, most importantly, the general day-to-day running of the School. Although research grant income has greatly increased resulting in substantial growth, the Fundraising Office is challenged with seeking the funds to provide the additional space and resources that these research projects need. The General Purposes Fund is the area that we would like to encourage our donors and potential new donors to support.

In the financial year 1st August 2002 – 31st July 2003 we have received charitable donations amounting to £146,419.77 and our sincere thanks are offered to all the trusts, companies and individuals who have contributed.

After an application to the Wolfson Foundation, Professor Hemingway was granted £300K to move forward an extensive rolling programme of refurbishment of the School's teaching space. The Fundraising Office has secured £20K from the Pilkington Family Trust and has just been awarded £100k by the Garfield Weston Foundation towards this project (not included in this financial year).

Our students have benefited greatly this year from the generosity of a number of donors including Standard Chartered Bank, The Oglesby Charitable Trust, The Gunter Trust and the Harbinger Foundation, all of whom have helped overseas students attend courses at the School.

We asked some of our donors to tell us why they choose to give to the School.

Mrs Irene Horsfall – "I have been a committed donor since 1984. My interest in the School was captured in 1984 by a brief news item that was featured in the Daily Telegraph, concerning the plight of the Tropical Child Health Department at the School as a grant was coming to an end.

I felt it to be illogical to send food to the starving children, when there was a high likelihood they would die of a tropical disease. I am appreciative of the fact that the School offers a chance for overseas students to come and learn the necessary expertise and return to their countries of origin with skills that can save lives. I have a personal connection to the School through Professor Malcolm Molyneux and his wife Liz who attend the same Church when not overseas in Malawi."

Mr Fred Freeman (pictured)

"As the nephew of Professor Warrington Yorke, I grew up, so to speak, with the Tropical School, whose wonderful work I have greatly admired all my life. As my parents lived in South Liverpool and as Warrington lived on the Wirral my mother not infrequently arranged to pay brief visits to her brother at the School. In the early nineteen twenties, as a young child of pre-school age, I used to be handed over to Mr Godseff and was usually taken by him to the Museum on the ground floor or to the animal house on the roof. As I grew up my connections with the School continued on a social level, and for many years both before and after the war I knew a large number of the School's teaching staff. I was then honoured in about 1968, to be invited by the then Chairman, Sir Geoffrey Bates, to join the School's Council on which I served for approximately twenty years, including a period on the Executive Management Committee when Peter Naylor was the Chairman. I greatly admire the work of the Liverpool School of Tropical Medicine, and of those skilled and dedicated persons who serve with it."



Mr and Mrs Behrend

"We have been supporters of the Liverpool School of Tropical Medicine for a good many years. While we also support a fair number of other charities, there are three particular reasons

why we are more than glad to count the School among them. First and most important, we see serious health problems, which so often make it impossible for people to earn their own living, as one of the major causes of poverty in every country, but especially so in third world countries. We are in no doubt that the School plays a significant part in helping to overcome, or at least alleviate, some of the worst kinds of tropical disease. Its work is of world importance. Secondly, we have known a number of people who have worked in it, or for it, and it has always impressed us as a first class organisation. And thirdly – quite important for us personally – it is a LIVERPOOL institution of world standing."

HOW TO DONATE

The Fundraising Office can provide details of various tax efficient methods of giving for UK taxpayers, including the latest provisions for Gift Aid, Corporation Gifts, Gifts of quoted / unquoted shares and securities. Several of these now offer significant benefits to donors, for example in terms of exemption from capital gains tax, as well as making substantially enhanced sums available to the School.

For more information please contact:

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Photo : Dr. Imelda Bates (left) receives a cheque on behalf of the School from Eileen Taylor, of Soroptimist International of Crosby, the international women's organisation which works to improve the lives of women and girls in developing countries.

Turning the Tide

“ *Lymphatic Filariasis is a distressing disease of the poor which causes sufferers to be disabled and even social outcasts. The School's support centre is at the hub of the Global Programme to eliminate the disease* ”

Since the World Health Assembly resolution in 1997 to “eliminate lymphatic filariasis (LF) as a public health problem” great progress has been made. In 2000, the year the Lymphatic Filariasis programme was launched, 2.9 million people in 12 countries were treated. Two years later, in 2002, this figure had increased to 60 million people in 34 countries. This is an achievement of many partners - the Ministries of Health in the endemic countries being foremost. And, of course, the commitment of GlaxoSmithKline (GSK) to donate albendazole globally and Merck & Co. Inc's pledge to expand its ongoing Mectizan® Donation Program in Africa where onchocerciasis is also prevalent, thus creating a unique public-private partnership. Other partners include the World Health Organization, Emory University, CDC, the Carter Center and with funds from the Department for International Development (DFID) and GSK, the School's Lymphatic Filariasis Support Centre.

Last year it was reported that the Centre's plans for the coming year included encouraging country programmes to integrate with other control programmes, increase the level of advocacy, engage new NGOs and progress evaluation and monitoring. The Centre has worked hard at these goals and they are pleased with the progress already made in all areas, and the commitment and collaboration from all partners to these plans are to be applauded.

Following on from the second meeting of the Global Alliance to Eliminate Lymphatic Filariasis (GAELF), held in Delhi, the Liverpool Centre hosted an ad-hoc meeting in December. Representatives of the six global regional areas plus other partners met to take forward outcomes of the Delhi Working Groups. An outcome of the meeting was a more structured Global Alliance. A Secretariat and two Task Forces for Advocacy & Fundraising and



Communications were established. The Task Force for Communications is based in Liverpool with Professor David Molyneux as Chair. The Task Force's brief is primarily to enhance communications between existing partners, encourage the involvement in the GAELF of new partners and of the wider health and development community, including the non-technical media. Additionally the Task Force has been charged with organising the next GAELF meeting in Cairo in March 2004 where it is expected that up to 200 partners from the six global regions will meet. Professor Molyneux is a member of the Secretariat. The Centre, being responsible for European private-sector funding, is also actively involved with the Task Force for Advocacy & Fundraising of which Mrs Joan Fahy is a member.

With DFID operational funds, the Centre continues to support activities in-country. Now active in providing funds to 20 countries, the funds provided by DFID are indispensable in ensuring the success and expansion of the annual mass drug administration.

Photo Above left : Dr. Mwele Malecela, Director of the National Lymphatic Filariasis Elimination Programme in Tanzania footwashing at the launch of the programme in Lindi.



Through the use of the Bill and Melinda Gates Foundation funding, the Centre

- has 11 students registered, either in Liverpool or their home country for PhD/MPhil degrees and one student who recently completed the MCommH.
- in collaboration with The Wellcome Trust and the World Health Organization has launched an inter-active training CD-ROM.;
- edits *Filaria Journal* (<http://www.filiariajournal.com/>) the open access electronic journal providing updated information on all aspects of filarial diseases;
- launched *filariasis.net* knowledge base (<http://www.filariasis.net/>) an open access web-based portal on lymphatic filariasis.

Photo Above right : Lymphatic filariasis is endemic in more than 80 countries. The Global Programme to Eliminate Lymphatic Filariasis has already made major strides to eliminate the disease as a public health problem.

Photo Above inset : Filarial worm (microfilaria) from the blood of an infected patient.

Working with overseas partners to make a global impact

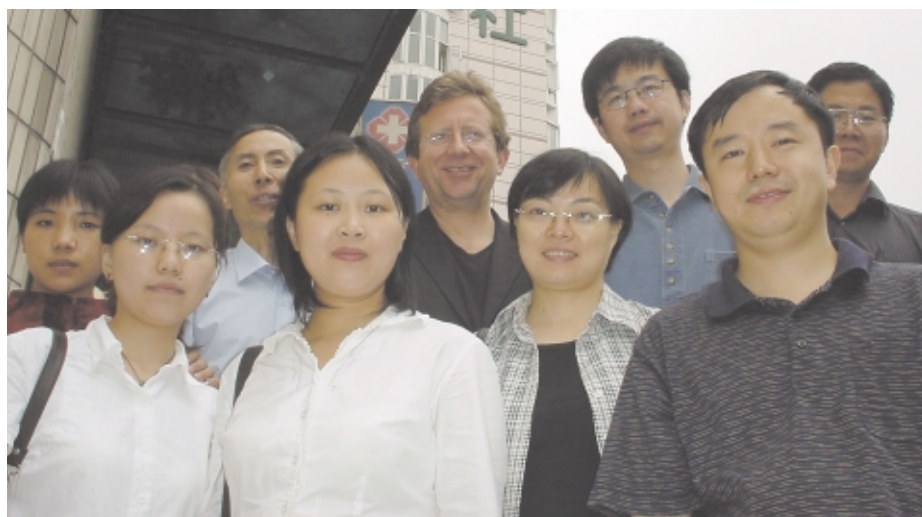
“ Our reach has extended with interesting work developing with colleagues in Russia ”

There have been exciting developments with the network on all fronts, with a host of new staff in Liverpool and new activities with our collaborators abroad. Systematic Reviews were in high profile: Julia Critchley, who joined us this year, had her work on risk reduction in smoking published in the *Journal of the American Medical Association*, and Jimmy Volmink and Paul Garner presented their Cochrane Review on tuberculosis adherence to the strategic TB planning committee in WHO.

Aika Omari conducted a review of artemether-lumefantrine, a drug that is being promoted for first line treatment of malaria in Africa, despite its cost. Her review caused WHO to visibly slow down, mainly because their policies were based on enthusiasm from a variety of quarters, rather than any reliable evidence that the drug was better. Good trials are still awaited. Harriet MacLehose prepared, in collaboration with others, a large analysis examining the safety of amodiaquine. This was commissioned by the WHO, done in record time, and led the WHO to re-introduce amodiaquine on their essential drugs list.

Our partners overseas completed some excellent reviews, including the South African Team working on the Cochrane Review on circumcision to prevent HIV, a policy that, by all accounts, people in the US thought was effective and should be implemented, but the research evidence really is currently insufficient to be sure whether this is the case. Collaborators in Nigeria completed several reviews about the management of fever in children, a review of malaria chemoprophylaxis in sickle cell disease is now published, and a review examining the impact of intermittent presumptive treatment for malaria in children is almost complete.

The large individual patient data analysis examining the effects of artesunate combinations in uncomplicated malaria is nearly complete: it is the largest single meta-analysis in malaria ever attempted. Qian Xu, part of the



team and based in Shanghai, has completed an interesting systematic review of Chinese literature examining how many women have abortions as teenagers, and is highlighting a high level of unmet need in urban Chinese populations.

Martin Meremikwu, part of the Alliance and based in Nigeria, was requested by Cross-River State to establish a clinical guidelines project and this is now moving forward rapidly, getting clinicians involved in auditing their own practice and comparing it to what is best from reliable research evidence. Martin has also helped to establish a new Institute of Tropical Disease Research and Prevention at the University of Calabar. Work on evidence based obstetric care in Tanzania is nearing completion. Collaborators in Thailand are exploring benzodiazepine overuse, building on Nonglak Chuyana's work on clinical guidelines with nurse practitioners. New work on the management of preterm births and how best to assure adherence for anti-retroviral treatment has helped develop the programme of work in Thailand.

Helen Smith is managing the Use of Scientific Evidence Initiative, with a focus on West Africa. This work builds on the excellent progress made with collaborators in Nigeria, and aims to extend projects about translating research into policy further in Nigeria, The Gambia, Ghana and with extension into Francophone countries as opportunities arise.

We had impacts within the Cochrane Collaboration too, with much of the energy for the Style Guide coming from our editorial base. It was finally piloted with Cochrane Review Groups in the Region, and now has been adopted globally across the whole collaboration.

Our reach has extended, with interesting work developing with colleagues in Russia: Vlassy Vlassov, in collaboration with Harriet MacLehose, completed a Cochrane Review of laser treatment for tuberculosis, and recently Lilia Ziganshina from Kazan State Medical Academy started a review of treatment in multi-drug resistant tuberculosis see page 26).

The Fellowship Programme for training in systematic review methods was remarkably successful this year, thanks to the hard work of all the staff, particularly Phil Hinds and Aika Omari. Participants came from Pakistan, Japan, Rwanda, Nigeria, Russia, Venezuela, Ghana and Uganda. This year we started a new experimental one year fellowship programme, to give people intensive training in the science of doing systematic reviews: Hasifa Bukirwa, a collaborator from Uganda has taken this opportunity.

Photo Above : Collaborative TB Research: the Chongqing and Liverpool Team at a recent planning meeting in China.

Dilemma of accessing good TB care - and how Malawi shopkeepers play a part

The EQUI TB Knowledge Programme was set up in 2001 and is core-funded by the Department for International Development. Its research is aimed at trying to increase access of poor people in resource-constrained developing countries to good quality TB care. Impediments to this include factors such as lack of money, transport problems and lack of child care.

The programme's second year was mainly devoted to communication and policy dialogue. This took place within our partner countries (Malawi, China, Zambia) with the dissemination of the emerging findings of local research on the interrelationship between TB, Poverty and TB Control.

In Malawi, local grocery stores are sometimes the first port of call for people with TB who go there to buy cough remedies. Researchers have been working with store owners, who have been included in the programme, to explain to them what TB is and what its symptoms are. The aim is to give them enough knowledge to recognise when customers need help and to tell them where they can access TB treatment. It is hoped that this community education will also help to overcome some of the stigma associated with TB. Future research will examine how taking the treatment to the people, rather than making them travel to a health centre for it, will improve access.

Policy dialogue has involved a lot of work with the global initiative STOP-TB partnership in order to mainstream the issue of TB and poverty on the basis that the poorer and weaker you are, the more vulnerable you are to diseases such as TB and whether vulnerable groups are receiving the help they need.

Also a central activity for the year was the synthesis of the current global state of knowledge about TB & Poverty through the Systematic Analysis of TB and Poverty carried out primarily by Bertha Nhlema (Social Scientist EQUI TB Malawi) and Dr Julia Kemp (EQUI TB Malawi Programme Coordinator) but supported by the entire programme. This synthesis put our own country-level research into the global perspective. The final product and the associated discussion throughout the year (Washington,



June 2002), Montreal (October, 2002), Geneva (January, 2003) acted as tangible activities through which it was possible to engage in policy dialogue with the STOP-TB Partnership and its key constituents including the World Bank, World Health Organization and the Millennium Development Project.

The other key activity of the year has been the initiation of south-south collaborative activities. Examples of this are the engagement by the partnership in Malawi of Professor Zhan from EQUI-TB China in order to assist in designing Malawi's national TB prevalence survey. Similarly, staff from EQUI-TB Malawi have been involved in EQUI-TB Zambia's planning of studies into the prevalence of TB in prisons in Lusaka. Each of our partners has different

expertise and this type of collaboration enables them to share those skills and leads to a healthy interchange of ideas.

Overall, EQUI-TB activities were moved up a gear by the facilitation offered by finalising the recruitment and induction of core staff in Liverpool and across all the other partner organisations.

Photo above : An infant in a paediatric ward taking DOTS drugs which have been ground up and mixed with water, so that the infant can take them easily. (WHO/TDR/Crump)

“ *When you have to sell your possessions, probably your few pots and pans, in order to pay for your travel to a health centre for TB treatment, it is easy to become discouraged* ”

A challenge to make more effective use of scarce resources

“*The emphasis has been on using malaria to spearhead changes for other diseases*”

This year has seen a major shift in the emphasis of the programme. On the basis of changing priorities in global malaria research a clear ‘pro-vulnerable’ focus has been undertaken. Particular emphasis has been placed on the need to find methods that demonstrate more effective use of scarce resources and how local capacity can be developed to get successful ‘pro-vulnerable’ strategies into practice.

The MKP works closely with the Malaria Consortium, the Effective Health Care Alliance Programme and the Gates Malaria Training Partnership teams in the School. The ‘Vulnerability and Health Alliance’ (VHA) a multidisciplinary partnership based at the School, that includes the malaria, TB and HIV Knowledge Programmes and the Malaria Consortium, was established by the MKP in 2001. A framework that can be used to identify cross-sectoral and multi-disciplinary approaches to vulnerability to malaria, TB and HIV has been developed. Evidence collected through a review to support the development of this framework can be used by policy makers to identify integrated strategies to improve resilience of the most vulnerable to malaria, TB and HIV. The VHA has made several presentations over the year and has drafted publications including a major review article and a policy briefing.

Very little investment is being put into developing appropriate, accurate and cheap tools for malaria diagnosis compared to that which is spent on new drugs and evaluating new drug combinations. More locally specific evidence is required to enable policy makers to make rational decisions about the balance in investment between improving accuracy of malaria diagnosis and treating non-malaria fevers with expensive new drug combinations.

The accuracy of malaria diagnosis at community level can be as low as 10% in areas of seasonal transmission.

District health teams in Ghana are an example

where work initially funded by MKP has been carried forward. The project manager recognised that it was important for the continuation of local awareness about gender and equity issues and for implementation of any findings to ensure that a critical mass of local health workers had experience of research in these issues. These groups have been instrumental in determining what constitutes evidence about how gender influences the ability to access malaria care. They have also been key to the collection of evidence and at a local level there have been alterations in their attitudes and opinions as a result. On the basis of this work local collaborators have been successful in obtaining independent funding from WHO/TDR to continue aspects of this work.

The poor quality of laboratory services in many countries is currently the major obstacle to providing quality health care. We have provided evidence about what is needed for an effective district laboratory service and demonstrated that a national system based on a network of motivated senior technician supervisors can improve the quality of services especially those related to malaria. Policy makers need to ensure effective advocacy and resources for laboratories at the highest level and urgently establish quality monitoring and accountability systems including accreditation and licensing.

Malaria is responsible for the majority of laboratory tests at district levels in endemic countries and uses 45% of the laboratory resources.

Malawi has almost no indigenous entomologists and so an intensive capacity building programme has been developed. This includes training for Malawians in entomological techniques at all levels from PhD studentships to short courses for entomological field assistants. Several of these initiatives have been funded through the Gates Malaria Partnership and implemented with the assistance of the Malaria Alert Centre and the Wellcome Trust Research Centre in Blantyre.



Rather than taking a vertical approach to malaria issues, emphasis throughout the programme this year has been on using malaria to spearhead changes for other major diseases and on working across disciplines to develop common strategies that include, but do not focus on, improving malaria care for the most vulnerable. For example, work in Latin America has shown that Insecticide Treated Materials (ITMs) are useful for preventing dengue and Chagas disease as well as malaria and that they can be successfully distributed and impregnated by local cooperatives which can reach into areas inaccessible to non-locals. ITMs thus have more appeal to both Governments and individuals if they are useful for more than just malaria prevention.

Photo above : A Mozambican entomologist searches for malaria-carrying mosquitoes in a traditionally built rural house.

From research project to help for thousands

A voluntary HIV counselling and testing programme in Kenya, which grew out of a research project started by the School in 1998, has seen over 120,000 Kenyans come for help. In acknowledgement of its beginnings, it has been named the Liverpool VCT Centre, now an independent Kenyan Non-Government Organisation. It has assisted over 100 VCT sites to open in government health centres, shopping centres and military barracks all over Kenya. This represents one of the ways in which the School's HIV/AIDS & STI knowledge programme is making progress in the global endeavour to control HIV/AIDS.

The past year has seen several other important developments in the work of the Programme. These include closer working of the main partners around a joint project on the Health System implications of the introduction of Anti Retroviral Therapy in poor countries; wider reach of the programme to include work in

South-East Asia; bringing together various projects in the health economics domain; preparing a resource pack for practitioners and policy makers on how to Mainstream HIV/AIDS in Development Sectors.

In conjunction with De La Salle University in Manila, Philippines, we hosted an Asian Workshop on HIV/AIDS & STI. Academics and policy makers from China, India, Vietnam, Cambodia, Thailand and Philippines came together for a meeting held at the university and facilitated by Dave Haran. The focus was to develop a joint multi-country proposal for a study to be conducted under the auspices of the HIV/AIDS KP. The delegates committed to providing a background situation analysis for the proposal to be finalised by the group in Hanoi, January 2004.

Antonieta Medina Lara is a health economist working on the HIV/AIDS Knowledge Programme. Her projects focus on cost-benefits



analyses and quality of life, including providing co-trimoxazole to TB patients, blood screening methods and Antiretroviral treatment. A major study she has just commenced looks at modelling the economics of scaling up HIV prevention interventions and in particular preference elicitation methods for people living with aids in developing countries.

Photo : Child with AIDS

Insight

Voluntary Counselling and Testing for HIV: Annrita Ikahu, a VCT counsellor at Liverpool VCT Centre in Kenya describes an interview with one couple.

Esther, 24 and George, 26years old, came to the health centre in rural Thika because they were planning to get married. They wanted to have an HIV test and be counselled on marriage issues.

I did counselling and testing and asked them what would happen to their relationship and the plans they had in case one turns out to be HIV positive. The response was that they would go ahead with their plans. I prepared them for all the possible results.

I did the rapid and confirmatory tests and the results were discordant. Esther was HIV positive

and George was negative. At first I couldn't believe my eyes. I kept on rechecking to be sure. I prepared myself on how to break the news. We revisited our earlier discussion and they seemed ready for any result. I was observing the non-verbal communication between George and Esther. At first there was shock and disbelief from Esther. George was a bit relaxed and asked me to repeat the results. I reminded them of what we had said in the previous session. I knew it was difficult for them to accept the results.

Two weeks later Esther and George came for the second session. Both were eager to learn more about HIV/AIDS. George's love for Esther was beyond HIV positive, he wanted to marry her

Since we had talked about condoms we revisited the issue in depth. They had several sessions from August and the wedding was to be in December. During our last session,

I revisited the issue of having children. George maintained that children were not important in his life. Esther and George got married and continue to come for counselling. After seven months of marriage Esther isn't pregnant and says she doesn't intend to.

If you look at this couple you can really tell the love they have for one another. One unique thing about them, they have helped many others who want to get married and have an HIV test. They say if it were not for the psychological help they received at the health centre, things would have been much more difficult.

Esther still looks healthy. She hasn't gone to the hospital since she took the test. Her husband has been a close friend and he instills hope in her.

How a soap opera became a vehicle for malaria messages

“ In Britain, the BBC radio soap *The Archers* has millions of fans who become caught up in the drama of the characters' everyday lives. In the Gambia, the School has helped produce a radio soap combining stories about people in a rural village, with messages about disease prevention ”



As one of eleven members of the prestigious collaborative venture known as the Gates Malaria Partnership, the School has been closely involved in many GMP initiatives. But 2002 and 2003 have been particularly exciting years for those involved in media and health communication programmes.

The media can play an important role in supporting health interventions that aim to help people to change their lifestyle. This is the aim of a novel GMP initiative in the Gambia. Angela Dawson, Education Advisor to the GMP at the School, has recently worked with The Centre for Innovation Against Malaria (CIAM), Jayamac Productions, the public broadcaster Gambia Radio and Television Service and the Non Government Organisation Tesito in order to produce 26 episodes of the radio soap opera “Bolonghodala” (By the Riverside).

The drama is set in a fictional but typical rural Gambian village and combines stories about the struggles of ordinary people with messages about malaria prevention. This approach helps to create environments that support healthy behaviours such as bed net dipping and prompt treatment for children with fever. These actions are modelled and reinforced by characters in order to improve the acceptability of the behaviour, portraying bed net use, for example, as part of daily life.

Production took four weeks and post production five weeks. There were six script writers, fifty seven actors, two sets and six crew, including the director. A television advert and a promotional film were also made. The impact of this drama will be measured through a planned parallel net dipping programme aptly named after the lead character in the series. We also



look forward to the next series which will be made in English later this year. The Gates Malaria Partnership, funded by the Bill and Melinda Gates Foundation, undertakes research and complex capacity development work in nineteen countries, fifteen of which are in sub Saharan Africa.

During the past year, important alliances have been formed with international media organisations, African media agencies, journalists and training institutions in order to develop and implement innovative programmes that aim to inform, educate and advocate for healthy policy and practice.

These initiatives include

- A regional journalist training workshop in Tanzania;
- The establishment of an electronic discussion list for African journalists interested in health reporting;
- The development of a Diploma in Health Communication at the University of Dar es Salaam;

- The production and broadcast of a radio soap opera containing malaria messages in the Gambia;
- The establishment of an award for excellent in health journalism, and
- A planned Pan African conference on health and broadcasting in Nigeria.

Journalist training and the production of the radio drama have been the highlights of our work so far. These media initiatives focus on developing personal skills, creating supportive environments for healthy behaviours and advocating for public health policy.

The development of these skills are vital in order to ensure commitment to health reporting and professional practice. In November 2002, Angela Dawson and the Tanzanian Centre for the Enhancement of Effective Interventions Against Malaria, in partnership with the Commonwealth Broadcasting Association (CBA) and Commonwealth Print Union (CPU), ran a five day course for 50 journalists from Tanzania, Kenya, Uganda and Malawi. This workshop was successful in improving journalists' knowledge of malaria, developing professional networks and contacts in the health field as well as establishing commitment to quality health journalism.

Photo top right : Night recording of the radio soap opera.

Photo middle : Angela Dawson and a colleague examine promotional material

Dengue: a growing problem

“ *As there is no vaccine in sight for the near future the only available approach is to attack the mosquitoes* ”

Crisis in Brazil! The annual carnival in Rio was on the verge of being suspended this year because 100,000 people lay in bed with fevers, shivering, severe muscle pains and a general malaise; some developed severe bleeding and some would die. This was Dengue and in its more severe life-threatening form, Dengue Haemorrhagic Fever. Epidemic waves of dengue have arrived in many cities and towns of Latin America and Asia more and more frequently in recent years. Even in countries where a massive effort has been put into control operations, such as Cuba and Vietnam, periodic dengue outbreaks seem to be unavoidable.

Dengue is a mosquito transmitted viral disease, with two major factors explaining its transmission dynamics: the abundance of the mosquito vector and the level of immunity already in the human population (herd immunity). Increases in mosquito abundance precede epidemics, and populations that have not experienced much dengue before are more likely to suffer more. Dengue prevention and control should aim to reduce mosquito populations or raise immunity in the human population. As there is no vaccine in sight for the near future to raise immunity, the only available approach is to attack the mosquitoes.

Initially, this might appear to be easily done, as the mosquitoes that transmit dengue breed in water containers in and around houses. One simply has to convince people that they must eliminate all the small water containers in and around their houses where dengue mosquitoes breed, and accept the application of chemicals to their large water jars. But, as has been shown by the Liverpool group and others, such measures prove to be much more complex for people to incorporate into day-to-day life. New consumer friendly tools have to be developed and tested for their efficiency and acceptance.

The Liverpool based Latin American Centre for Health Studies has great experience in vector



control using insecticide treated mosquito nets and curtains (referred to as 'ITMs', or insecticide-treated materials) for control of malaria and Chagas disease. Our new project will investigate community-based control and prevention of dengue in three Latin American countries: Mexico, Venezuela, and Haiti, using ITMs. All three countries experience ongoing outbreaks of dengue, with Haiti recently reporting some of the highest levels of infection in the world. Additionally, new products to cover or treat water containers are also being investigated and initial results look promising.

In all three countries, the work is carried out with community groups in semi-urban, poor areas. Since these groups will eventually be responsible for carrying out mosquito control, we are both educating and developing the study with those who will ensure successful implementation of the findings. This research is intended to achieve a break-through in the fight against a disease that is often neglected by donors of research funds and development agencies.



Photo top : Mass impregnation of curtains for Dengue control in Venezuela.

Photo inset : The dengue vector mosquito Aedes aegypti. This mosquito bites people by day and occurs across a vast part of the globe. Dengue and the more serious form dengue haemorrhagic fever are spreading and represent a major threat to populations in many tropical countries. (Stammers/SPL.WHO)

Qualitative research – another perspective

TB treatment involves taking many drugs over a long period of time, and these drugs can have bad side effects. How do TB patients feel about this and what are the implications for their lives? Do they receive support from their families and community? What are the implications for TB control programmes? These are the sort of questions which are addressed by qualitative research methods.

Qualitative research aims to generate knowledge and information on the perceptions, understandings, concepts and practices of different groups of people. The emphasis is on generating knowledge from the perspective not only of the researchers but also of those who are being researched. Qualitative data can help to identify local needs and priorities, place issues in the context of people's lives and give direction to programme development and service provision. Qualitative research is being used more frequently to address priority research questions in tropical medicine; and there has been an increase in qualitative research protocols reviewed by the School's Ethics Committee.

The Qualitative Research and Health Working Group (QRHWG) at the School was established in 2002 with the main aim of promoting the use of qualitative research in health policy and practice. We are a multidisciplinary group, and our membership spans different research groups within the School, as well as colleagues overseas. Our website has information about members and their interests, plus activities and affiliations of the group (<http://www.liv.ac.uk/lstm/QRMweb/QRHWG.htm>).

TB is one area where Group members have been applying their qualitative research expertise. We are also involved in: Developing capacity for qualitative research in health to help researchers who are new to qualitative research or those who want to



further develop their qualitative research skills, we have produced a glossary of qualitative

research terms (accessible via the website). We have received positive feedback from students, colleagues and members of the Ethics Committee on the benefit of the glossary for helping them to understand the unfamiliar terminology and key concepts in qualitative research.

Developing conceptual approaches to assessing qualitative studies in health Although many checklists for assessing the quality of studies exist, there is debate around how best to ensure quality assurance in qualitative research. We have developed specific criteria for appraising published qualitative studies which Bertha Nhlema used in a World Health Organization-commissioned review of evidence about the relationship between TB and poverty. We are exploring ways to use our criteria to assess qualitative research relevant to systematic reviews produced by the Cochrane Infectious Diseases Group (which has its editorial base at the School).

We are affiliated to the International Institute for Qualitative Methodology, based at the University of Alberta, Canada. The Institute aims to facilitate the development of qualitative research methods across a wide variety of academic disciplines. The Institute has an

extensive membership, with co-operating sites worldwide. In addition, members of the Group were recently involved in a national consultation with the Economic and Social Research Council on UK qualitative researchers' resource needs and access to funding.

Browse our website to read more about the application of qualitative methods to health research!

An exciting year for mosquito research

“*The School is one of the world's leading centres for vector research and aims to play a major role in driving the field forward...*”

The Vector Research Group consists of approximately 50 staff and research students working on the biology and control of arthropods that transmit some of the most important tropical diseases. Mosquitoes are very much the main focus of the group, and major topics currently under investigation include the molecular and population biology of insecticide resistance / insecticide resistance management; population / evolutionary biology and ecology of malaria vectors; *Wolbachia* endosymbionts and their use in driving beneficial genes into populations; and mosquito learning behaviour.

Other vector groups being studied include ticks and relapsing fever, and lice. Laboratory research is complemented by field-based studies in all these areas. There are major funded overseas collaborations with Mexico, Malawi, South Africa, Kenya, Ghana, Benin, Sri Lanka, Vietnam, India, Thailand, the USA, Australia, Portugal, and an EU INCO-DEV programme between the School, Belgium, Vietnam, Laos, Thailand and Cambodia. Professor Hemingway is also co-ordinating a Medical Research Council (MRC) co-op group on new approaches to controlling mosquito-borne disease, which links laboratories in Liverpool, Cardiff, Bangor and Keele.

This has been a very exciting year for mosquito research, with the publication of the full genome sequence of the major malaria vector *Anopheles gambiae*. Three of the VRG academic staff were involved in the set of publications on this theme in the journal *Science*, and are part of current efforts to sequence the genomes of several other important mosquito species. The group will also be hosting the UK node of an international 'mosquito microarray consortium', providing an open-access facility for very powerful experiments on gene expression in *Anopheles gambiae* and the dengue and yellow fever vector *Aedes aegypti*. This year the group has also secured major funding from NIH for its work on malaria vector control in South and East Africa, linking closely with the control programmes, scientists from disease endemic countries (DEC) and collaborating US laboratories. Other important research areas, in which the Vector Research Group is growing or is keen to expand include insecticide resistance

management and the integration of Geographical Information Systems (GIS) into vector control research programmes; vector – parasite interactions; mosquito transgenic control strategies; and increasing links with epidemiologists on disease transmission studies.

The School is one of the world's leading centres for vector research and we are aiming to play a major role in driving the field forward, to take full advantage of the recent technological breakthroughs.

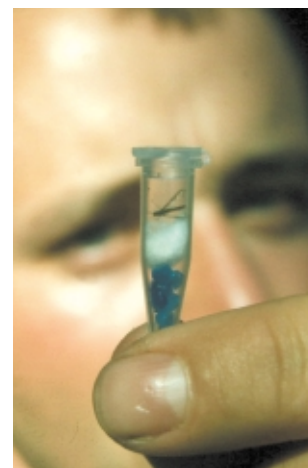


Photo : Preservation of field-collected mosquitoes so that their DNA is suitable for subsequent analysis in the laboratory is fundamental to much of the work on vectors of malaria, dengue lymphatic filariasis and other diseases carried out in the School. Here Dr. Martin Donnelly holds a tube with a malaria mosquito stored with silica gel in order to keep the specimen dry until its DNA can be extracted. Photo by - P.J.McCall



Photo : Getting research outputs into practice is an important part of the group's work. In June 2003, funded by the Gates Malaria Programme and in collaboration with CDC Atlanta and the College of Medicine Blantyre Malawi, members of the Vector Research Group delivered a very successful Malaria Vector Biology Training Course to participants working in a range of disciplines in Malawi, Zambia and Tanzania. The photo shows the course participants with John Gimnig (back left), Bill Hawley, and Bob Wirtz (back and mid rows right) of CDC, Maria Arantza Perez of the College of Medicine Blantyre (seated left) and Martin Donnelly (mid row left), Philip McCall (front right) and Themba Mzilahowa (crouching, third from left) of LSTM Vector Research Group.

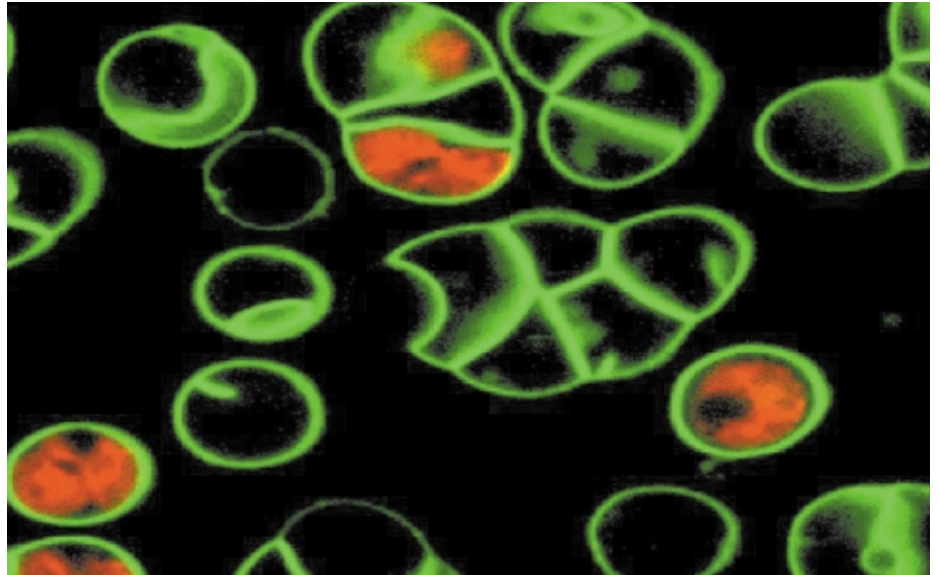
A focus on therapeutics: providing the lead in tropical drug development

“ These activities confirm the School as a dominant force in drug discovery and development which is relevant to at risk populations in the tropics ”

The Molecular and Biochemical Parasitology Research Group continues to invest significant effort into studies of the basic biology of parasitism and snake bite. Although on academic grounds these are worthy pursuits in their own right, it is the hope that we will be able to exploit some of this information to produce improvements in health that drives us on. As a consequence, the group is evolving an overarching therapeutics theme in many areas.

The Liverpool School has a long standing and highly successful history in the development and evaluation of antiparasitic drugs. At the turn of the last century scientists from the School were demonstrating the effectiveness of atoxyl for the treatment of African sleeping sickness and in the 1920's the usefulness of suramin against this disease was evaluated (this is a drug which still has clinical utility today). In the 1940's the School evaluated the antimalarial potential of mepacrine and pamaquine and, with ICI, collaborated in the development of proguanil, an antifolate antimalarial still extensively used in drug combinations today.

There have been significant developments over the past twelve months. The novel antifolate combination Lapdap (developed by scientists within the School and Liverpool University in partnership with DFID, WHO and GlaxoSmithKline) has been successfully registered with the UK authorities for human use. This is a drug, which at less than 20 pence per treatment, has the potential to make a profound impact on the treatment of malaria in Africa. Following on from this registration we have a fixed dose combination of artesunate plus Lapdap (CDA) which has entered phase II clinical trials in Malawi and a novel quinoline which is undergoing candidate selection with GSK. Continuing the malaria theme Alister Craig is working in collaboration with a European consortium to identify anti-adhesion molecules to prevent or reverse parasite sequestration.



In the area of filariasis Dr. Mark Taylor's ground breaking studies of symbiotic *Wolbachia* bacteria of filarial nematodes has directly resulted in a totally novel chemotherapeutic strategy based on targeted elimination of these essential bacteria. A clinical trial with the affordable and readily available antibiotic doxycycline against bancroftian filariasis reduced adult worm infection by 70%. This at last offers a solution to longstanding difficulties associated with treating this parasitic infection.

The School continues to make a very positive contribution to drug development programmes. In addition to filling the gap in industry expertise we have demonstrated the ability to take the drug development process from the basic science of target identification and validation to the design of lead molecules and their preclinical and clinical evaluation. Significant investment in functional genomic initiatives within the School and on campus coupled with the existing "virtual

pharmaceutical" company expertise place us in an ideal position to continue to provide the lead in tropical drug development programmes of the future. These activities confirm the School as a dominant force in drug discovery and development which is relevant to at risk populations from the tropics.

Image : Face to face with the enemy: this image, taken using confocal, fluorescence microscopy techniques, shows (in red) living P. falciparum malaria parasites inside a patient's red blood cells where they multiply. Although the parasites can be found in other human organs, such as the liver, it is when they are in the red blood cells that they are at their most vulnerable to attack by the sort of anti-malarial drugs which have been developed by School scientists.

A continuous effort to reduce mortality

“ *The emergence of HIV infection, tuberculosis and drug resistant malaria has seen a dramatic increase in maternal and child mortality in some countries, but as the problems related to child and reproductive health have increased, so have the activities and diversity of the research response* ”



The aims of the Child and Reproductive Health Group are fundamental to the reduction of maternal and child mortality in developing countries. Although some improvements in mortality indices in developing countries have occurred, the emergence of HIV infection, tuberculosis and drug resistant malaria during the 1990s has stalled further gains in mortality reduction. In some countries maternal and child mortality has dramatically increased in the last few years.

Staff and students involved with the Child and Reproductive Group primarily focus their research on these three themes with a special focus on the mother and young child. Key experience is brought to the group by its diverse composition which includes paediatricians, epidemiologists, an obstetrician and public health specialist. As the problems related to

child and reproductive health have increased over the past decade, so have the activities and diversity of the research response. Our current efforts focus on a number of intervention studies monitoring and evaluating activities, assessments of the burden of disease and evaluation of risk factors pathogenesis and outcomes for severe disease.

Current research projects (with principal investigator) include: epidemiology and improved management of acute respiratory infections and diarrhoea (Dr S. Graham and Dr L.E. Cuevas); the pathogenesis, risk factors and outcome of severe anaemia in children (Dr M. Boele van Hensbroek); epidemiology of meningococcal infection (Dr L.E. Cuevas); infection risk in pregnancy and pre-term birth (Dr N. van den Broek); malaria and anaemia control in pregnancy, malaria epidemiology and adolescent health (Professor B. Brabin); tuberculosis diagnosis and management

(Dr J.B.S. Coulter and Dr L.E. Cuevas); HIV infection and infant feeding practices and childhood infectious morbidity (Dr J. Bunn); child growth and morbidity (Dr F. Verhoeff) and street children (Dr L.E. Cuevas).

This work is supported by several international collaborative grants and by committed field research teams in Africa and South America and by many academic departments and hospital staff in developing countries. The scope and demands of this research are increasing and present a sustained challenge. The group is continuously expanding its efforts to reduce morbidity and mortality amongst women and children in the developing world and is grateful for all the support it receives from colleagues and collaborators.

Photo : Malawian staff working on the severe anaemia project co-ordinated by Dr Michael Boele van Hensbroek.

Insight:

“ A literacy programme is teaching girls vital health lessons ”



A group of adolescent girls gathers under the shade of a tree in a Malawi village for lessons which carry a life saving message. They are taking part in the Adolescent Girls' Literacy Programme which teaches them literacy and numeracy so that they can read and absorb vital health advice about reproductive health, HIV prevention and provides even simpler messages about hygiene, such as washing hands before preparing food, which they can pass on to their families.

The project, which was the brainchild of former school lecturer Loretta Brabin, as a result of field work and was developed in Malawi by School colleague Angela Hogg, Senior Research Assistant, who began by cycling to three villages and simply setting up an informal "classroom" in the open with a blackboard. She then began to seek the help of Malawi women, including some who had taken the course, to become trainers in order to expand the scheme. Today the Adolescent Girls' Literacy Programme has reached more than 80 villages in a region where 70 per cent of girls have no formal school education. Supported by all members of the Tropical Paediatrics Department at the School, it is run by a Malawian team, led by Mrs Beatrice Makwesa who has been involved from the outset and all literacy workers still go to villages on bikes. It is

unique in using health messages to teach literacy and numeracy and demonstrates how one can make things happen with the least possible resources. There is good evidence to show that not only have literacy and numeracy skills improved but also the health knowledge and understanding of the adolescents taking part. For example, local workers have noticed that girls and their families wash their hands much more frequently.

The initiative has been supported by Sucoma, the sugar company of Malawi and has funding from Noraid, the Norwegian aid agency who have increased their aid to expand the project into two new areas. The programme is now managed by UNICEF Malawi in collaboration with the School's Liverpool staff and has the potential to be expanded across other regions and countries where rural illiteracy is a major problem.

Photo : The Adolescent Girls' Literacy Programme empowers girls to look after their health and welfare through teaching them to read in order that they can understand health messages which will protect them. Local people have named the project "Tsogola La Abuthu" which means "a future for girls" but the scheme is having an impact on whole villages as the girls' families pay more attention to hygiene, nutrition and keeping their homes clean

A combined expertise of benefit to British travellers and tropical patients alike

“ *Research interests of individuals within the group vary widely, ranging from clinical trials and operational research to the development of HIV vaccines* ”

The Clinical Research Group has an extensive portfolio of activity in all of the four main disciplinary areas of the School - clinical and service work in Tropical and Travel Medicine, education and training at a variety of levels, hypothesis-led and operational research in the diseases of poverty and technical assistance and consultancy.

The group includes individuals with a wide array of clinical, basic and social science skills and there are strong collaborative links with other research groups within the School. All the academics have experience of working in the Tropics and there is a wide network of collaborations with individuals and institutions in the tropics, strongly supported by efficient, friendly and helpful administrative staff. The group currently has 32 members and at any one time about 20% of the group are working abroad. The clinical research group includes the management centres for two major research programmes funded by the Department for International Development (DFID); HIV/AIDS, and EQUI-TB Knowledge Programmes, but the research interests of individuals within the group vary widely, ranging from clinical trials and operational research to the development of HIV vaccines.

The group also provides a clinical service in tropical and travel medicine, both to the local population and nationally within the UK. Consultants in Tropical Medicine and a team of specialist travel health nurses and experts in diagnostic parasitology deliver this service. They see over 8000 travellers a year at the School's busy travel clinic where travellers received 12,000 vaccinations last year and appropriate drugs for the prevention of diseases like malaria. There is a particular clinical interest in the problems of asylum seekers and torture survivors. The clinical service is closely linked to the inpatient services of the Regional Tropical and Infectious Diseases Unit at the Royal Liverpool and Broadgreen University Hospital.

The group is primarily responsible for the Diploma in Tropical Medicine and Hygiene (DTM&H), a three month course that trains doctors in all aspects of health in the Tropics. In addition, it is particularly interested in the further development of courses in Humanitarian assistance and refugee health.



Photo : Specimen diagnosis in the School's Diagnostic Laboratory

Famine may have left a legacy of diabetes

“ *The Tigray region of northern Ethiopia is a remote, arid region prone to drought and poor food supply. It was the site of the severe Ethiopian famines of the mid-1980s and local clinicians have noticed that diabetes is common in the young* ”

Recent research in northern Ethiopia, scene of some of the worst famines the world has known, strongly supports the existence in this poor area of a hitherto little known form of diabetes which is malnutrition-related.

Diabetes mellitus is common throughout the world, and is rapidly increasing in prevalence, particularly in developing countries. There are two sub-groups of diabetes, known as “type 1” and “type 2”. Type 1 diabetes tends to occur in the young, it presents dramatically, and insulin injections are needed for survival. Type 2 diabetes occurs in middle or old age, comes on insidiously, and can usually be controlled by dietary measures or tablets.

Some 40 years ago a distinct third type of diabetes was described, initially in Jamaica and Indonesia, and later in various parts of Africa and India. Patients were young and lean, with evidence of past or present malnutrition. Though they required insulin for blood glucose control, they did not need it for survival. This syndrome became known as “type 3” diabetes or “malnutrition-related diabetes mellitus” (MRDM). Over the next 3 decades however, further research suggested that MRDM may actually be type 2 diabetes occurring at an unusually young age, and the existence of true MRDM became controversial.

Recently Dr Geoff Gill of the Liverpool School of Tropical Medicine, has been re-examining the existence of MRDM in northern Ethiopia, in liaison with colleagues in Sheffield and Addis Ababa. The Tigray region of northern Ethiopia is a remote, arid region prone to drought and poor food supply. It was the site of the severe Ethiopian famines of the mid-1980s and local clinicians have noticed that diabetes is common, and that many patients have characteristics suggestive of MRDM.

This has led to a research project jointly funded by the Ethiopian Ministry of Health and the Association of Physicians of Great Britain. In

liaison with Dr Atakilt Gebrekidan of Makelle Hospital in Tigray, three visits to the Diabetic Clinic at Makelle have been made. Seventy diabetic patients have been identified with characteristics suggestive of MRDM. All are young (in their late teens or early twenties), two-thirds are male (consistent with earlier reports of MRDM), and they are very thin with evidence of poor nutrition. Due to shortages of insulin supply, many had survived prolonged periods without insulin – a feature not consistent with type 1 diabetes.

Deep frozen plasma samples were carefully transported to Addis Ababa, and then on to Liverpool. Here the samples were tested for “C-peptide” – a marker of the body’s own ability to produce insulin. This showed that many patients were able to produce some insulin themselves – explaining their ability to survive without insulin injections. Plasma samples were finally taken to the University of Birmingham where they were tested for anti-GAD and islet cell antibodies. These are markers of immune attack against the beta cells of the pancreas, and are a feature of type 1 diabetes – the results in the Ethiopian samples were all negative.

This research strongly supports the existence of malnutrition-related diabetes in this poor area of northern Ethiopia. Comparative studies are planned with a diabetic cohort from Addis Ababa, the capital of Ethiopia, where nutrition is somewhat better.



Photo : The weekly diabetic clinic at Makelle Hospital in northern Ethiopia. Many of the patients walk for up to 3 days to obtain insulin supplies here.

China, Malawi, Kenya, Nigeria... LATH'S influence in a diversity of health programmes

This has been another strong year for LATH and we are grateful to our Board and colleagues in the School who provide both advice and consultancy services. We thank Mr William Fulton who stood down as our Chairman after 5 years and welcome Mr Nick Earlam as his successor. With some of our established projects coming to completion and in light of changes in our business environment we have begun to restructure and re-position ourselves.

In China work continued on the Urban Health and Poverty Project (DFID) in partnership with Health Life Sciences Partnership (HLSP) with whom we successfully tendered for Phase 2 of the management of DFID support to Health VIII. Both programmes aim to improve access to, and quality of, health services to the poor in rural and urban provinces. We have also made good progress in our DFID programme to support the Government of China in integrating social assessment in TB Control. Helen Bromley was LATH's first recipient of a Kenneth Newell Bursary to help her gain experience in consultancy work on this project.

In Nigeria the HIV/STD Management Project was successfully completed, achieving a high DFID evaluation rating. Much credit is due to our excellent team in Nigeria who are now moving on to pastures new. DFID also contracted us to manage two smaller HIV programmes; one to strengthen Nigeria's response to the epidemic through support to Voluntary Counselling and Testing (VCT) and People Living with HIV/Aids (PLWHA) groups, the other to document lessons learnt from the projects. LATH's will oversee the dissemination of these materials. LATH is also part of the consortium that has been awarded the contract to manage the Nigeria PATHS programme (Partnerships for Transforming Health Systems). This is a seven-year, £39million DFID funded programme which started in 2002. It seeks to achieve sustainable benefits, particularly for the poor, in getting basic health services functioning effectively and making them accessible to all. LATH is responsible for



managing output 3 - better quality preventive and curative services for the common health problems. Many School staff have already been involved in this programme.

Our team in Malawi continues, through DFID support, to help the Ministry of Health Planning (MoHP) implement both the Sexual and Reproductive Health Programme and the Sector-wide Approach (SWAp) to health service delivery. We provided consultants to help design the SWAp and subsequently, with EU support, helped implement one of its early recommendations - an MoHP organisational review to help it align with SWAp ways of working.

In Mozambique our DFID work with the Ministry of Health focused on restructuring the MoH to better align with the public sector reform process, especially the SWAp. We extended our partnership with Austral Consulting (Mozambique) in a new alliance with Finnconsult to implement a Finnish Aid Programme in Health Sector support at provincial and national level, incorporating HIV/AIDS.

In Kenya we are part of the Futures Group led consortium that has successfully won phase 3 of the DFID funded HIV/AIDS Prevention and Care Programme (HAPAC) which started in April 2003.

We worked again with our partners Euro Health Group and Deloitte Touche Tohmatsu Emerging Markets to implement phase II of the Data Quality Audit of GAVI (Global Alliance for Vaccines and Immunisation) in 8 countries and won an additional contract to audit 4 more countries for 2003.

Tim Martineau has helped us break new ground in Human Resources (HR) and Health Reforms including helping strengthen DFID's support for HR through the Joint Learning Initiative on Human Resources and Development led by the Rockefeller Foundation. Other innovative work includes that by Dr Sally Theobald and Rachel Tolhurst who have successfully built on links made through LATH consultancy to organise with colleagues in Uganda a workshop which brought together senior MoH officials from 7 countries to share south/south experience in mainstreaming gender in SWAps. DFID funded the production and dissemination of a resource pack - "SWAps: Opportunities and Challenges for Gender Equity and Health".

Photo : Dr. Helen Bromley pictured on her consultancy project in China.

A decade of achievement in malaria control

“ *It is perhaps the Regional Offices which will remain as lasting legacies of the Malaria Consortium* ”

This has been a momentous year for the Malaria Consortium in a number of ways, but most significantly because it is its penultimate year as a DFID (Department for International Development) funded programme within the School and which also saw its launch as an independent NGO (Non Government Organisation).

The Consortium has received the majority of its funding from DFID throughout its ten years, but this funding has been phased out from the end of August 2003, with the closure of its UK office at the School, and finishes completely in February 2004. This seems an appropriate time to look back on the development and achievements of the Malaria Consortium since its establishment in 1994.

The Malaria Consortium was established shortly after the Ministerial Conference on Malaria in Amsterdam in 1992, when ministers of health and other senior health leaders from 65 countries endorsed the ‘world declaration on the control of malaria’ and pledged to make malaria control one of the top priorities in health care. It was the brainchild of David Molyneux and David Bradley, its purpose being to increase the ability of malaria-endemic countries to control malaria more effectively and for them to benefit from British contributions to research and global policy on malaria control.

Achievements of the Malaria Consortium over its first five years were wide and varied, and included:

- Development of district based approaches to planning for malaria control, drawing on community based approaches (the LIIMCO project in Tanzania),
- Development of an integrated policy on malaria in pregnancy in Kenya, involving malaria and reproductive health departments in the Ministry of Health,
- Design, planning and monitoring of DFID support to the World Health Organisation’s Africa Regional Office (AFRO) for malaria control and for integrated initiatives for

control of common diseases in children including malaria (IMCI),

- Setting up a collaborative training network for malaria control in nine countries in South East Asia involving planners and health workers (ACTMalaria).

Part of the Consortium’s success in its first phase is illustrated in the report of its first external evaluation in 1997: ‘The Malaria Consortium’s advocacy role, and the more ready availability of consultants, has at the least coincided with, and almost certainly contributed to, a fourfold increase in DFID spending on malaria programmes in the last three years.’

In 1998, the Malaria Consortium gained funding for a second phase, which was later extended until 2004. 1998 saw the launch of Roll Back Malaria (RBM), a global initiative in response to increased global political interest, for more effective and co-ordinated action for malaria control. The Malaria Consortium has played an important role as RBM has developed, beginning with leading the design of the WHO RBM Cabinet Project proposal to DFID worth \$48 million. Knowing that increased funding for malaria control without strengthening the performance and skills of health managers does not necessarily lead to improvements in malaria control, the Malaria Consortium emphasised the importance of human resource development (HRD) and advocated HRD as a key RBM strategy. The Malaria Consortium has also provided major contributions to several of the technical support networks set up by RBM, in particular the networks on insecticide treated nets (ITNs) and complex emergencies. The Malaria Consortium continued its close links with and support to RBM by being a key player in both the internal and external reviews of RBM, which made recommendations for RBM’s second phase, as it rolls out at country level.

The last two years has seen the Malaria Consortium reorganising and enlarging, with renewed and increased financial support from DFID, and with increased income from

consultancy and project management. Regional Offices have been established in Ghana and Uganda, covering West and East Africa respectively, and experts in policy and strategy development, human resource and institutional development, and knowledge and communications were brought in. Consultancy services were streamlined, expanded and strengthened.

It is perhaps the Regional Offices that will remain as lasting legacies of the Malaria Consortium, and which allow it to play a much more significant role in malaria control within countries and regions.

The regional offices have been hugely successful in getting the Malaria Consortium recognised as a key regional malaria partner, as illustrated by our central role in the RBM subregional secretariats in both West and East Africa. At country level the offices have provided strategic support in all areas of the national programmes but in particular in drug policy review, development and implementation. In Ghana the Malaria Consortium has taken the lead in developing IPT policy and in Uganda we have led the sensitisation campaign as part of the implementation of the new first line antimalarial drug policy. Both offices have also been instrumental in supporting the development of successful applications to the Global Fund.



Photo : Site visit to Centre de Sante de Seme Podji, Maternite, D’Agblangand in Benin.

A quest to bring fairer health care to those in need – regardless of gender

The International Health Research Group works with partners to influence health sector policies and implementation strategies in middle and low-income countries. We aim to help ensure systems are: **Equitable**, in relation to resource allocation, access and quality of care, particularly for those least advantaged; **Efficient**, in relation to financing policies, management and monitoring, to ensure quality services reaching those in need; and **Effective**, ensuring intended interventions and policies are appropriate and bring about net benefit. We work around three main areas:

Gender Equity and Health: This year Sally Theobald and Rachel Tolhurst, working with Helen Elsey and a team in Uganda, worked on policies to ensure gender was taken into account in bilateral aid programme development and implementation, and further developed their research and development activities on gender-equity analysis in relation to disease control in TB, HIV and malaria, mostly through work in Ghana, Kenya, Burkina Faso and Thailand. The expanding reach and influence has allowed them to develop further into vulnerability and poverty, with an emerging research agenda. Other recent gender equity and health research has been undertaken using qualitative methods. For example Helen Bromley has been working with homeless men in Liverpool to explore issues relating to their health; and in Guatemala and India in exploring the comparative ways in which time is used, according to gender and how this impacts on family and community health.

Health Services: Shenglan Tang completed documenting his collaborative programme of research in equity and health systems in China, and has further developed a portfolio of collaborative research with a focus on policies that ensure quality and effective service delivery, using epidemiology, health economics and health qualitative research methods; this includes human resource management and

quality of care. He has also joined the Global Health Equity Initiative funded by the Rockefeller Foundation to monitor and evaluate the affordability of health care in selected developing countries. Tim Martineau is also working on a Rockefeller Foundation programme: the Joint Learning Initiative on Human Resources for Health and Development. This has over 100 collaborators and aims to lead to specific recommendations on improving the staffing of health services. He has completed research on evaluating the impact of decentralisation on human resource management in China and South Africa and has just started a WHO-funded study on the retention of health workers in remote rural areas of Malawi and South Africa. Strategically, there is a clear direction in China, with emerging collaborations between DFID country programmes and Knowledge Programmes; and a strong focus on priorities for human resource management in the context of sector reform.

Research synthesis: This new science is developing rapidly and the collaborative programme of research with colleagues in many middle and low-income countries remains dynamic (see Effective Health Care Programme Report). The methods are also being adopted by a variety of other groups in the University: staff in the Veterinary Faculty are drawing on the methods for reviews about productivity in chickens and fish farming, and a group based at



Lancaster University are adopting methods in a pilot project to test whether the rigorous approach helps summarise qualitative research.

Liverpool leads on Cochrane Style Guide

Harriet G MacLehose (Assistant Editor of the Cochrane Infectious Diseases Group, IHRG) has helped co-ordinate a working group to develop the Cochrane Style Guide (CSG) for The Cochrane Collaboration. There are 50 editorial bases within The Cochrane Collaboration that produce systematic reviews, which are published on The Cochrane Library. Each review needs to be properly copy edited before it is published, and until the group had developed the

'Cochrane Style Guide' (CSG), there was no comprehensive guide available to help editors and reviewers apply a uniform Cochrane style. Representatives, including Reive Robb (IHRG), from the five Cochrane Review Groups based in the North West of England worked closely together to develop the CSG. And in the spirit of The Cochrane Collaboration, the group ensures the CSG is kept up-to-date by meeting regularly to update it using feedback from editors and reviewers.

Developing and implementing integrated strategies for the control of major diseases

“ Finding out who is most vulnerable to these diseases and how their vulnerability can be reduced is a key priority ”

This first full year of the DCSG's existence has been challenging, exciting and a very steep learning curve. The group has a multi-disciplinary, multi-interest membership with prime responsibilities of individuals being in the areas of administration (8), resource centres (7) academic (5) and teaching (5). The majority of the group's research and resource activities are supported by DFID including the malaria and HIV/AIDS Knowledge Programmes, the Malaria Consortium and the Lymphatic Filariasis Support Centre. The development of objectives and a strategy for the group that represented all these diverse areas of expertise and interests, and their aspirations, was a major challenge. The overall objectives of the groups, which were designed to support the School's mission statement and strategic plan, are:

- Multi-disciplinary research and capacity building with an emphasis on improving the health of poorer communities, and
- Strengthen innovative teaching within and outside LSTM and capitalise on synergies between teaching, research, and consultancy

Although much of the group's work is cross-disciplinary, group members have particular interest in the areas of malaria, HIV, filariasis and in developing and implementing integrated strategies for control of major diseases. Within the group there is particular expertise in clinical and basic laboratory sciences, community health and social science, health economics, health systems, capacity building and multi-cultural educational methods.

Examples of some of the activities that the group has been involved in over the past year include international policy development, producing a resource pack on Mainstreaming HIV/AIDS, acting as a global resource centre for information on specific diseases, and working with Ministries of Health, donor agencies and

policy makers to improve the quality of diagnosis and management of major communicable diseases. Several group members are participants in the School's Vulnerability and Health Alliance, an interdisciplinary group established in October 2001 to identify and reach groups who are particularly vulnerable to the effects of infectious diseases. Protecting vulnerable people from infectious diseases is a key principle of the United Nations Millennium Declaration and combating HIV/AIDS, malaria and other diseases is one of the eight Millennium Development Goals. Finding out who is most vulnerable to these diseases and how their vulnerability can be reduced is a key priority for the VHA.

Another major strength of the group is its expertise in a wide range of educational methods particularly in innovative educational packages for students in, or from, developing countries. The group's 'students' vary from field workers and health assistants who are taught at their home base in villages and communities,



to national programme managers, international policy makers and staff from multi-lateral funding agencies. To support these educational activities, links with the University of Liverpool's Centre for Lifelong Learning have been significantly enhanced. This brings bilateral benefits as the School gains from the University's academic educationalists and the University can utilise and build on the School's unique experiences of multi-cultural teaching.

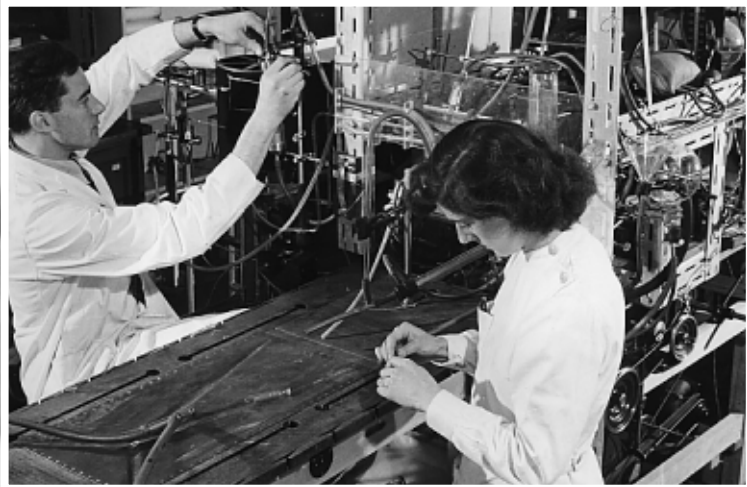
Making things happen

Martin Meremkwu, a consultant paediatrician from Nigeria, transformed his tiny office in Calabar teaching hospital into a bustling evidence-based medicine resource centre for staff and students. Over the last 5 years, he has mastered the science of systematic reviewing, contributed 8 reviews on malaria to the Cochrane Library, and inspired colleagues in Calabar and Lagos to learn about and promote evidence based approaches in their practice and teaching. In his most recent endeavour, Martin has assembled a team that includes the Director of Medical Services to develop evidence-based guidelines for malaria, hypertension, typhoid, and head injury, which are currently being implemented in Cross River State. The

strength and quality of EHCAP Nigeria's work has also helped to establish a new Institute for Tropical Diseases Research in Calabar – which means a much larger office space for the team!



Martin and his family



Unlocking the riches

“ *The School Archive is central to the study of the history of medicine in the Liverpool area and is soon to be available on line* ”

A mere fifteen years ago, the staff of the Donald Mason Library were staring in curious fascination at a new development in information management which looked as if it might have considerable potential. They were considerably emboldened when the then President of the United States articulated the concept of the “information superhighway” in 1992; and today the World Wide Web has influenced, if not transmogrified, virtually every aspect of library life. It has made the holdings of our catalogue available all over the world.

A highly significant enhancement to this achievement is about to unlock the riches of the School's knowledge and collective memory even further. The School's Archives have been retained in the expert hands of the specialist staff of the University of Liverpool Special Collections and Archives Department, which has been awarded a substantial grant under the Wellcome Trust's Research Resources in Medical History initiative for the project 'Accessing the Archive of the Liverpool School of Tropical Medicine'.

This project aims to provide the broadest possible access to resources for the study of tropical medicine by integrating access to the School's archive and complementary material through the creation of a searchable on-line finding aid and web guide. The web guide will bring together the finding aid for the archive, records for the Ronald Ross book collection, which is held as a special collection in the University Library, and letters from Mary Kingsley that are held as part of the University Archives. The grant will facilitate the employment of a qualified archivist to scrutinise



the material and prepare the finding list for digitisation, a project in which The University of Liverpool has substantial experience and skill. Dr Maureen Watry of the University of Liverpool Library explains:

“The Archive is central to the history of modern medical research and the study of the history of medicine in the Liverpool area. The significance of the archive lies in materials that document the interaction between the disciplines of tropical medicine, paediatric medicine, and nutrition studies as they converged in the work of the School. From the perspective of a particular institution the Archive has the potential to inform a wider understanding of the development of the discipline of tropical medicine against the background of the

*The School's Librarian,
Dr. Catherine Deering.*

sweeping medical and social changes of the twentieth century.”

As a complement to this endeavour, the Donald Mason Library is now participating in the development of an ongoing records management strategy that will augment the Archive in future, by preserving crucial documents, printed and digital, of the evolving work of the School. We anticipate that the web guide to the Archive will attract the interest of medical historians all over the world, and that this digital repository will be uniquely valuable.

Opposite : Main picture – The Insectary at the School (1951) with a PhD student working with mosquito larvae that were bred under tropical conditions of heat and humidity.

Far Left : 1951, Dr. W. H. H. Andrew and his assistant Mrs. Yvonne Cane set up the apparatus, which he designed for experiments on the effect of the anaemia caused by malaria in the liver.

Left : Again 1951 and in the Tropical Diseases Centre in Liverpool, merchant seamen were treated for diseases contracted in the tropics. Dr. Seaton, who practised clinical medicine at the hospital and in the School is seen examining a patient, watched by one of the nurses who gained experience in this work before going to overseas posts.

Photographs courtesy of the Central Office of Information

By improving the welfare of animals we can have a major impact human poverty

“Animals are important as companions for large numbers of people and an individual's psychological well-being often is dependant on the welfare of their animals”

The Veterinary Parasitology Research Group has several diverse interests, but the common theme behind all our activities is the improvement of health and welfare of animals and humans. Improving health and productivity of food producing animals has a major impact on alleviating poverty and improving welfare of farmers, particularly in developing countries. Moreover animals may transmit diseases to humans, either by acting as reservoirs of infection or as carriers of infection via meat or other animal products. Animals are important as companions for large numbers of people and an individual's psychological well-being often is dependant on the welfare of their animals. Finally infections in animals can provide valuable models of human disease, which allow manipulation and intervention that is not possible in humans. As an example of this we are using the cattle parasite *Onchocerca ochengi* as a model of the human parasite *O. volvulus*. *O. volvulus* causes the disease 'river blindness' in humans. By studying cattle in Cameroon that are naturally exposed to *O. ochengi*, we are able to dissect the immune response to the parasite. The parasite does not cause disease in cattle, but the immune response it elicits is analogous to that in humans infected with *O. volvulus*. As a result of this programme of work in Cameroon, we have been able to test vaccines and new and more effective drugs that can be used in the control of this devastating disease in humans.

Over the past year we have been awarded significant research grants from The Wellcome Trust, DEFRA and the animal health industry to work on the development and control of the parasitic disease neosporosis. Neosporosis is caused by the parasite *Neospora caninum*, and is the biggest reported cause of abortion in dairy cattle in this country. It is a growing problem throughout the world, especially in developing countries trying to build a dairy industry. As part of our research programme we hope to determine exactly why infected cows abort. We believe that the death of the foetus results from an immune response directed at controlling the



growth of the parasite but which ends up creating a hostile environment for the foetus. This situation is analogous to some human conditions such as spontaneous recurrent abortion. An understanding of *Neospora*-associated abortions in cattle, may help us elucidate the mechanisms of some types of abortion in humans.

Finally this year has seen the expansion of our 'TestAPet' service. Over 70,000 dogs and cats have travelled abroad with their owners since the relaxation of the rabies quarantine regulations for animals coming from certain countries and the introduction of the PET travel scheme. Some of these pets have been exposed to exotic, sometimes zoonotic parasites, whilst abroad. Our service specialises in diagnosing these infections as well as parasitic infections indigenous to the UK.

Professor Olikoye Ransome-Kuti

The School has lost a friend and strong supporter this year with the death in June of Professor Olikoye Ransome-Kuti, former Health Minister of Nigeria. An eminent paediatrician, who strove relentlessly to combat preventable childhood diseases, the Professor was once described as an "Apostle of primary healthcare and preventative medicine."

He was the first Minister to entrench a national health policy that laid emphasis on primary healthcare as a building block for preventative and curative medicine. At the time of his death, he was chairman of the National Primary Healthcare Development Agency, under the Ministry of Health.

A consultant to the World Health Organization, one of whose meetings he was attending in London when he died, Ransome-Kuti had only recently been honoured by the Oju community in Benue State for

his successful prosecution of a war against yellow fever while he was Health Minister.

Ransome-Kuti was born on December 30, 1927, at Ijebu-Ode to the family of Reverend and Mrs Ransome-Kuti of Abeokuta. He attended Abeokuta Grammar School between 1935-1944 and Higher College, Yaba before proceeding to what is now the University of Ibadan. Between 1948 and 1954, he was a student at Trinity College in Dublin. Prior to government office, he was Professor and Head of Department of Paediatrics, College of Medicine, University of Lagos from 1970-1976. He held the position of Nigeria's Minister of Health from 1985 to 1993 and was a consultant to many countries in Africa and abroad. In 1999, he was awarded the Mary Kingsley Medal which is the highest honour that the School can bestow. He is survived by his wife, Doherty Adefare Sonia and their three grown up children.

A caring presence at Pembroke Place

“ I remember one lively landlady of more than ninety years who gamely struggled through her Indonesian student's thesis to correct the English ”

When I started work in the School in the autumn of 1986 one of the School lecturers asked me why the School needed a welfare and accommodation officer. After all, there hadn't been one before. I could have referred him to my interview, when I was asked how I would cope with a female student running screaming through the corridor because she had failed her exam; how I would deal with a group of Indian ladies who attracted racial abuse while waiting for a bus; and above all, where would I locate good accommodation for students coming for only three months?

Students running screaming through the corridor haven't really been a problem. I think it helps that they can talk about their fear of failure with someone non-academic. Being a 'caring presence' for students dealing with a wide range of welfare problems is an involving part of my job. Visa extensions and council tax bills are everyday fare: it is the students I have helped support through illness, death in the family and mental breakdown that really stick in my mind, and oddly, enrich it.

Racial abuse is rare in the School, though a little less rare outside the School. It is important to listen to the pain of such an experience and do everything possible to avoid it happening again. The School's Equal Opportunities Committee has been a great support to me in my job, and a forum which has enabled me to express my views and work together with other staff. Among other things, we are currently working on is making the School more accessible to those with disabilities.

Finding suitable accommodation is still the major part of my work and it has not become easier as time has passed. For one thing, though my stock of accommodation improves year by year, students' expectations also seem to rise to keep pace. Now we have the use of 10 en-suite rooms on the top floor of a new and well-run hostel right next door to the School. This, I thought, should be beyond criticism, but that



bubble burst with a sigh when a student came to tell me her room did not have a view.

An ongoing difficulty is that many students need rooms from September to December and February to May, but few thereafter. Although new student hostels are springing up all over the city, we cannot afford to lease rooms that cannot be filled for the entire academic year. I must therefore maintain a substantial list of private landlords who are happy to take students for three months. Some particularly stand out. I remember one lively lady of more than ninety years who gamely struggled through her Indonesian student's thesis to correct the English. Another of our landladies became very interested in Afghanistan through giving bed and board to a succession of our Afghan students, one of whom would highly recommend her to the next. Yet another had a wonderful holiday visiting her former tenant in Holland. It is not uncommon when I ring up looking for accommodation for this term's batch of students, to be brought up to date with former students' lives by landladies who are still in touch with them...That's a bonus!

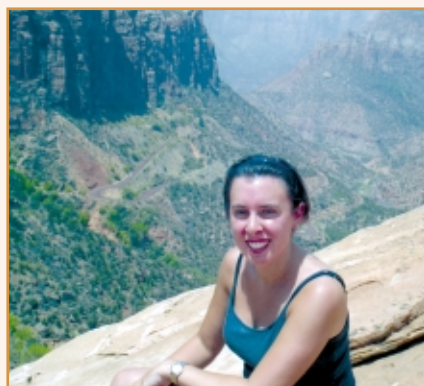
Margaret Coles

Photo : Margaret chatting with Dr. William Obed Asamoh, a new MTrop Paed student on his arrival from Ghana.

Student Profiles

Audrey Lenhart

Audrey Lenhart from USA is a second year PhD student working with the Vector Research Group, under the supervision of Dr Philip McCall and Professor Axel Kroeger. Her project is focused on the control of *Aedes aegypti* mosquitoes for dengue fever prevention in the Americas. Audrey is investigating the effects on dengue vectors of several different household interventions (all using insecticide treated materials), as well as studying pyrethroid insecticide resistance in *Aedes aegypti* populations. Her work is focused in Mexico, Venezuela and Haiti. Prior to coming to Liverpool, she obtained a Masters degree in public health from Emory University in Atlanta, Georgia, USA, where she worked with the Carter



Center and the Centers for Disease Control and Prevention (CDC) on a study of

lymphatic filariasis transmission in Nigeria. Audrey still works at the CDC in Atlanta researching molecular mechanisms of insecticide resistance in mosquitoes. She is also a founder and current member of the board of directors of the NGO Doctors for Global Health, which does grassroots health and human rights work in Latin America and Africa.

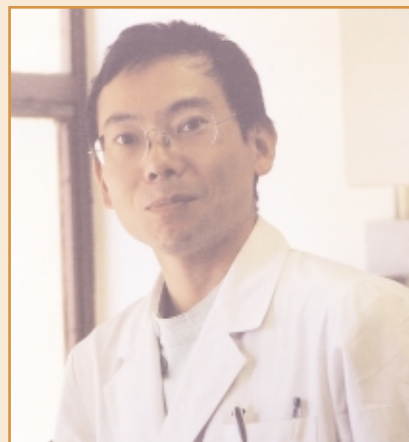
She used to be a competitive figure skater, but now most of her free time is spent either travelling with her husband or chasing around her two dogs at home! Audrey is also involved in volunteer work with Doctors for Global Health.

Satoshi Mayama

Satoshi Mayama completed his Master of Tropical Medicine in 1997, and is once again at the School studying for his PhD. Since 1988, he has worked as a dermatologist in a medical university in northern Japan. While working, he studied tropical medicine at Nagasaki University in 1992 and joined a research project for Dengue fever in Indonesia in 1993. In 1997, he went to Kampala, Uganda, his first visit to the African continent and studied the seroprevalence of Kaposi's sarcoma-associated herpes virus in children. He wanted to continue his research and returned to Liverpool in 1999. In 2001

he spent some time in Ethiopia before returning to the School to complete his research project.

Satoshi is a single man and enjoys walking in North Wales at the weekend and drinking beers (always) or Scotch whisky (sometimes!). He also likes driving in the UK especially Scotland and Wales. Last year, he visited Orkney Island in northern Scotland.



Isabella Ochola



The "Tropical Trotters"
l to r Mary Stanton (staff), Jennifer Oliver (PhD student), Amanda Ball (staff) and Isabella Ochola.

Isabella Ochola graduated in 2001 from the University of Nottingham with a BSc degree in molecular cell biology then went home to Kenya to decide what to do next. During her year at home she worked for a few weeks in the Social Services department of her local church, where she was working with children between the ages of 6 and 15 who were part of a school sponsoring scheme. Isabella then went on a work placement at the KEMRI-Wellcome Trust Nairobi Unit working on genotyping field samples for the sulphadoxine-pyrimethamine resistance genes, and gained insight into the field of malaria of which she had no prior scientific knowledge but had great interest. Whilst in Kenya, she applied for a PhD position through the Gates Malaria Partnership programme to undertake a research project in malaria.

Now in the second year of her PhD studies she is investigating the uptake of haemoglobin by endocytosis in *Plasmodium falciparum* in the Biochemical and Molecular Parasitology department under the supervision of Dr Michael Chance and Professor Steve Ward.

Isabella is currently considering what to do in the future and is keen to get involved in health programmes or possibly continue in a similar sort of research .

She loves playing team sports, learning languages, travelling and has recently been persuaded by three friends to become a keen runner."

Building on our capacity to respond to major needs

“ Training in the complex field of humanitarian assistance and the plight of refugee doctors desperately wanting to apply their skills in medicine in the UK are two areas in which the School is determined to make a difference ”

The last 12 months has been a busy and interesting period for learning and teaching in the School. Research student numbers remain buoyant and taught course development continues at a pace. In addition, we are looking at ways of unifying the modular structure we use for many of our courses to maximise choice for our students and increase efficiency of our teaching.

Training in the complex field of humanitarian assistance and the plight of refugee doctors desperately wanting to apply their skills in medicine in the UK are two areas in which the School is determined to make a difference.

Dr Tim O'Dempsey, a relatively new addition to the School's clinical staff, is highly motivated by the needs of those from and working in developing countries. Training looms large in his activities and he has a major role in the School's provision. He is beginning to apply some radical thinking to our oldest course, the Diploma in Tropical Medicine and Hygiene, which is now more popular than ever. He remains key to the extremely successful Diploma in Humanitarian Assistance (DHA) that involves partnerships with the University of Liverpool's Schools of Law, Politics and Communication Studies and a number of leading NGOs, to provide an intensive, multidisciplinary approach to the training of humanitarian workers from a variety of professional backgrounds.

He came to the School with experience in this area of training and, as he quite rightly states, "...One of the biggest challenges in improving the effectiveness of humanitarian interventions is to create a greater awareness and understanding of the complex issues that determine the evolution of humanitarian crises.we need to be able to appreciate the problem from many different perspectives and be aware of every significant opportunity and constraint. Contingency planning, coordination and cooperation between governments, donors, agencies and affected populations are essential



to prevent additional loss or threat to human lives." The DHA is only the first stage dedicated to this challenge. The School plans to launch two related multidisciplinary Master programmes in 2004. The first is an MSc in Humanitarian Programme Management, in partnership with Bioforce, an NGO based in Lyon, France, and MANGO, an NGO based in Oxford, England. The second is an MSc in Refugee and Migrant Studies that will also involve collaboration with outside individuals and agencies.

Emergency situations are bringing increasing numbers of refugees into the UK, including doctors. In the last two years, nearly 900 refugee and asylum-seeking doctors have registered with the British Medical Association, including 99 in the North West. They represent an important resource for UK medicine at a time when the country is short of skilled personnel. Naturally, they want to put their training and experience in their own countries to good use in the UK, where they have had to seek refuge, often from appalling atrocities and abuse in their homelands. Through help from funds obtained from the Department of Health, Dr Pip Fisher has been working hard to develop a pioneering programme that provides a structured training route to prepare refugee

doctors for the examinations they must pass to gain entry into UK medicine. The Diploma in Medicine for the UK is unique in providing refugee doctors with a training opportunity in all the major specialities including primary care. It will be a part-time programme over 1 year that should start early in 2004. The School is seeking sponsorship of £2000 for each of the 10 students we hope to attract for the first course, hopefully from local business or industry.

Other developments, both home and overseas, are underway, but these two examples illustrate the importance the School places in training and our capacity to respond to major needs.

Photo : Dr Steve Kulimushi Birindwa is one of the Merseyside-based refugee doctors who are bidding to make a new lives for themselves in Britain. A refugee from Congo, who trained for eight years at the University of Burundi, he hopes the new course will mean that he can soon fulfil his desire to work as a doctor again. He is currently working in care homes and hospitals as a helper and says: "I want to give something back. I want to say to this country, thank you."

(Picture reproduced by kind permission of the Liverpool Daily Post and Echo)

Focusing on the prevalence of deafness – and the necessary response

Deafness and hearing impairment research in developing countries is the focus of the World Health Organization Collaborating Centre at the School. A prevalence study to determine the amount of deafness and hearing impairment, surveying 21,000 participants from Myanmar, India, Sri Lanka and Indonesia was completed and the results disseminated at meetings in Cairo, Riyadh, Geneva, Delhi and London. The final report will be published by WHO.

The Centre has helped develop a primary ear care package for developing countries, and is now drawing up guidelines for the use of ototoxic drugs in developing countries. It is also involved in the development of an ear survey form. Computer software, developed by the Centre, is now being used in studies worldwide. Nearer home the Centre has contributed to a study on malaria and deafness at the Royal Liverpool and Broadgreen University Hospital. In Kenya, the randomised controlled trial, comparing boric acid to ciprofloxacin for the treatment of chronic suppurative otitis media, is now being analysed. The results may assist evidence-based decisions in the management of this important disease.



Photo top : Medical examination at an outdoor clinic in Mocuba, Mozambique.



Photo left : Research in action: Carolyn MacFadyen organising the trial in Kenya

Getting our Message Across

One of our lecturers was travelling in Mozambique recently when he heard a familiar voice loud and clear on the BBC World Service. Dr Guy Barnish had recorded an interview about malaria only hours before leaving Britain and it had caught up with him in Africa!

In Professor David Molyneux's case, he was talking to a scientific colleague in the United States who told he how he had been driving along a freeway when he suddenly heard David's voice on the radio - speaking on the World Service about the Lymphatic Filariasis programme in which he plays such an important role.

Our experts are increasingly in demand not only by the BBC World Service but by radio, television and newspapers in this country. More and more it seems that when members of the

media need to talk to a specialist about some aspect of tropical disease - or a poisonous spider which has travelled to Britain in someone's suitcase or a pet snake which has escaped - they are turning to the School and, within reason, we try to accommodate them. This past year has seen staff appearing on Sky TV News, ITN, regional BBC TV and Granada TV. In addition, they have been interviewed frequently about different aspects of School work on national radio, including the prestigious World Tonight programme on BBC Radio Four and on the much listened to Radio Five live. They have also been invited to take part in several important BBC Science programmes.

Locally they have spoken often on Radio Merseyside - where we have been described as 'the Jewel in Liverpool's Crown' - about various School projects and achievements. Dr Nick Beeching, one of our most prolific interviewees, was broadcast on virtually every BBC local radio station in the course of one morning and is in demand regularly by many sections of the media to talk about his various areas of expertise, especially travel medicine and infectious diseases. He and other clinical staff

have recently taken part in a documentary series for BBC TV. Then there is our venom research unit - always in demand by photographers and filmmakers - perhaps too often for those who are trying to get on with some work. But their forbearance is appreciated.

We have been making our mark too through the written word, not only in the North West, where we have achieved much in terms of good publicity, but also in national newspapers and international publications.

In recent years, we have tried hard to accommodate different sections of the media, even when it has been inconvenient and time consuming for staff and when the spare time needed to do broadcasts or filming is in short supply. But happily this is beginning to pay off handsomely. We have won a reputation for wanting to talk about what we do and long may that continue. When we have so much of importance to say and so many good things to publicise, we should not be backward in coming forward.

Eileen Taylor

Staff Profiles

Jo Williams & Christine Hadley

They say first impressions count so fortunately visitors to the School are likely to be greeted in a friendly way by receptionists

Jo McWilliams or **Christine Hadley** - depending on what time of day it is. Jo worked for the Liverpool Echo Promotions department before joining the School when that department closed down. She had enjoyed every minute of that job but says working at the School is great because she enjoys meeting and greeting people from all over the world. Every day is different and interesting, says Jo who admits she has to field some peculiar inquiries from would-be travellers, "Do you give injections for seasickness?" was a recent example. Married to Barry, a mobile crane driver, for 30 years, she has two children, Claire, 24 and Andrew, 21. Away from Pembroke Place, Jo is on the fundraising committee of St Joseph's Hospice in Thornton. She enjoys doing crossword puzzles and DIY.



Originally from Newcastle, Christine Hadley came to Liverpool in 1978 and found the city so friendly that she never went away. She is well used to dealing with the public having worked in public transport on Merseyside for nearly seventeen years in roles ranging from receptionist/telephonist to assistant in a bus company information unit and rising to Secretary Administration Officer. It was after

she was made redundant that Christine first came into contact with the School. Taken on by an employment agency, she worked for many organisations including BT and Lever Industrial. She also spent 14 months as a telephonist/receptionist at Arrowe Park Hospital where she often had to deal with emergency calls and where each operator dealt with around 1,000 calls a day. Christine first arrived at the School four years ago, as a temp, covering for holidays and was favourably impressed with the friendliness of the place. So when a permanent part time job arose, she applied for it. Christine says she enjoys her work at the School, meeting students and helping clients for the travel clinic and says no two days are ever the same. Her hobbies are knitting, crochet, cooking, DIY and collecting antiques.

Chris Brooks

Chris Brooks, Financial Controller, qualified as a chartered accountant with a Liverpool firm in 1980 and spent ten years in industry working for a number of companies before entering the education sector as Financial Director of Salford College in 1992. He himself went to Quarry Bank High School in Liverpool, where his contemporaries included soccer star of the future, Liverpool's Steve Coppull and comedian Les Dennis who,

says Chris, had a talent for mimicry even then. A keen bridge player, Chris plays in the Merseyside and the Fylde bridge leagues and was a batsman for Formby Cricket Club until quite recently. He lives with his wife Dawn and children Alexandra, 17, and Lee, 14, in Ormskirk.



Louise Kelly-Hope



A period in the Australian outback convinced **Louise Kelly-Hope** that she wanted to work in public health. Now she has joined the Vector Research Group as a Post-doctorate Research Assistant from Queensland, Australia. Although Louise originally qualified as a nurse in Sydney, she became interested in public health while working in aboriginal health in remote Central Australia with her husband, William, who is a doctor. It was there they started their family of four boys (now aged ten to three years old) owned camels and went on various outback adventures. The family moved to Queensland and Louise, who had travelled widely and worked with refugees, enrolled in the Master of Tropical Health course. She subsequently undertook a PhD and her research focused

on the epidemiology of mosquito-borne arboviruses. After submitting her PhD in 2002, her interests spread to the use of geographical information systems as a tool to map disease characteristics. This was initially applied to Australian arboviruses but currently her work focuses on mapping lymphatic filariasis in West Africa and insecticide resistance in malaria vectors in South Africa and Sri Lanka. She and her family are currently living in Lymm, Cheshire. Husband William, an infectious diseases physician, has a research fellowship at the University of Manchester. One of her passions - when she has time - is black and white photography which has been exhibited.

Highlights

Mosquitoes make way for head lice in research labs

Although they are world famous for their knowledge of the malaria carrying mosquito, School scientists have been putting their expertise to use nearer home - in a study of head lice.

People tend to think that head lice are not much of a problem any more. But according to Dr Lynn McCarroll, Research Fellow at the School, they are still flourishing.

The School's work formed part of a huge survey carried out in Wales by the National Public Health Service for Wales and funded by the Welsh Assembly Government after it was revealed that head lice was the 11th most common complaint for which GPs were consulted.

Checks were carried out on 2,793 children in 31 primary schools across Wales and 231 children (8%) were found to have head lice on the day of the check - almost 1 in 10 pupils. This indicates that more than 21,000 primary school children in Wales are likely to have head lice - and this is probably a good indication of the situation nationally.

The challenge facing the School was to help pinpoint which treatments were most effective. Almost four hundred specimens of head lice were carried back to the School's laboratories where their resistance mechanism to different insecticides was studied, using techniques that have been developed for mosquitoes. These showed that head lice are just as clever at developing resistance to insecticides as their tropical friends.

"We found a lot of resistance to one of the most commonly used treatments," said Dr McCarroll.

The School hopes that its research with primary school children in Britain may help people in the Tropics.

Said Dr McCarroll: "Head lice and body lice - the latter is very common in the Tropics and transmit diseases - are very closely related. If we can find out more about the genetics of head lice, we might be able to use that information to help people in the Tropics, where body lice can carry life threatening diseases such as relapsing fever."



Health director who was once a student renews old links

Dr. Ali Mzige, the Director of Health Service in Tanzania, is pictured participating in disability management (footwashing) at the launch of the National Lymphatic Filariasis Elimination Programme in Lindi.

For Ali, who was a student on the 1984/86 Diploma in Tropical Child Health course, involvement in the National Programme has provided him with an opportunity to renew his contact with Joan Fahy. Back in 1984 Joan was the DTCH Course Secretary and is now the Programme Coordinator with the School's Lymphatic Filariasis Support Centre. Joan is delighted to have crossed paths again with a well remembered and highly regarded student. Lymphatic filariasis is endemic in 80+ countries and Tanzania was among the first of the 34 endemic countries to join the Global Programme to Eliminate Lymphatic Filariasis. Since its initial launch in 2000 on Mafia Island, the National Programme now covers 17 districts in three regions. The Ministry of Health and the current Minister, Mrs Anna Abdalla, have been extensively involved and supportive of the Programme. Since her appointment as Minister two years ago she has attended launches in two new districts, Mtwara and Lindi, has ensured that lymphatic filariasis is on the Tanzania health agenda and this year provided \$100,000 from the national health budget with a promise of further funds next year.



Photo : Ali Mzige and Joan Fahy at the launch of the Lymphatic Filariasis programme in Lindi.

School is involved in historic malaria milestone



The research of Professor Janet Hemingway and Dr Alister Craig received world attention as a result of an historic breakthrough in tropical medicine.

Both have played vital roles in international collaborations, which have contributed to describing the genomes of the *Anopheles* mosquito and of the malaria parasite, which it transmits. Their findings should speed up the control of malaria through insecticides and lead to new therapies and tools to fight a disease, which is one of the world's three big killers. Professor Hemingway, a world expert on insecticide resistance, is a member of an international consortium that has now identified the genome sequence of the *Anopheles* mosquito.

As she points out, one of the fundamental challenges facing scientists is the mosquito's ability to develop resistance to previously effective insecticides. However, knowing the genome sequence and having the greater understanding of the genetic changes associated with resistance or parasite infection should speed up ways of outwitting the insect by homing in and identifying the major genes which confer resistance and working out how they do it. This in turn will enable scientists to identify new targets for life-saving drugs and insecticides which could turn the tide in fighting what Professor Hemingway describes as a "formidable foe" - the power of evolution.

The research of colleague, Dr Alister Craig, a senior lecturer at the School in Genome Analysis and Molecular Biology, is part of an international collaboration that has sequenced the entire genome of the parasite (*Plasmodium falciparum*) which the mosquito injects when it bites humans and which is responsible for virtually all deaths from malaria. Dr Craig said: "This research will enable us to define the way that the parasite lives. By examining how those processes differ in parasites and their human hosts, we can exploit the differences in order to design therapies that will kill the parasite without harming the human".

Professor Hemingway believes the research will establish the School as a major post genomic molecular biotechnology centre in the UK, resulting in a huge growth area for the School as an international reference centre and should attract other new projects to Liverpool.

School has key role in new initiative to protect travellers

School travel experts believe that tourists going to exotic places are still not seeking enough advice about safeguarding their health. So they are happy to be one of the core partners in a new national travel centre, set up to protect the health of UK travellers.

The new initiative, known as the National Travel Health Network and Centre (NaTHNaC) is the world's first international institution created solely to protect travellers' health. It will do so by giving the best standardised and expert advice to health professionals such as GPs to pass on to their patients in order to reduce the amount of travel related illness.

It comes at a time when the number of British visits abroad is currently running at around 60 million a year and in the wake of a warning by the Chief Medical Officer of Health that global travel is a significant contributory factor in infectious global disease.

While the centre is based at University College London Hospitals NHS Trust, the other specialist staff will be based at the Liverpool School which has played a major role in setting up the centre and will form part of its network of key non-commercial experts throughout England on whom health professionals can call via a telephone advice line.



Photo : Teaming up to provide national expertise. l to r. Drs. Tom Blanchard and David Lalloo (both School), Ms Hilary Symons, Mrs. Carolyn Driver, Dr. Nick Beeching (School) and Dr. Andy Green of the Tri Services Medical Service.

Research Grants and Contracts

Dr I Bates

DfID (supplement)
'Improving the management of Malaria (Malaria Knowledge Programme)' £71,684

Royal Society of Tropical Medicine & Hygiene
'Patients with hyper-active malarial splenomegaly to document evidence of evolution into Lymphoma' £4,200

Oxford Wellcome Centre for Human Genetics
'Genetics of big spleens' £3,500

Dr P A Bates

WHO - TDR
'Testing of vaccines against visceral Leishmaniasis' £30,120

Wellcome Trust (supplement)
'New mechanisms to explain the transmission of Leishmaniasis by sandflies' £9,935

Dr T Blanchard

Royal Society
'Recombinant poxviruses expressing cholera toxin' £10,000

Professor B Brabin

Emma's Children's Hospital
'The Tropical Paediatric Programme' £30,452

European Union
'New approaches to improve coverage and compliance of antimalarial treatment for pregnant women in rural Africa' £121,286

Sefton Health Authority
'Risk profiles and prevention of asthma' £32,000

Dr J Bunn

Department of Health
'Development and implementation of a postgraduate diploma in European Medicine' £49,920

Dr A G Craig

Wellcome Trust
'Examining the influence of the ICAM-1^{low} phenotype on functional cellular responses to human malaria infection' £193,082

'Analysis of circulating and sequestered populations of *Plasmodium falciparum* in fatal paediatric malaria' £238,689

Wellcome Trust (supplement)
'DNA vaccines for carbohydrate antigen' £5,538

Dr L E Cuevas

Meningitis Research Foundation
'Environmental and epidemiological determinants of epidemic meningitis at the local level' £292,174

WHO - TDR
'Training scholarship for Dr Naher Al-Agbari' £50,000

Dr M J Donnelly & Dr P J McCall

Systemwide Initiative on Malaria & Agriculture/
International Water Management Institute
'Impact of irrigated urban agriculture on malaria transmission in cities in Ghana, West Africa' £24,080

Ford Foundation (USA)
'Gene flow and mating barriers in the *Anopheles gambiae* complex' £35,393

WHO/Ford Foundation International
'Gene flow and population structure of the malaria vector, *Anopheles gambiae*, in a region of ecological instability' £110,213

Professor P Garner

DfID 'Use of Scientific Evidence Initiative (USE-It)' £379,715

Dr G V Gill

Pfizer (UK) Pharmaceuticals Ltd
'Impact of risk factor reduction in type 1 diabetes' £15,995

Diabetes Wellness and Awareness Trust
'Hypoglycaemia and cardiac arrhythmias in type 1 diabetes' £20,000

Beatrice Laing Trust
'Studies on persisting diseases in former Far East POWs' £1,750

Blair Trust
'Studies in cholera and social disruption in England, 1832' £783

Association of Physicians
'Diabetes case development in Northern Ethiopia' £5,090

Dr G V Gill and Dr N J Beeching

Iranian Department of Health
'Factors determining hospital in-patient mortality' £89,500

Dr S M Graham and Professor M E Molyneux

Wellcome Trust
'Incidence of common infections in HIV-infected and HIV-uninfected children and benefit of cotrimoxazole prophylaxis' £267,000

Professor J Hemingway

European Union 'Monitoring insecticide resistance and mapping malaria' £64,504

Gates Malaria Partnership
'Spatial analysis of drug and insecticide resistance' £97,661

WHO
'WHO collaborative study for the establishment of diagnostic concentrations for bifenthrin and alpha-cypermethrin for resistance monitoring in malaria and dengue vectors' £959

Wellcome Trust (supplement)
'The effect of insecticide resistance on malaria vectorial capacity' £2,257

Wellcome Trust (supplement)
'GIS mapping of the movement of insecticide resistant genes through *Anopheles* population' £3,029

Wellcome Trust
'Characterisation of metabolically-based resistance in *Anopheles albimanus*' £88,170

Professor J Hemingway and Dr H Ranson

Wellcome Trust 'Positional cloning of the major genes conferring pyrethroid resistance in the malaria vectors *Anopheles gambiae* and *Anopheles funestus*' £485,937

Miss A A Hogg

Unicef (Malawi) 'Girls Literacy Project (AGLIT) by extension with Chikwawa District and replication elsewhere in Malawi' £132,482

Dr J Kemp

Equinet 7 OXFAM(UK)
'Equity in Health Sector Responses to HIV/AIDS' £2,107

Professor A Kroeger

European Community (Belgium)
'Health Sector policies in Latin America: success, failure and the challenges ahead' £18,943

Rockefeller Foundation (USA)
'Benchmarks of Fairness for Healthcare Reform in Developing Countries' £5,787

Dr D G Lalloo

Wellcome Trust (supplement)
'Primary Infection and Molecular Epidemiology of Human Herpesvirus 8' £37,704

Dr D G Lalloo and Dr N J Beeching

National Travel Health Network and Centre
'Funding for staff and activities in Liverpool' £70,025

Dr D Lalloo & Dr M Taegtmeier

Futures Group International
'Integration of HIV/AIDS prevention and care at Primary Health Care Clinic Level (Phase 1)' £68,867

Dr P J McCall and Dr M J Donnelly

Gates Malaria 'Short course in malaria vector biology for malaria endemic countries' £30,650

Dr P J McCall

Sir Halley Stewart Trust
'Novel methods for community-based control of Dengue vectors in Latin America' £12,799

Government of Saudi Arabia
'Effects of irrigation development on vector-borne disease in SW Saudi Arabia' £40,530

Wellcome Trust (supplement) 'Determining the role of memory in mosquito host selection and dispersal' £7,492

Dr L McCarroll

'Identification of the block in parasite development in insecticide resistant mosquitoes' £1,240

Professor D H Molyneux

Bill and Melinda Gates Foundation
'Task force for communications' £60,200

Task force for advocacy and fundraising £60,200

GlaxoSmithKline
'Funds for secretariat of Global Alliance for the Elimination of lymphatic filariasis' £30,100

'Funds for conducting evaluations of the impact of lymphatic filariasis elimination programmes in selected countries' £30,100

'Funds to support Global Alliance for Elimination of lymphatic filariasis 3rd Meeting' £30,100

Merck & Co.Inc
'Funds to support Global Alliance for Elimination of lymphatic filariasis 3rd Meeting' £30,100

Professor M E Molyneux

Wellcome Trust
'Infections in Malawi' £131,160

Ms B Nhlema and Dr S B Squire

Norwegian Association of Heart and Lung Patients (LHL)
'Extending services to communities (ESC) project :A community based initiative with store keepers and community leaders to improve access to advice on early treatment and referral for tuberculosis and malaria' £303,200

Dr T J D O'Dempsey

Ireland Aid
'Partnership for Postgraduate training in Public Health' £74,270

WHO
'Course of continuing medical training for Somali doctors' £3,062

Dr S P Sinkins

Association of Commonwealth Universities Award
'Genetics of *Aedes* mosquitoes' £44,100

Royal Society Visiting International Fellowship
'Cytoplasmic Incompatibility in *Culex*' £2,800

Wellcome Trust (supplement)
'Dynamics of *Wolbachia*-mediated cytoplasmic incompatibility in *Culex quinquefasciatus*' £6,392

'Speciation in the *Anopheles gambiae* complex' £2,949

'The genome sequence of *Wolbachia* from the mosquito *Culex quinquefasciatus*' £1,178

Dr S B Squire

WHO - Global STOP-TB Partnership
'Facilitating Action on TB & Poverty' £32,000

UN Millennium Project
'Improving Equity in TB Control-the case of Private-Public Mix' £5,945

DfID
'TB & Poverty' £88,084

Dr M J Taylor

European Union
'Antibiotic targeting of *Wolbachia* endosymbiotic bacteria as a new approach to the treatment of filarial infection and disease' £141,356

Wellcome Trust (supplement)
'*Wolbachia* endosymbionts in filarial immunity and disease' £110,812

'The interaction of *Wolbachia* bacteria with mammalian cells' £7,492

Dr S Theobald

University of Liberty and Freedom (ULB) Belgium
'A Review of Qualitative Process Evaluation in TB control' £7,170

Professor A J Trees

DEFRA (supplement)
'Bovine Neosporosis: Development of Evidence Based Control Strategies' £11,000

Pet Plan Charitable (supplement)
'Vector borne diseases of dogs and cats in Europe exotic to Britain' £1,800

Professor A J Trees and Dr D J L Williams

Novartis Animal Vaccines Ltd
'Vaccination against *Neospora*-associated abortion in cattle' £117,520

Professor S A Ward

GlaxoSmithKline
'Pharmacokinetics of CDA' £52,000

'Inhibition Kinetic Studies with Dihydrofolate Reductase inhibitors' £35,000

Medicines for Malaria Venture (supplement)
'Therapy for uncomplicated malaria available for commercialisation based upon the development of isoquine' £50,000

Wellcome Trust
'pH regulation on the intracellular malaria parasite' £17,300

WHO
'A proteomic definition of aminquinoline action and resistance' £6,198

Dr D J L Williams

Novartis Animal Vaccines Ltd (supplement)
'*Neospora*-associated abortion in cattle' £61,020

Wellcome Trust (supplement)
'Protective type 1 helper T cell responses by *Neospora caninum* infection are detrimental to the maintenance of pregnancy in cattle' £7,942

SHARED AWARDS**Professor B J Brabin**

WOTRO(Dutch Research Council)
'The role of zinc and other micronutrients in the actiology and pathogenesis of malaria'

Shared with Professor C West and Dr H Verhoeff, Department of Human Nutrition, and Epidemiology, Wageningen Agricultural University, The Netherlands. £191,879

European Union
'New approaches to improve the coverage and compliance of antimalarial treatment for pregnant women in rural Africa'

Shared with Professor U D'Alessandro, Prince Leopold Institute of Tropical Medicine, Antwerp, Belgium and partners in Burkino Faso and Malawi. £589,150

Dr N van den Broek

Wellcome Trust
'Prevention of infection related prematurity in Malawi'

Shared with Dr J P Neilson, Department of Obstetrics and Gynaecology, University of Liverpool. £317,940

Dr H Bromley

Shell Foundation
'Standard Monitoring Package for Household Energy and Health Field Projects'

Shared with Professor Kirk Smith, University of California, Berkeley and Dr Nigel Bruce, Department of Public Health, University of Liverpool. £128,654

Dr L E Cuevas

British Council
'Research strengthening link with IMIP, Recife, Brazil'

Shared with IMIP, Recife, Brazil £15,000

University of Sergipe Research Support Fund 'Validation of the bleach Ziehl Nielson stain in Aracajua, Brazil'

Shared with Dr L Dorea, University of Sergipe, Brazil £3,000

University of Sergipe Research Support Fund
'Risk factors for neonatal asphyxia in Aracajua, Brazil'

Shared with Dr R Q Gurgel, University of Sergipe, Brazil £3,000

Dr I J Mackenzie & Professor P Garner

Wellcome Trust(supplement)
'Treating chronic otitis media to improve healing and hearing'

Shared with Dr Paula Williamson, University of Liverpool, UK and Professor I Macharia University of Nairobi, Kenya (two joint external principal investigators) £9,420

Mr T Martineau

WHO
'Factors affecting retention of different groups of rural health workers in Malawi and South Africa'

Shared with Dr Uta Lehmann, University of the Western Cape, South Africa and Mrs Janet Kathyola, Malawi Institute of Management, Malawi £61,203

Dr Shenglan Tang

Rockefeller Foundation, USA
'Affordability Ladder Programme'

Shared with Professor Margaret Whitehead, Department of Public Health, University of Liverpool. £22,505

Professor R D G Theakston

British Heart Foundation
'The use of snake venom toxins to identify novel platelet receptors'

Shared with Dr S P Watson University of Birmingham £107,061

Professor S A Ward

Wellcome Trust
'Evaluating strategies to delay the emergence of resistance to antimalarial drugs'

Shared with Professor P Winstanley, Department of Pharmacology and Therapeutics, University of Liverpool £142,398

MMV/CDA PDT (2003-2004)
'A pivotal phase II clinical trial of CDA'

Shared with Professor P Winstanley, Department of Pharmacology and Therapeutics, University of Liverpool £250,261

Dr D J L Williams

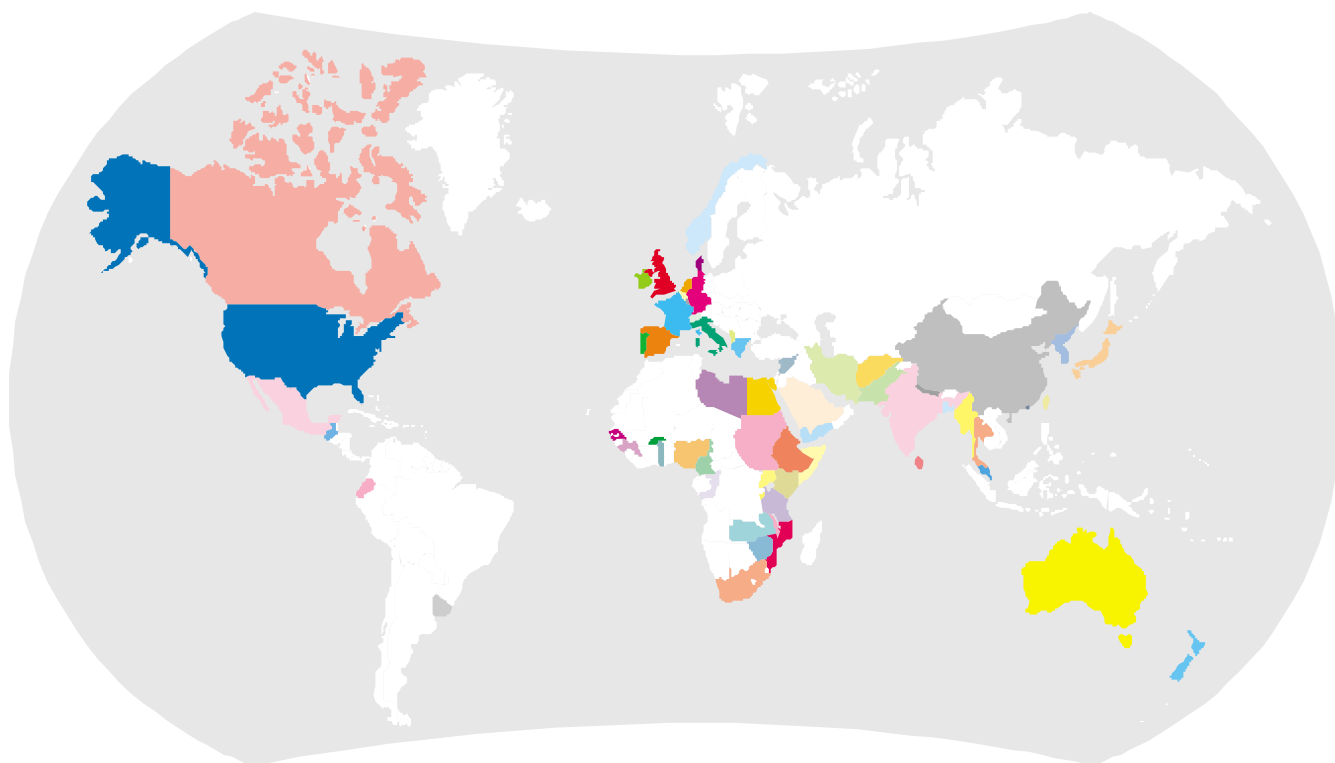
BBSRC Research Equipment Initiative
'Quantitative PCR for investigating gene expression response to challenge by environmental change, pathogen infection or neoplasia'

Shared with Professor S J Kemp, School of Biological Sciences, University of Liverpool. £33,740

Veterinary Laboratory Agency
'Development of an antibody test using bulk tank milk, for the diagnosis of *Fasciola hepatica* infection in dairy cattle in the UK'

Shared with Roger Daniel, Veterinary Laboratory Agency £6000

Student Numbers



■ Afghanistan	1	■ Guatemala	1	■ Pakistan	2
■ Albania	1	■ Guinea	1	■ Palestine	1
■ Australia	5	■ Hong Kong	1	■ Portugal	1
■ Bangladesh	1	■ India	6	■ Saudi Arabia	8
■ Belgium	1	■ Iran	9	■ Somalia	4
■ Burkina Faso	1	■ Ireland	10	■ South Africa	2
■ Burma (Myanmar)	1	■ Italy	7	■ Spain	4
■ Burundi	2	■ Japan	4	■ Sri Lanka	2
■ Cameroon	3	■ Kenya	7	■ Sudan	7
■ Canada	5	■ Korea	1	■ Switzerland	2
■ China	1	■ Libya	8	■ Syria	1
■ DR Congo	1	■ Luxembourg	1	■ Taiwan	1
■ Denmark	1	■ Malawi	14	■ Tanzania	6
■ Ecuador	1	■ Malaysia	1	■ Thailand	7
■ Egypt	1	■ Mexico	2	■ Uganda	4
■ Ethiopia	9	■ Mozambique	1	■ UK	147
■ France	2	■ Nepal	1	■ Uruguay	1
■ Gambia	2	■ Netherlands	6	■ USA	6
■ Germany	21	■ New Zealand	3	■ Yemen	7
■ Ghana	10	■ Nigeria	22	■ Zambia	1
■ Greece	1	■ Norway	5	■ Zimbabwe	1

Computer laboratory

This year has been another very busy year in many different ways. As the number of teaching hours steadily increases so does the pressure for more time for personal use as students compete for a place in the lab.

Student computing abilities range from the complete beginner to those who are using the very latest technology. The Computer Laboratory staff are always on hand to offer help and advice. During dissertation and project preparation, which is always a very stressful time we offer our students lots of TLC. As soon as the pressure is off, students show their appreciation with cards, gifts and numerous mentions in dissertations and projects, and most of all they are smiling. It is always very rewarding when a student has come to the School as a computer beginner and ends by preparing his/her own dissertation or project.

A welcome new addition, Tony Allan, joined the team in November, just in time to play an important role in the School's migration to the new Windows 2000 service, which meant some 250 machines had to be converted by June 2003. In addition to their busy schedule, both technicians have managed to incorporate important continuing education. Jim Wright has passed the first module of the Open University Diploma in IT with flying colours, and one module from Microsoft Networking systems course, while Tony has completed 2 modules of the MCSE, (Microsoft Certified Systems Engineer). All in all, a day in the Computer Laboratory is neither boring nor quiet, thanks to the diversity of our students and the continuing pace of technology. And tomorrow.....well that will be different too!



On a mission to challenge drug resistance...

Lilia Ziganshina is a Cochrane Reviewer from Russia who visited Liverpool for a month in July this year to complete her protocol on treating drug resistant tuberculosis - a major problem in her country. She graduated in medicine at the Kazan Medical Institute in 1985 and completed a PhD in Pharmacology at the same institution in 1988. She is now Head of the Department of Clinical Pharmacology and Pharmacotherapy at the Kazan State Medical Academy. Lilia has been actively involved in introducing evidence-based

pharmacology in Russia and has worked on the World Health Organization-World Bank-Uzbekistan Training Course on "Teaching Rational Pharmacology" since 1998. Her most recent project has been the completion of a new evidence-based drug reference guide, which includes 538 drug monographs based on systematic reviews and controlled clinical trials.

Lilia is married with two children.



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The Princess Royal, GCVO

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(from Sept 2002)
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Professor H Townson, MSc PhD CBiol
MIBiol
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Professor CJ Gaskell, BVSc PhD DVD
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N Kemsley BCom, AICSA

Senate of the University of Liverpool

Professor CA Hart, BSc PhD MBBS
FRCPCH FRCPATH
Professor JP Neilson, BSc MD MBChB
FRCOG
Professor M Whitehead, BA PhD MFPHM
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Vacancy

Confederation of British Industry

Vacancy

Department of Health

Vacancy

Liverpool Cotton Association

NPF Earlam

Liverpool Chamber of Commerce and Industry

Mrs H Burrage

NHS Executive North West

Dr RM Hussey, OBE MSc MBChB FFPHM
DRCOG

Non-Governmental Organisations

Oxfam – Vacancy
Save the Children Fund – Ms R Keith
(from Dec 2002)

Elected Members

Mrs AH Banner, LLM
MJP Cooke, FCA
NHF Dixon
WD Fulton, JP DL FCA
Mrs R Hawley, JP DL
ATR Macfarlane, BA FCA
Mrs D McConnell, CBE DL
Mrs S Mashiane-Talbot, SRN SCM JP
Dame Lorna Muirhead, DBE
SP Sherrard
FF Wilson

Academic & Academic related Staff 2002 - 2003

Director Professor J Hemingway	M L Chance J B S Coulter L Cuevas	Veterinary Parasitology Group C Guy C McCann (from 1.11.02) J McGarry B Makepeace R Norton A Rosbottom (from 6.1.03)	Head, Donald Mason Library C M Deering
Bursar R E Holland	I G Edwards (joint Pharmacology & Therapeutics) G V Gill (joint Department of Medicine) D Haran D Lalloo I Marshall P J Nickson T O'Dempsey P Shears (joint Med. Microbiology) S B Squire S Tang DJL Williams N Van den Broek	Molecular & Biochemical Parasitology Group H Brittan S J Chakravorty (from 1.10.02) G Egerton R Harrison C Gontijo (from 1.9.02) G D Laing H McGarry M Rogers P Sells (until 20.9.02) M Taylor M Tse (until 20.6.03) J Turner (from 10.3.03) Y Wu	Head, Teaching Laboratory C Chavasse
Professors			Annals of Tropical Medicine & Parasitology K R Wallbanks
Professor of Parasite & Vector Biology R W Ashford (until 7.4.03)			Annals of Tropical Paediatrics: International Child Health Emeritus Professor R G Hendrickse V Coulter
Professor of Tropical Paediatrics B J Brabin			Malaria Consortium R Cole J Hill E Kelly (from 7.10.02) K Yeboah-Antwi
Professor of International Health P Garner			Lymphatic Filariasis Support Centre D H Molyneux M Brown J Fahy
Professor in Tropical Medicine C Gilks (until 31.10.02)	Lecturers P A Bates P G Bray H Bromley J Critchley (from 1.1.03) A Dawson M Donnelly JP Fisher (from 6.1.03) K Grimwade A A Hassan I Hastings J E Hodgkinson J Liu (from 20.12.02) T C Martineau P J McCall H Ranson S Sinkins M Taegtmeier S Welby S Theobald	Disease Control Strategy Group B Ahmad W Flores M Hoshen J Gruber von Kerenshazy (until 30.9.02) A Medina-Lara C Mundy (until 30.9.02) M Scarborough	Liverpool Associates in Tropical Health J McCullough S Perry V Doyle S Nuttall L Silvester
Alfred Jones and Warrington Yorke Professor of Tropical Medicine M Hommel			
Middlemass Hunt Professor International Community Health A Kroeger			
Professor of Tropical Health Sciences D H Molyneux			
Professor of Clinical Tropical Medicine M E Molyneux			
Professor of Medical Biology R D G Theakston			
Selwyn-Lloyd Professor of Medical Entomology H Townson	Research Staff		
Professor of Veterinary Parasitology A J Trees	Vector Research Group M Coleman J-P David (from 1.1.03) N Hawkes SHP Karunaratne (from 1.10.02) L Kelly-Hope (from 29.10.02) A Lynd L McCarroll P Pignatelli N Seal (until 31.5.03) C Strode (from 1.11.02) A M Vaughan (from 1.1.03)	Child & Reproductive Health Group A Hogg F Verhoeff	
Walter Myers Professor of Parasitology S Ward		Clinical Research Group J W Bailey R Fletcher J Kemp G Mann (from 2.1.03) A Ramsay (from 2.12.02)	
Professor of Tropical Child Health Vacant		International Health Research Group X Bosch-Capblanch (from 1.9.02) V Lutje C MacFadyen H MacLehose A Omari L Orton (from 11.11.02) R Robb H J Smith R Tolhurst	
Reader A Craig (joint Pharmacology & Therapeutics)			
Senior Lecturers G Barnish I Bates N J Beeching T Blanchard J Bunn			Head, Electron Microscopy/Histology Unit P E Young

The school says farewell to

Professor Dick Ashford



Professor Dick Ashford retired in July following 30 years of committed and distinguished service to the School. He came to the School following a four-year period in Ethiopia studying leishmaniasis which was to remain one of his major interests during his time at the School. In subsequent years he investigated outbreaks of this disease in Libya, Afghanistan, Kenya, Sudan and several other countries. He was internationally recognised as an expert on the parasite and its vectors serving as Chairman of a World Health Organization Expert Group on the disease. He has wide-ranging interests in the natural history of the parasite and is one of the few parasitologists of his generation equally at home with investigations of the parasite and its sandfly vector.

His areas of research extended to more than one parasite. He has made major contributions to our knowledge of *Strongyloides*, which stemmed from studies on fatal infections in infants initiated while working on a 3 year secondment in Papua New Guinea. He was also the first person to describe stages of an unknown coccidian parasite in humans, which is now known as *Cyclospora cayatanensis*, an observation also originating from his time in Papua New Guinea.

In 1984 he was awarded the Chalmers Medal of the Royal Society for Tropical Medicine for contributions to the knowledge of Tropical parasitology medicine. Further recognition of his achievements was his award of a DSc in 1994 and a personal chair in 1996.

Dick was an excellent academic colleague always ready with an interesting and valuable opinion and contributing greatly to the intellectual life of the School. He enthusiastically contributed to teaching and supervised many PhD students both from home and overseas, several of whom have gone on to make important careers in parasitology.

Although Dick, I am sure, preferred to be seen as a traditional parasitologist it is interesting that his last PhD students have made important contributions to their field of study using molecular techniques and is indicative of his ability to appreciate the value of new areas of research.

His enthusiasm for natural history is also reflected in his main interest outside parasitology - he is a knowledgeable and distinguished ornithologist though immediately after retiring he seems to have spent most of his time chasing whales. We hope he has many happy years pursuing all creatures great and small.

Dr Paula Sells

Dr Paula Sells left the School in January 2003, the occasion being marked by a well-attended party in the Museum. Many of Paula's present and past colleagues attended this highly successful occasion when she was presented with an antique silver teapot among numerous other gifts, which included a card signed by all her friends.

We are all very sorry to see Paula leave the School after 25 years "in the saddle". She first arrived at the School in January 1977 working in the Department of Parasitology with Wallace Peters and later with Marcel Hommel and Roger New, completing her PhD on the immunohistochemistry of leishmaniasis in 1983. Paula then changed her research interests starting work as a Senior Research Assistant in the Alistair Reid Venom Research Unit in December 1983. Her final paper, which has recently been published, summarises some of her work on alternatives to the standard assays commonly used in snake venom research.

We all wish Paula all the very best for the future appreciating that in her case "retirement" is probably the wrong word; perhaps we should rephrase it as "alternative occupation for the young at heart"! We are sure that, in addition to her family interests, horses and trees will continue to be a major feature in her life. We are not sure whether or not she will apply for an allotment in addition! Finally, when asked if anything had been missed out of this paragraph she said simply "how much she misses everyone at the Tropical School".



Photo : Dr. Paula Sells receives best wishes from Professor David Theakston, Head of the Venom Research Unit.