Update from the MRC Chief Executive

This issue of MRC Network is themed around global health and the MRC’s work on the international stage.

I’m proud to say that findings from a major MRC-funded trial in HIV patients could help to save more lives in developing countries.

The six-year-long DART trial took place in Uganda and Zimbabwe and results were presented at a major AIDS conference in South Africa this summer.

Profiled on page 16 is the MRC’s unit in Uganda, which this year celebrates its 20th anniversary. The MRC has been instrumental in the establishment of a major global alliance to fight chronic diseases, and in August we launched a report on research ethics in China and the UK which will aid future research partnerships between the two countries. You can read about all of this on the following pages.

Closer to home, this summer also saw important developments for UK life sciences. A new Government department has been created to fund science and research: the Department for Business, Innovation and Skills (BIS). Created by merging the department for Business, Enterprise and Regulatory Reform (BERR) with the Department for Innovation, Universities and Skills (DIUS), BIS brings together all of the parts of the Government with expertise in building Britain’s future economic strengths.

July heralded the launch of new cross-government agreement for action. The Office for Life Sciences Blueprint sets out ambitious plans to encourage more industry investment in UK life sciences. The success of the blueprint will rely on strong partnerships between all those involved. For example, one of its key actions is an £18 million programme of investment to support commercial research and development, launched by the Technology Strategy Board with additional funding from the MRC and the Biotechnology and Biological Sciences Research Council. The blueprint sends a message about the importance of a vibrant and innovative life sciences industry in the UK, which the MRC wholeheartedly welcomes. We look forward to helping to put it into action.

Sir Leszek Borysiewicz
Saving lives in Africa: the MRC DART trial

Findings from a major MRC trial of HIV treatments in Africa could help save more lives in low income or resource-poor countries. The results suggest that by prioritising spending on anti-retroviral therapy (ART) rather than on expensive laboratory tests for HIV monitoring, more people could be effectively treated for no additional cost.

The six-year-long MRC Development of Anti-Retroviral Therapy in Africa (DART) study aimed to find out whether the laboratory-based strategies used to deliver ART to people with HIV infection in resource-rich countries were essential in Africa, where around 4 million people still need ART urgently and resources are limited. The results were presented at the International AIDS Society conference in Capetown in July.

When the study began in Uganda and Zimbabwe in 2003, ART for people with HIV was only just starting to become more widely available. Professor Diana Gibb, one of the study’s co-principal investigators, from the MRC Clinical Trials Unit in London, paints a bleak picture of the situation at the trial’s outset: “Back then, so many people were dying in Africa. It was the able-bodied who were dying, the people who were earning money for their families, and they were leaving behind the children and the old people. It really was an emergency. DART started around the same time as the commitments to start rolling out treatment in Africa began.”

Over 3,300 people took part in the study, none of whom had previously had ART. All the people taking part in the trial had severe or advanced HIV infection and their eligibility for receiving ART was assessed using tests such as CD4 cell count (a measure of immune system health). One group of trial patients received ART and their doctor was given the results of three-monthly blood tests to check for drug side-effects and measure CD4 cell count. People in a second group had the same ART and the same blood tests, but their doctors did not see CD4 count results and saw the results of safety tests only if they were seriously abnormal. People in both groups received free medical care and free diagnostic tests for episodes of illness throughout the trial.

Edward’s story

Edward is a teacher who runs his own school in a village in Uganda. When he began to suffer from HIV symptoms, parents took their children out of his school.

“My appearance was shocking,” says Edward. “I was not someone who you deserved to look at. Even other schools started to campaign against me, they said – you are taking your children to that gentleman? He is going to die so soon. Now where will you take your children after that man dies? So the parents had to take action and take their children.”

However, when Edward became the first person in his village to get ART as part of the DART trial, things began to look up for him.

“They changed their attitude, wondering, how have I recovered? They couldn’t believe it,” he explains. “There is nothing I did. It is only my appearance that persuaded them to bring back their children.”

Edward’s dramatic recovery prompted other people in the village to join the DART trial and there is now a strong HIV positive group in the village that is mostly made up of DART patients. Edward co-ordinates the group and they run prevention campaigns to persuade people to get tested and provide counselling.

“I am happy to do this work,” he enthuses. “Today things are different from when DART started. Now people know when they test positive that treatment is available. There is no reason for them to go through all the suffering that we went through. I don’t want people in the community to get sick like I did.”
The newly-presented findings show that routine laboratory tests to monitor the effects of ART offer little additional clinical benefit to people with HIV in Africa compared with careful clinical monitoring.

DART co-principal investigator Professor Peter Mugyenyi, of the Joint Clinical Research Centre in Uganda, explains the significance of these results: “It is estimated that two-thirds of people who need treatment for HIV in Africa currently don’t have access to ART. Thanks to DART, governments now have evidence that expensive blood tests aren’t needed routinely for HIV treatment to be successful and safe. It also means that treatment could be delivered locally as long as health care workers have the right training, support and supervision. This could make a huge difference to people who live in remote areas that are many days’ walk from the nearest hospital or laboratory.”

Dr Paula Munderi, one of the trial’s co-investigators from the MRC Unit in Entebbe adds: “The survival rate of people who took part in the trial was remarkable compared with historical data from a follow-up of similar patients at our unit before ART was available. Without treatment only about 10 per cent of HIV-infected African people like those in DART would be expected to survive for five years. In DART, 87 per cent of those receiving treatment without routine blood test monitoring were still alive and well after five years; only three percentage points less than in the group that had routine blood test monitoring.

“For health policy-makers in Africa, DART provides evidence that more people could be treated for the same amount of money by not using routine laboratory tests. This would substantially reduce the number of people dying with serious disease due to HIV infection.”

The study has also had other unexpected benefits. Taking part in DART has had such a profound effect on some people that they have become campaigners for HIV prevention. Professor James Hakim who leads the clinical centre in Harare, Zimbabwe says: “Participants in the DART trial have become activists in this area. They’ve formed support groups to help each other, and in both Uganda and Zimbabwe, they’ve been encouraging people to be tested and giving out prevention messages through drama and singing groups.”

This has inspired the making of a documentary film telling the stories of DART participants. The film was recently aired on Ugandan Television and an updated version of the film, including the trial results, was launched at the Capetown meeting. Edited highlights of the film are being shown on BBC World.

DART was sponsored and funded by the MRC, but it was the result of close collaboration between many different organisations. Scientists and health care workers from centres in Uganda, Zimbabwe and the UK worked together to run the trial. The MRC Clinical Trials Unit in London provided overall coordination and the secretariat was provided by the International HIV Clinical Trials Research Management Office at Imperial College London. Further funding for the study was provided by the UK Department for International Development and the Rockefeller Foundation, while the antiretroviral drugs given to trial participants were donated by GlaxoSmithKline, Gilead Sciences, Abbott Laboratories and Boehringer Ingelheim. These pharmaceutical companies also provided funding for some of the sub-studies that were part of the DART trial.

Sir Leszek Borysiewicz adds: “The DART trial is an example of how working in partnership can deliver excellent results by sharing expertise and resources. Along the way, this collaboration between publicly-funded researchers and industry has also helped to develop research capacity in Africa.”

Further information on the DART trial, including more stories from those who participated, is available on the MRC website at: www.mrc.ac.uk/Newspublications/News/MRC006231 and a film clip on DART can be seen on the new MRC YouTube channel at www.youtube.com/user/MRCcomms. To download a webcast of the presentations in Cape Town, go to www.iash2009.org/pag/webcasts/?sessionid=2490 or to read more about the results, visit the DART website at www.ctu.mrc.ac.uk/dart
Experts estimate that within the next decade, 388 million people across the globe will die from non-communicable diseases such as heart disease and cancer – unless renewed action is taken.

In June, the MRC and five other major health agencies formed a landmark alliance to take action on chronic, non-communicable diseases. Between them, the six funders in the newly-formed Global Alliance for Chronic Diseases manage an estimated 80 per cent of the world’s public health research funding.

Priority diseases singled out by the alliance are cardiovascular diseases (mainly heart disease and stroke), several cancers, chronic respiratory conditions such as chronic obstructive pulmonary disease (COPD), and type 2 diabetes. These diseases are largely preventable, but they have an enormous health impact and socio-economic cost which could potentially derail efforts to reduce global poverty.

The alliance’s first scientific meeting will take place in Delhi in November. The six organisations will discuss the priorities identified and decide how to take action. They intend to provide financial support for a coordinated research effort to address this growing health crisis, likely to take the form of calls for proposals.

Particular attention will be given to the needs of low and middle-income countries, whose citizens form four-fifths of all deaths from non-communicable diseases worldwide. Low income populations in more developed countries will also be targeted.

Sir Leszek Borysiewicz said: “It is essential that we work in close partnership with colleagues from developed and developing countries to address the challenges posed by the worldwide increase in non-communicable diseases. We welcome this opportunity for the UK to establish global links in this vital area of research and look forward to the future expansion of the partnership.”

The World Health Organization (WHO) has joined the alliance as an observer. This will link up the alliance’s support for implementation of the World Health Assembly-approved ‘Action Plan for the Global Strategy for Prevention and Control of Non-communicable Diseases’. Future research priorities for non-communicable disease prevention, which are likely to include mental health research, will be coordinated through working closely with the WHO.

SIX OF THE BEST: THE ALLIANCE’S FOUNDING MEMBERS

• National Health and Medical Research Council (Australia)
• Canadian Institutes of Health Research (Canada)
• Chinese Academy of Medical Sciences (China)
• The National Institutes of Health (specifically its National Heart, Lung and Blood Institute and the Fogarty International Center) (USA)
• Indian Council of Medical Research (India)
• Medical Research Council (UK)
National protein production facility planned for Harwell

The Oxford Protein Production Facility (OPPF), a structural proteomics facility currently housed in a purpose-built laboratory in Oxford, is going national.

The facility, which generates high-throughput production of proteins and protein crystals, has recently received a funding boost from the MRC and the Biotechnology and Biological Sciences Research Council to establish a national resource centre, to be known as the OPPF-UK.

The OPPF-UK will be located in the soon-to-be-completed Research Complex at Harwell in Oxfordshire, and is due to be up and running by spring 2010.

Dr Ray Owens, OPPF-UK Project Manager, explains that the original OPPF was created in response to the vital research need for a high-throughput protein production and crystallization facility in the UK. “It was the first stage in a structural proteomics programme and represented an essential stepping stone toward the practical exploitation of the wealth of information coming from the human genome sequencing projects,” he says.

“Now we want to develop the services we provide to the UK academic community by establishing a national facility which will offer free access to our technology platforms. A review board will be established to select projects most likely to benefit from the OPPF-UK, similar to the access model for synchrotron beamlines. We will also be actively encouraging researchers to visit the OPPF-UK and make use of the facilities themselves.”

Professor Dave Stuart, Life Sciences Director of Diamond, commented: “The OPPF-UK will be an important link to other national facilities on the Harwell site, including Diamond Light, and forms part of a much larger European initiative, INSTRUCT, which aims to enhance the availability of world-class infrastructure for integrated structural biology across Europe.”

To date, OPPF technologies have contributed to elucidating the structures of over 130 proteins. The OPPF-UK will help to elucidate the complex structures of human proteins and those of viruses and bacteria which target humans.

For more information on the OPPF-UK go to: www.oppf.ox.ac.uk/OPPF, or email oppf-enquiries@strubi.ox.ac.uk for further details and queries.
Connecting cancer researchers worldwide

A free online cancer research resource has been launched by the National Cancer Research Institute (NCRI), part-funded by the MRC. The Oncology Information Exchange, or ONIX (www.ncri-onix.org.uk), allows oncologists worldwide to see what research is being done by their peers, and where.

ONIX pulls together global data on cancer research across a broad spectrum of research, from genomics to clinical trials, into one searchable database. This saves scientists and clinicians time by allowing them to search through many cancer-related databases at once and track the latest developments in the field. The search results are presented in a clear, user-friendly format.

The resource will reduce duplication of effort by researchers in different locations who might formerly have been unaware of one another’s work. It will also encourage new collaborations between scientists working in complementary areas of research. The overall aim of ONIX is to speed the development of new therapies and improve prognosis and diagnosis of cancer.

Professor Sir Alex Markham has been leading the development of ONIX on behalf of the NCRI partners, which include the MRC. He said: “Researchers can use ONIX to pull out specific, relevant data from the haystack of information out there – really saving them valuable time. As a result researchers will be better connected with the latest projects, data and updates from institutions in the field of cancer. What you see now is just the beginning – the system will eventually become a one-stop resource for online cancer research.”

ONIX can be found at www.ncri-onix.org.uk

Further boost for genetics and genomics

Following high demand from the research community, the MRC has made further investment in genetics and genomics research by funding a fourth hub for high-throughput sequencing (HTS) in Oxford.

The new hub is based at the Wellcome Trust Centre for Human Genetics, and adds to the facilities of the Oxford HTS Centre, creating a resource that can be used by a wider pool of researchers. Included in the hub are:

- University of Oxford
- MRC Mammalian Genetics Unit
- MRC Functional Genomics Unit
- MRC Molecular Haematology Unit
- MRC Human Immunology Unit
- MRC Mary Lyon Centre
- NIHR Oxford Biomedical Research Centre
- Oxford Radcliffe Hospitals NHS Trust

This investment brings total MRC funding in the hubs to more than £9 million. The Oxford hub adds to those in Scotland, the North of England and the East of England, announced in the last issue of MRC Network. More information on the hubs can be found at www.mrc.ac.uk/Newspublications/News/MRC006188
China has a rapidly growing research portfolio and invests heavily in medical research. This has created new opportunities for collaboration between UK and Chinese researchers. But such partnerships must be based upon a mutual understanding of the differences and similarities between the two countries’ regulatory and ethical frameworks.

In August, a committee funded by the MRC and the Foreign and Commonwealth Office (FCO) published a report which makes recommendations on how the MRC should approach the funding of collaborative research in China. The China UK Research Ethics Committee (CURE), chaired by Professor David Warrell, visited Beijing and Shanghai to discover more about the ethics and governance of medical research in China. It carried out a detailed review focusing on medical research involving humans, in particular stem cell research, clinical trials and traditional Chinese medicine.

The report’s findings showed that there are many similarities between the frameworks for the conduct of research in China and the UK; for example guidelines on embryonic stem cell research are very similar. However, the UK has a more extensive network of regulatory authorities, inspections and overarching legislation than China.

Committee member Dr Catherine Elliott, Head of Clinical Research Support and Ethics at the MRC, said: “One of the key recommendations of the report is that the MRC and its affiliated researchers should build relationships to develop trust with Chinese researchers. As projects are funded, consideration should be given to extending understanding of ethics and governance in that area of research.”

Professor Warrell added: “The recent surge in pace, originality, breadth and volume of biomedical scientific research in China has made scientists in the west eager for greater contact. CURE was formed to find ways of coming to terms with attitudes and constraints to biomedical research in modern China and to formulate mutually compatible guidelines to facilitate agreement on ethical practice.

“We were impressed by the high calibre and generous attitude of our Chinese colleagues, who have helped make this seemingly impossible task attainable. CURE has been a fascinating experience for us all, and we’ve discovered substantial areas of common ground in our beliefs of what can be done ethically in the name of scientific research in our two countries.”

The CURE report is available for download at: www.mrc.ac.uk/Newspublications/Publications/Ethicsandguidance. Feedback on the report and its recommendations is welcomed; please send comments to: catherine.elliott@headoffice.mrc.ac.uk
The MRC goes east

Some of the MRC’s most prestigious scientists are to speak at an MRC showcase in Japan on 4 November.

The event, to be held at the British Embassy in Tokyo, will highlight the MRC’s work to the Japanese academic, pharmaceutical and biotechnology sectors and Government. By bringing together these key players, the event is intended to break new ground for partnerships with Japanese companies and institutions.

The showcase is being organised by MRC Technology and will begin with an introduction from its CEO, Dr Dave Tapolczay. Speakers expected to attend are Professor Sir Greg Winter of the MRC Laboratory of Molecular Biology, MRC Protein Phosphorylation Unit Director Professor Sir Philip Cohen, Professor Austin Smith from the University of Cambridge, MRC Cancer Cell Unit Director Professor Ashok Venkitaraman, MRC Human Reproductive Sciences Unit Director Professor Robert Millar and Dr Justin Bryans, Director of the recently-established MRC Technology Centre of Therapeutic Discovery.

The proceedings will be rounded off by a closing address from Sir Leszek Borysiewicz, followed by drinks and dinner at the British Ambassador’s residence in Tokyo.

Dr Mary Lyon takes part in ‘pioneer’ podcast across the pond

Dr Mary Lyon, the former MRC scientist who carried out pioneering research into the inactivation of the X chromosome (known as the Lyon hypothesis), has made a podcast with US science students.

Dr Lyon, who still has an office at the MRC Mammalian Genetics Unit at MRC Harwell, was interviewed by undergraduate students from Minnesota State University (MSU) as part of an audio project called Pioneers. Science students were invited to choose a pioneer from the fields of genetics and developmental biology who interested them, and then interview that scientist about their work. The subsequent podcasts were released on the MSU website, along with a student-authored editorial entitled Generations in science and learning meet in a virtual classroom.

The transatlantic recording series also included interviews with Nobel Laureate Professor James Watson and Professor Doug Melton, an eminent stem cell biologist at Harvard.
First MRC centre in Wales launched

The fight against mental and degenerative brain diseases has been boosted by the launch of a new MRC centre in Wales.

Research at the MRC Centre for Neuropsychiatric Genetics and Genomics at Cardiff University will be targeted towards harnessing the genetics revolution for research in mental disorders. The centre will tackle mental illnesses like schizophrenia and bipolar disorder, degenerative brain diseases such as Alzheimer’s, Huntington’s and Parkinson’s diseases, and developmental disorders like dyslexia.

As well as MRC support, the centre is also funded by the Welsh Assembly Government’s Wales Office of Research and Development (WORD) and the University.

The centre opened in April 2009 under the directorship of Professor Mike Owen of the University’s School of Medicine and was officially launched by Rhodri Morgan, First Minister for Wales, in July. It is the first MRC centre to open in Wales.

Professor Owen explained: “Over the next five years, we want to use technological advances to identify new genes which put people at risk of brain disorders. We then want to work out exactly how these genes affect the operation of the brain and, ultimately, start building treatments which can tackle some of these terrible diseases.

“We see public engagement work as central to our mission. Our research projects need a large amount of data from a large number of volunteers and public support is vital. However, a great many myths and taboos still surround both mental illness and genetics. We aim to break down these barriers and bring the results of our research closer to the public.”

The First Minister added: “Mental illnesses are such a high priority that the prospect of using the latest genetic research to improve the long-term chances of finding cures has to be worthy of public investment and public support.

“I know that Professor Owen has a huge reputation in the field and that is why the MRC is backing this centre and so are we through our WORD grant. I wish the research team every success.”

Declan Mulkeen, MRC Director of Research and Training, said: “We are delighted to be opening this new MRC centre in Wales, in partnership with Cardiff University and WORD, which will provide exciting new opportunities for future translational research based upon world class expertise in neuropsychiatric genetics. This investment is a key element in the MRC’s research strategy in neurodegeneration and mental health.”

For more information on the centre, go to: www.cf.ac.uk/medic/irg-neur

Rhodri Morgan, First Minister for Wales (centre) joins members of the MRC and the University to celebrate a landmark first for mental health at Cardiff.
Centre for Virus Research to be created in Glasgow

A new multidisciplinary centre of excellence in virology research is to be created in Glasgow with £28 million MRC funding over five years, in a partnership with the University of Glasgow. The university will contribute an additional £10m.

The new MRC-University of Glasgow Centre for Virus Research will create a leading virology research hub with international standing. It will combine the expertise of the existing MRC Virology Unit in Glasgow and the University of Glasgow’s Institute of Comparative Medicine, with scientists from both organisations working closely together to shape the research vision for the new centre. Staff from the NHS, Government agencies and commercial collaborators will also contribute to its research.

It is expected that the centre will be located in a new building on the university’s Garscube Campus. This would enable researchers based there to share expertise, build upon existing collaborations and strengthen the UK’s overall virus research capability. The search for a new director – to be a joint appointment between the MRC and the University of Glasgow – will begin soon.

The centre’s research will tackle questions about viruses at all levels from the fine details of virus structure to the spread of viruses in human and animal populations. As viruses continually evolve, the centre will investigate new approaches to virus detection as well as the development of antiviral drugs and vaccines.

Professor James Neil, who led the joint University of Glasgow/MRC Virology Unit bid, said: “An important feature of the new centre will be the integration of human and animal virus research. Many of the emerging threats to human health come from viruses that can jump from animals to humans, and the strategy of combining expertise across these fields is timely.”

While the recent ‘flu pandemic has brought such acute infectious diseases to the fore, it is important not to overlook other serious diseases caused by viruses such as liver failure or cancer following lifelong chronic infection.

To meet these challenges the centre will gather and build expertise on many virus types and will provide a key resource for advanced training of the next generation of scientists and clinicians in all aspects of virology.

Sir Leszek Borysiewicz said: “MRC support for the Centre for Virus Research is a strategic investment in interdisciplinary virology that will help to build capacity in virology research and train scientists to tackle the health problems posed by viruses now and in the future. It will build on a long history of MRC virology research in Glasgow and take this into a new, exciting, multidisciplinary partnership with Glasgow University.”
**INDUSTRY UPDATE**

**Industry and MRC to take joint action on immunology and inflammation research**

Senior healthcare industry figures joined senior MRC representatives in July at a meeting to explore opportunities for closer alignment on immunology and inflammation research.

Chelsea Football Club was the unusual venue for the two-day event, which aimed to identify a handful of key actions which would make a real difference to drug discovery and development in this area. The meeting was jointly hosted by Sir Leszek Borysiewicz and Dr Richard Barker, Director-General of the Association of the British Pharmaceutical Industry (ABPI). Both lent their enthusiastic support for closer engagement between the MRC and the pharmaceutical industry in this important area of research.

Speaking at the event, Dr Barker explained: “Chronic inflammatory disease has high economic and health impacts, yet it is an area of unmet need, and patient response to existing therapies is problematic. This area of research is important to the pharmaceutical industry and receives significant investment from the MRC. The workshop represents a unique setting to identify opportunities we can work together on to improve human health in this therapeutic area.”

The meeting was organised jointly by the MRC and ABPI under the auspices of the Pharma Forum, which facilitates the MRC’s interactions with industry, and attracted around 50 senior delegates from the healthcare industry and academia. The event’s main objectives were: to raise awareness of the MRC’s research portfolios in immunology and inflammation; to provide an opportunity for the pharmaceutical industry to inform future research strategy in this area; and most importantly to agree a plan to deliver a small number of opportunities that will deliver significant benefits.

Lively and informed debate addressed topics such as the need for disease-focused workshops and joint opportunities to develop biomarkers, and animal and in vitro models. Also discussed was stratified medicine – matching medicines to patients based on whether they are most likely to benefit or to have an adverse reaction in response to a particular therapy.

The ABPI and MRC are now working to define initiatives to take forward. Priorities identified by the group included ideas such as a research register and disease-focused workshops.

Ian Kimber, the MRC’s Senior Advisor on Industry Liaison, closed the event by saying: “I hope to be able to look back in a few years’ time and say that this was an historic occasion at which we strengthened the alignment between the MRC and the healthcare industry to deliver new and innovative opportunities in the fields of immunology and inflammation.”

Look out for further information on these initiatives on the MRC website soon.
Evaluating MRC research

As the MRC forges ahead with its new five-year Strategic Plan, Research Changes Lives, ongoing work is helping the MRC to assess progress with the strategy and communicate some of its most important research achievements.

The MRC evaluation programme helps to develop the evidence base for strategy development, and to improve the way in which the MRC assesses the progress, productivity and quality of the research it funds. The raw material for this assessment is the feedback gathered from MRC researchers about the output of their work.

Last year, the online Outputs Data Gathering Tool (ODGT) was launched for researchers to feed back this information to the MRC. Despite some problems with the system’s online availability, it gathered a great deal of valuable information, some of which was drawn upon in the MRC Annual Review 08/09: A day of discovery. Now, following consultation with researchers and research organisations across the UK, the evaluation programme is preparing to re-launch the system in an improved format, known as MRC e-Val.

Dr Ian Viney, who leads the evaluation programme, explains: “MRC e-Val has significantly improved functionality, and ensures that the form will be accessible to all researchers who need to complete it. The system has a simpler structure and focused questions, and where appropriate retains the information entered by researchers last year. We’ll be collecting data for MRC e-Val from the 5 October to the 27 November, although there are opportunities for researchers to contribute to user testing of MRC e-Val in September. Researchers will be asked to update the dataset, if necessary, each year.”

Updated information is available on the MRC website at: [www.mrc.ac.uk/Achievementsimpact/Outputsoutcomes](http://www.mrc.ac.uk/Achievementsimpact/Outputsoutcomes). For further information or to send comments and questions about MRC e-Val, contact [evaluation@headoffice.mrc.ac.uk](mailto:evaluation@headoffice.mrc.ac.uk). A summary of the findings from the 2008 data will be published on the MRC website soon.
The MRC Annual Review 08/09: A day of discovery was published in August. This year’s review takes readers on a journey through a typical MRC working day, profiling eight people across the UK who are involved in different areas of MRC research.

For example, nine-year-old Amie Barnes and her mum, Alison, talk about what it’s been like to be part of the Southampton Women’s Survey, a long-term study of women’s health and lifestyles which follows women through pregnancy and beyond.

Also profiled is Dr Ruth Loos, who last year discovered the second ever genetic variant associated with obesity. She speaks about her work in the exciting new field of genome-wide association, which allows scientists to analyse the genomes of hundreds of thousands of people at once to spot common genetic variations associated with disease.

The review highlights some of the best scientific achievements and discoveries made by the MRC’s talented scientists over the last year – from fundamental studies in genes, cells and molecules to translating research into treatments.

Copies of the review are available now in all MRC units, centres and institutes. Further hard copies can be obtained by emailing annualreview@headoffice.mrc.ac.uk, and it can also be downloaded at: www.mrc.ac.uk/Newspublications/Publications/AnnualReview
The MRC is piloting the use of social media to investigate the advantages it could offer in communicating with new and difficult-to-reach audiences.

Social media channels offer the benefit of sharing information about the MRC and its work on websites beyond its own. The MRC is keen to find out if social media might provide cost-effective routes to promote the work of MRC scientists, highlight their achievements, and engage with audiences who are hard to reach using more conventional communication routes. The channels featuring in the MRC pilot include:

• A twitter page updated with news from the MRC website: twitter.com/MRCcomms
• A YouTube channel where visitors can watch MRC videos and related video clips: www.youtube.com/MRCcomms
• A facility to easily share MRC website content on social media sites.

The pilot will look at the benefits offered by social media for reaching new groups of people and weigh them against the costs of managing and updating the channels.

Comments and suggestions on the new MRC channels are welcomed. Please email: social.media@headoffice.mrc.ac.uk
The MRC/UVRI Uganda Research Unit on AIDS carries out research on the prevention and management of HIV, and on understanding behavioural factors which contribute to the spread of the disease. From its picturesque setting near Uganda’s Lake Victoria in Entebbe, the unit carries out work which is integral to the global fight against HIV.

It first became known as ‘slim disease’ in Uganda – characterised by a rash, intermittent diarrhoea, dramatic weight loss, respiratory problems and eventually a debilitating death. Now, 20 years after the MRC first set foot in Uganda to help in the prevention and management of HIV/AIDS, the epidemic which swept through the country in the 1980s and 1990s has declined.

The unit was established in 1989. Unit Director Professor Heiner Grosskurth describes the situation at that time: “The country was facing a huge HIV epidemic and the proportion of sexually active adults in the population infected with the virus had exceeded 20 per cent in some subpopulations.”

The Ugandan Government realised that it had to act swiftly, and set up a research programme through a bilateral agreement with the British Government. Since then, the programme has grown and developed into a fully-fledged multi-disciplinary MRC unit. It is hosted at the Uganda Virus Research Institute (UVRI), and now has 460 staff members and two rural field stations in the Masaka district of the country. The unit also undertakes research at two collaborator institutions in Uganda’s capital, Kampala, and operates a research and care centre for women at high risk of HIV infection in one of the city’s suburbs.

The unit’s close working relationship with the Ugandan Government, the Uganda AIDS Commission and with international organisations is one of its strengths, allowing new findings to be quickly translated into policy and practice in Uganda and elsewhere in sub-Saharan Africa. The unit’s work also contributes to building capacity for HIV-related research in Africa, in particular in Uganda.

Mapping the spread of the disease

To help understand and fight the HIV epidemic, the unit’s observational studies programme of research looks at the dynamics of the epidemic and the factors that influence the clinical course of HIV infection. Since 1989, the unit has been carrying out annual surveillance of a group of rural communities in south west Uganda, mainly from its rural field station in Masaka, about 120km from Entebbe. At first, the surveillance area comprised 15 neighbouring villages but this was extended to a further 10 villages in 1999/2000. The cohort includes around 20,000 people.

Dr Billy Mayanja, Project Leader for the rural clinical cohort, describes the area and its population: “It’s a typical tropical climate, and the people living here are mainly Baganda. The majority are Catholic, but there is a significant Muslim population. Economic activity in the area is mostly farming – crops of bananas, coffee and potatoes, and also fishing and fish-selling. The 25 villages in the study form about half of the total villages in the area.”

The MRC unit is the largest health care provider in the rural study area. It provides anti-retroviral therapy (ART) to more than 1,000 patients in the Wakiso and Masaka districts and also offers large-scale voluntary HIV counselling and testing services in Entebbe, parts of Masaka and in Kampala.

Billy says that since its introduction in 2004, ART has dramatically changed the outlook for people with HIV: “Since we began giving ART, conditions which are more common in HIV patients – such as toxoplasmosis, cryptococcal meningitis and HIV
wasting syndrome – have literally disappeared. People are surviving longer, and we can monitor them for chronic illness like cardiac disease or diabetes,” he explains.

The next few years of the observational studies programme will focus on the efficacy of ART and on how to prevent HIV, since recent research suggests that there has been a rise in HIV incidence. The programme will also evaluate non-communicable diseases like diabetes, mental disorders and hypertension and how to improve the care of people with these diseases.

**Caring for HIV-infected people**

Research into improving the fate of people infected with HIV in order to keep them alive and healthy forms part of the unit’s research into HIV interventions.

The advent of ART has dramatically reduced mortality of HIV patients in industrialised countries. But introducing ART in developing countries represents major logistical and financial problems, which the unit’s research is helping to address. For example, the MRC Development of Anti-Retroviral Therapy in Africa (DART) trial (see lead story, page 2) assessed how ART can best be provided and monitored in the absence of sophisticated medical and laboratory support. Results show that routine laboratory tests to monitor the side-effects of ART offer little additional clinical benefit to HIV patients in Africa compared with careful clinical monitoring – which could enable more people to receive life-saving ART for no additional cost.

Some research carried out at the unit has produced such groundbreaking results that it has helped change international guidelines for treating HIV. A major trial conducted by the unit in the 1990s showed that an antibiotic drug called cotrimoxazole was able to cost-effectively prevent many of the debilitating secondary infections that plague HIV patients because of the damage to their immune systems caused by the virus. As a result, prophylactic provision of this drug for HIV patients has been introduced not only in Uganda, but almost everywhere in Africa.

Dr Paula Munduri, who manages the HIV care research programme at the unit, is currently helping to plan a new study of cotrimoxazole in combination with ART to see if cotrimoxazole treatment is necessary once patients’ immune systems have sufficiently recovered.

“If the results show that continued cotrimoxazole treatment is unnecessary, then this could save money on giving people extra pills they don’t need,” says Paula.
“Most importantly, it will reduce the number of pills that patients need to take when they’re already on four to eight pills per day with ART, so this could improve patient compliance with treatment.”

If funding is secured to go ahead, the trial will start in mid-2010.

**Social and behavioural factors**

Behavioural aspects of prevention and care, and the social consequences of the epidemic, are studied under the unit’s social science research programme. This is an important area of research for teasing out the true reasons why interventions for the treatment or prevention of HIV do or don’t work.

“Our work here can only be successful with major support from social science,” says Heiner: “If interventions fail we need to know if it was for biological reasons or whether it was to do with acceptance and adherence in the population – and for that you need social scientists.”

A recent study, run in parallel with the DART trial, aimed to find out whether patients on ART can be effectively treated closer to where they live. Its rationale was that by saving patients the difficulty and expense of travelling from remote villages to treatment centres, their compliance with treatment would be improved. The large-scale trial was conducted in collaboration with the Ugandan Ministry of Health, the Liverpool School of Tropical Medicine in the UK and the AIDS Support Organization (TASO) – a Ugandan non-governmental organisation.

Heiner explains: “We interviewed study participants about the amount of money they have to spend on public transport. The cash income for these people is quite low; often they have to spend 10 to 15 dollars per month on a bush taxi, and travel for several hours to collect their drugs. We explored whether they always needed to come to the centre at regular intervals to see a doctor or nurse as HIV patients do in developed countries, or whether delivery of drugs to their households or community by trained lay health workers would be as effective.”

Findings from the trial were recently presented at the International AIDS Society conference in Cape Town. They showed that the home-based model was equivalent to the facility-based model in terms of the virus’s response to treatment, mortality, CD4 cell count (a measure of immune system health) and patient adherence to treatment. While the cost of providing the treatment service was similar for both models, the cost to the patient for getting access care was considerably lower for those who were treated at home.

**Preventing transmission of HIV**

Other large-scale studies are in progress to look at how the spread of HIV from person to person can be prevented. Some of these look at the effectiveness of intervention strategies for preventing HIV infection, for example microbicides which kill the virus on contact.

Much of this work is based at the unit’s rural field station in Masaka.

Dr Anatoli Kamali and his team are carrying out a clinical trial of a microbicide called PRO-2000. Microbicides, if proven to be effective, could be a powerful weapon in preventing HIV transmission in sero-discordant relationships – where one partner is HIV positive and the other is HIV negative.

Anatoli describes how microbicides could help protect women in such relationships, who run a high risk of becoming infected: “At this relatively advanced stage of the HIV epidemic, we know that most HIV transmission in many parts of sub-Saharan Africa occurs in the ordinary population; people who are living in married partner relationships. Although condoms are a very effective way of preventing HIV transmission, married couples do not easily accept them because they are largely regarded as a prevention tool for people who engage in high risk behaviour – so microbicides would fill this gap. We expect results from this trial to be available in November 2009.”

**Basic science and the quest for a vaccine**

The ultimate weapon against HIV would be a vaccine – but, as yet, no effective HIV vaccine exists. Studies underway as part of the unit’s basic science programme are working towards developing vaccines and exploring issues around the appearance of viral resistance to anti-retroviral drugs.

The focus of the work is on trying to pinpoint which host factors and which viral factors are actually responsible for providing protection against HIV.

“There is a small group of individuals in this world who...”
seem to have natural protection against HIV infection – when exposed to the virus they don’t seem to get the infection easily, and there may be some who will never get it,” says Heiner. “If we could understand what is special about their immune system we could design a vaccine which could create such an immune response in other people.”

With access to longitudinal data and specimens from populations that have been followed for many years, the unit is particularly well-placed to investigate how these groups avoid becoming infected.

Dr Pietro Pala is helping to lead a large study of exposed, yet uninfected, people as part of the International Centre for HIV Vaccine Immunology (CHAVI), which is a large group of collaborating universities in the US and the UK linked up with African partners. Pietro and his colleagues are working with samples from a very large cohort of sero-discordant couples at the AIDS Centre in Kampala. Samples have been collected since 2007 and enrollment of patients in the study was recently completed. The trial is now in a year-long follow-up period and results are expected late in 2010.

“Finding an HIV vaccine is probably the most difficult vaccine problem ever encountered, so it’s fascinating to try to understand and solve it,” says Pietro. “Drugs only prolong life, but they don’t eradicate the infection, and they are expensive and difficult to administer. So in developing countries we really need a vaccine that can be administered once to provide long-term protection. We hope to be able to make some very important progress in this regard.”

Building research capacity

Reflecting on his six years at the helm, Heiner feels proud of how the unit has grown. Building upon the successes of his predecessor, Professor Jimmy Whitworth, Heiner and his team have helped to develop a unit of significant size and importance which is helping to boost research capacity in Uganda.

He says: “I’m proud to say that only a small handful of our staff are expatriates, and even among those we have three expatriates who are actually from other African countries. This is a measure of the huge amount of capacity-building work we’ve done over the last few years. Our unit has made a major contribution to the development of young scientists here, and many of the senior positions here are held by Ugandan scientists.”

One example of this work is a training collaboration between the UVRI and Makerere University, Uganda’s biggest university, which was recently established to boost the number of young researchers in Uganda. The two organisations are working closely together to provide training in infectious diseases and immunology. Several PhD students have already started work and an open day was held recently to encourage more young Africans to take up a career in biomedical research.

Thanks to the work of the MRC/UVRI Uganda Research Unit on AIDS and its many collaborators in Africa and across the world, the future looks hopeful for the fight against ‘slim disease’ in Uganda.
MRC scientists have their say on regulatory support services

Findings from a survey carried out by the MRC Regulatory Support Centre (RSC) show that most respondents from the MRC research community find the same regulatory issues challenging.

Many of the 142 people who took part in the survey said they were not always confident about issues such as using personal information in research, using the new Integrated Research Application System (IRAS), or understanding issues around gaining appropriate consent for participation in research. The RSC is already addressing these concerns through tools and services including the Data and Tissues Tool Kit; RSC question and answer sessions; the IRAS e-learning module; and the UK Clinical Research Collaboration Advice Service, jointly delivered with the National Institute for Health Research.

The survey revealed that those who knew about these tools and services rated them highly, but that many weren’t aware of their existence. Most respondents said they preferred remote methods of support such as practical online guidance, group and distance learning, email updates and answers to project-specific questions via email or web.

Sarah Dickson, Head of the MRC RSC, said: “We’d like to thank all those who took part. The results have increased our understanding of the issues that need addressing and how we can best help staff in our units and centres. In response to these findings, the RSC is promoting its tools and services more widely. We’re also developing training in Data Protection and Confidentiality, expanding the programme of question and answer sessions to help with project-specific issues, and distributing quarterly email updates on new and changing requirements.”

To be added to this distribution list, email rscinfo@hrsu.mrc.ac.uk

Access to all RSC tools and a full report of the findings will be available on the RSC website in the autumn: www.mrc.ac.uk/regulatorysupportcentre

Get your brain in gear

MRC research was featured on the BBC science programme Bang goes the theory, broadcast on 7 September. The programme featured online brain testing tools for assessing memory, reasoning, concentration and planning which have been developed by scientists at the MRC Cognition and Brain Sciences Unit in Cambridge.

To coincide with this programme, the MRC has launched a new booklet for the public, MRC research for lifelong health: the brain. Exploring what the brain is and how it works, the booklet highlights examples of MRC research into the brain and explains how discoveries are being used to develop new treatments and health benefits.

You can download the booklet from www.mrc.ac.uk/brain or order hard copies by emailing sarah.harrop@headoffice.mrc.ac.uk. To try out the brain tests and find out more about the science behind them, visit the dedicated website at www.cambridgebrainsciences.com
OPPORTUNITIES

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MRC Research Board and Panel Recruitment 2009

During September the MRC will be advertising for new members to serve on the following Boards and Panels from 1 April 2010:

- Infections and Immunity Board
- Molecular and Cellular Medicine Board
- Neurosciences and Mental Health Board
- Populations and Systems Medicine Board
- Training and Career Development Panel
- Methodology Research Programme Panel

For further details, including a full list of vacancies and the applications process, visit:

[www.mrc.ac.uk/Ourresearch/Boardpanelsgroups/Vacancies](http://www.mrc.ac.uk/Ourresearch/Boardpanelsgroups/Vacancies)

The closing date for applications is 5 October 2009.
IQ may partly explain the link between poverty and life expectancy

Research has shown that IQ, a measure of a person’s ability to reason and problem solve, may have a role in the differences in cardiovascular disease and life expectancy seen between people from different socio-economic backgrounds. Scientists analysed data on IQ, socio-economic status and heart disease from a group of 4,289 former soldiers in the US. They set out to pinpoint what it is about people of lower socio-economic status that confers a higher risk of cardiovascular disease and shorter lifespan. They found that IQ explained more than 20 per cent of the difference in mortality between people from disadvantaged backgrounds compared with those from more affluent backgrounds. This finding was independent of known heart disease risk factors such as smoking and obesity. The research was carried out by Wellcome Trust-funded Fellow Dr David Batty and colleagues from the MRC Social and Public Health Sciences Unit and the Centre for Cognitive Ageing and Cognitive Epidemiology at the University of Edinburgh. Dr Batty said: “Our findings suggest that measured IQ doesn’t completely account for inequalities in health, but it may strongly contribute to them. I think that public health messages on factors like diet, exercise and smoking – which are often conflicting and confusing even to knowledgeable people – could be simplified. Secondly, efforts to reduce socio-economic inequalities should continue in a broad way.”

Published online in the European Heart Journal at http://eurheartj.oxfordjournals.org, July 2009

Mosquito-proofing homes is cheap and effective

The first rigorous trial of the effects of mosquito-proofing homes in The Gambia has shown a 50 per cent reduction in malaria transmission and anaemia in African children. The research was sponsored by the MRC and carried out by Dr Matt Kirby and Professor Steve Lindsay from Durham University with support from the London School of Hygiene and Tropical Medicine and MRC Laboratories, The Gambia. The researchers tested the relative benefit of full screening of windows, doors and eave closures with that of using just a netting ceiling in the homes of more than 1,085 children living in or around the town of Farafenni. Exposure to mosquitoes indoors was assessed by fortnightly light trap collection. At the end of the malaria transmission season, the children’s haemoglobin concentration and the prevalence of malaria-causing parasites in the blood were measured. Anaemia prevalence, a measure of malaria infection, was 19 per cent among children in unscreened houses, 12.3 per cent in fully screened homes and 11.7 per cent in houses with just screened ceilings. Professor Steve Lindsay, MRC researcher and Chair in Disease Ecology at Durham University (now at the London School of Hygiene and Tropical Medicine), said: “Mosquito-proofing homes is one of the principal tools that has been associated with protection against malaria, yet it has been ignored during long-term anti-malarial drug- and insecticide-driven campaigns. Our findings show that screening homes is a cheap, simple public health intervention that can save lives.”

Published in The Lancet, September 2009
Sodium clodronate improves survival in advanced prostate cancer

Long-term findings from a clinical study in prostate cancer patients have shown that the drug oral sodium clodronate improves overall survival in men with advanced prostate cancer, but does not benefit men with localised disease. The MRC PR05 trial enrolled 311 men with advanced prostate cancer who were starting or responding to hormone therapy for bone metastases. The men received either oral sodium clodronate or placebo for up to three years. In a second trial, MRC PR04, 508 men with localised prostate cancer receiving standard care (usually treatment with radiotherapy, hormone therapy, or both) took either oral sodium clodronate or placebo for up to five years. Findings from PR05 showed a 23 per cent relative decrease in deaths in the group allocated to clodronate. In contrast, PR04 found no evidence that sodium clodronate has any benefit as a treatment to modify the effects of other treatment in men with cancer that had not spread beyond the prostate. Dr Matthew Sydes, Trial Statistician and Project Lead from the MRC Clinical Trials Unit, said: “Biphosphonate drugs like sodium clodronate may be an important weapon against prostate cancer spreading to bone. We look forward to developing this work further with STAMPEDE, a follow-on trial that will assess zoledronic acid – a newer, more potent drug from the bisphosphonate class.”

Published online in The Lancet at www.thelancet.com, August 2009

DNA-repair proteins discovered

Scientists at the MRC Protein Phosphorylation Unit at the University of Dundee have discovered a group of proteins which help repair damaged DNA in human cells, thereby preventing mutations which can lead to cancer. It is known that cells are able to recognise and repair breaks in DNA, but the mechanisms behind this process aren’t fully understood. During the repair of DNA breaks, branch-points known as Holliday junctions are produced that must be cut in order for DNA repair to be completed. A team of researchers led by Dr John Rouse has discovered a set of proteins in human cells called SLX proteins which tether together a group of enzymes. The enzymes can cut Holliday junctions during the repair of DNA – acting like a Swiss army knife with several blades. The research showed that cells which do not have the SLX proteins are unable to repair DNA breaks, leading to irreversible damage of the DNA and cell death. Dr Rouse said: “Now that we have identified these proteins and the role they play in repairing DNA we can start to develop drugs that target these processes. This could have a significant effect in cancer, primarily by helping to enhance the efficacy of drugs used in chemotherapy treatments.”

Professor Stephen O’Rahilly, an MRC Strategy Board member and Chair of the MRC Translational Research Group, has been awarded an Honorary Degree by the University of Warwick to mark his contributions to research in human metabolic disease. Professor O’Rahilly is globally recognised as a leader in research into the fundamental defects that cause human diabetes and insulin resistance. His work has led to a better understanding of both the molecular basis of diabetes and the normal biology of insulin action. His research is part-funded by programme grants from the MRC.

The Royal Society has recently honoured members of the MRC community for their contribution to science. Professor Ronald Laskey, joint Director of the MRC Cancer Cell Unit and Vice-President of the Academy of Medical Sciences, received a 2009 Royal Medal for his pivotal contributions to our understanding of the control of DNA replication and nuclear protein transport, which has led to a novel screening method for cancer diagnosis. Sir Martin Evans received the Royal Society’s Copley Medal for his seminal work on embryonic stem cells in mice, which has revolutionised the field of genetics. Sir Martin, an MRC-funded scientist and Nobel Laureate, is Director of the School of Biosciences and Professor of Mammalian Genetics at Cardiff University.

Dr Jason Chin of the Division of Protein and Nucleic Acid Chemistry at the MRC Laboratory of Molecular Biology has been chosen to present the Royal Society’s annual Francis Crick Lecture in November.

This year’s Queen’s birthday honours list recognised two MRC scientists and an MRC Council member. Professor Sheila Rodwell, Director of the MRC Centre for Nutritional Epidemiology in Cancer Prevention and Survival at the University of Cambridge, was awarded an OBE for services to healthcare. Tragically, Professor Rodwell passed away shortly after receiving the honour (see obituary page 30). By developing new biomarkers of dietary intake and disease risk, her work examined the link between diet and genetic and environmental factors in later-onset cancer through epidemiological studies.

Mr Michael Runswick received an MBE for services to the MRC Mitochondrial Biology Unit (formerly the Dunn Human Nutrition Unit) in Cambridge. Mr Runswick has worked closely with the unit’s Director, Professor Sir John Walker, for the past three decades, making key contributions to work which led to Sir John receiving the Nobel Prize for Chemistry in 1997. An experimental scientist, Mr Runswick has carried out many important experiments in biochemistry and molecular biology over his 37 years’ work for the MRC. Dr Annette Doherty, a member of the MRC’s Council, was awarded an OBE for services to the pharmaceutical industry. Dr Doherty is Senior Vice-President of Pfizer Global Research and Development at Sandwich Laboratories in Kent.

Dr Elizabeth Bradbury, an MRC Fellow at King’s College London, has been awarded the prestigious Schellenberg Prize for Research 2008, which includes prize money of £54,000. The award recognises Dr Bradbury’s achievements in the field of spinal cord injury and is awarded to early-career scientists whose research is of high impact and is likely to influence future patient treatments.

MRC National Institute for Medical Research scientist Dr Dimitris Kioussis, has been elected as a fellow of the Royal Society. Dr Kioussis is head of the newly-formed Division of Molecular Immunology. His work has made globally-recognised contributions to understanding the role of chromatin structure in lymphocyte development, and he has made seminal discoveries on how chromatin regulates gene expression. Chromatin is the complex mix of DNA, RNA and protein that makes up chromosomes.

Tony Caplin, Chairman of The North West London Hospital NHS Trust, and Professor Dame Sally Davies, Director General of Research and Development, Department of Health, have been appointed to the MRC’s Council from 1 July 2009 to 30 June 2013.
Essay on the power of the womb wins Max Perutz Prize

PhD student Jacqueline Maybin has won this year’s MRC Max Perutz Science Writing Award for her essay The best a man can’t get.

Jacqueline’s essay explores the idea that although men may be physically stronger, women’s bodies could ultimately be more powerful. The prize-winning piece focuses on the womb’s power to heal itself without scarring as women go through their menstrual cycles – a healing process unique to the female reproductive system. Greater understanding of this phenomenon could have a huge impact for both men and women, in particular, how we treat inflammation and scarring throughout the body.

Jacqueline said: “I’m delighted to have won such a prestigious award and hopefully this will encourage other students to talk and write more enthusiastically about science, and generally get people more interested in research.”

The runner-up prize went to Alistair Dennison, a student at The Institute of Biomedical Research, University of Birmingham with his essay Blind Ignorance. Three entrants were highly commended; Nicola Harris of the Northern Institute of Cancer Research at The University of Newcastle; Karen Mackenzie from the MRC Centre for Inflammation Research in Birmingham; and Alejandro Vicente-Grabovetsky of the MRC Cognition and Brain Sciences Unit in Cambridge.

The entries were judged by a distinguished panel including Lavinia Greenlaw, celebrated author; poet and Professor of Creative Writing at the University of East Anglia; Kate Wighton, science and health correspondent at The Sun; and Alok Jha, The Guardian’s science correspondent.

The awards ceremony was held on the top floor of the Gherkin building in London on 26 August. Sir Leszek Borysiewicz presented the successful entrants with their prizes – £1,000 for the winner, £500 for the runner-up and £250 each for the highly commended entrants.

Offering his congratulations, Sir Leszek said: “The Max Perutz Science Writing Award offers students an opportunity to share their work with a wider audience. The MRC is committed to supporting students to develop the skills they’ll need to communicate their work to the most important people of all – the people whose lives will ultimately be changed by their research.”

For more information on the annual Max Perutz prize see: www.mrc.ac.uk/Sciencesociety/Awards
PUBLIC ENGAGEMENT

Cheltenham Science Festival 2009

A rather wet Cheltenham welcomed the country’s fastest-growing science festival back to its Town Hall for an eighth year in June. However, the inclement weather failed to deter the thousands of visitors who dodged heavy rain storms to enjoy a diverse selection of talks, debates and hands-on activities at the five-day festival.

This year, the MRC’s theme for the Discover Zone (the family-orientated science area) was cancer. Twenty-six MRC scientists from across the UK came together to promote the MRC’s collaborative cancer research programme; showing visitors what cancer cells look like and how they develop, as well as exploring models of tumour formation and how and why cancer cells metastasize. Volunteers were kept extremely busy, with an estimated 11,000 adults and children passing through the Discover Zone during the week.

One of the participating scientists, Sarah Joseph, of the MRC Clinical Trials Unit, said: “The aspect that I most enjoyed was meeting people who were genuinely interested in science. Talking to children is always fun.”

The MRC also sponsored a series of research-related events at the festival. Vivienne Parry, broadcaster and member of the MRC’s Council, ran an interactive session called Outbreak which saw audience members voting on how to manage a deadly flu pandemic.

Meanwhile Professor Ian Deary, Director of the Centre for Cognitive Ageing and Cognitive Epidemiology at the University of Edinburgh, took a sell-out crowd through the findings of his study that explore whether childhood IQ can affect happiness, wellbeing and even survival in later life, and the various contributions to lifetime cognitive ageing.

The festival’s Development Director Steve Burgess complimented the MRC on its participation: “Without your support we would not be able to continue facilitating public science engagement. We look forward to working with you in 2010.” Let’s hope the sun shines next year.

Cambridge Darwin Festival and 800th Anniversary Garden Party

The MRC Laboratory for Molecular Biology (LMB) was behind several major discoveries that have helped us to understand Charles Darwin’s theory of natural selection, including Watson and Crick’s elucidation of DNA structure. Therefore it was fitting that the LMB helped sponsor a festival in July to mark the 200th anniversary of Darwin’s birth.

Hosted by the University of Cambridge, the festival brought together prestigious figures from science, arts and the humanities to debate and celebrate the enduring influence of Darwin’s ideas. Speakers included Sir David Attenborough, Richard Dawkins, scientific advisor to the Obama administration Harold Varmus, Lord Martin Rees and Steve Jones.

The LMB sponsored two sessions. The first, From Genomes to the Diversity of Life, explored the impact of genomic data on our understanding of the tree of life. The second session was held by a former LMB scientist Cynthia Kenyon, who spoke about her work on the genetic regulation of ageing at a debate titled What does the Future Hold?
Scientists from the LMB swung into action once again on the 18 July, setting up an educational and children’s activity at a University of Cambridge garden party held for its staff and their families.

The party, part of the university’s 800th Anniversary celebrations, included an LMB stand called DNA from Bananas which gave adults and children the chance to learn about the structure of DNA. The fact that – if stretched out – every human cell has two metres of DNA in it amazed children and adults alike. Party guests got the chance to don lab coats, gloves and goggles and extract DNA from fruit. When children taking part were asked what the extracted DNA looked like, answers included “like the froth on top of beer” or “like snot!”

Organiser Liz Madgett said: “The stand proved very popular, with over 100 visitors having a go at extracting DNA. Great fun was had by all.”

The evolution of Norman

When MRC Cancer Cell Unit group leader Dr Rebecca Fitzgerald decided to embark on a new programme of schools outreach a few years ago, she realised that taking along members of her lab would just not be enough. She needed someone whose organs she could remove too! This was the thinking behind the birth of Norman – a life-sized human torso with a number of internal organs and tissues that can be used to demonstrate a range of different concepts and procedures.

Rebecca and her research group work on oesophageal cancer and a condition called Barrett’s oesophagus, which is a major risk factor in the development of this disease. Norman is named after Norman Barrett, who first described the condition. The first incarnation of Norman was a cardboard model that could be used to show children the workings of the digestive system, but it soon became evident that a more robust resource would be required. Norman has now evolved into a visual aid that can be used to demonstrate how endoscopy works, the progression of cancer and the use of new diagnostic methods.

The model was developed in partnership with model-makers at XZ Resources over the course of several months, together with Rebecca and clinician Chris Peters and research scientist Pierre Lao-Sirieix. Their input meant that not only was Norman anatomically accurate but that the different examples of healthy and diseased tissues looked as life-like as possible.

Norman made his debut at the Cambridge Science Festival earlier this year, and has also appeared at various schools in the Cambridge area. Rebecca comments: “Norman has proved to be a valuable addition to our lab. He is versatile enough to be used both for outreach activities as well as for professional training and education, and we plan on using him for many years to come.”
Working together to get science into the media

In May the Medical Research Council and the Wellcome Trust press teams arranged a one-day conference that brought nearly 100 press officers from funding bodies, medical research charities and universities together to discuss ways of collaborating to strengthen media coverage of science.

Delegates heard from print, online and broadcast science correspondents in the Changing face of science journalism session, shared case studies from university press officers in Communicating science responsibly and had an opportunity to question press officers from Government departments in Working with government press officers.

The key lecture was given by Dr Alicia White from the NHS Choices Behind the headlines service, who explained how her team appraises research papers and media coverage for visitors to the NHS Choices website.
Cancer research's finest gather for annual NCRI conference

Birmingham’s International Convention Centre hosts this year’s National Cancer Research Institute (NCRI) conference, which takes place from 4 to 7 October 2009. This annual meeting is the major forum in the UK for showcasing the best British and international cancer research, and brings together leading experts from all disciplines. The event will feature a mix of plenary speakers, symposia, parallel sessions, focused satellite meetings and workshops. For more information go to: www.ncri.org.uk/ncriconference

Exploring the dark side of hormones

Now in its third year, the Centre for Reproductive Biology’s public talks series kicks off this autumn in Edinburgh. Let’s talk about: Hormones and disease – the sequel gives an insight into how doctors and scientists at the Centre, which includes the MRC Human Reproductive Sciences Unit, are helping solve problems related to reproductive health issues. This year’s intriguingly-titled presentations, which run between November and March, include: Sex Kills: vaccines save, The real story about cervical cancer and A womb with a view: a closer look at endometriosis and fibroids. All talks take place at the Queen’s Medical Research Institute, New Edinburgh Royal Infirmary, Little France, Edinburgh. For more information and to book a seat, see: www.crb.ed.ac.uk/letstalk

MRC Harwell Lecture 2009

Join the general public and local scientists on Thursday 1 October to hear Professor Steve Jones from University College London discussing the question Is human evolution over? For further information and tickets contact j.stoner@har.mrc.ac.uk

Milton Keynes Science Festival 2009

The ten days between 17 and 25 October will be packed full of exciting, entertaining and informative science, technology and engineering events around the city, including MRC hands-on activities and a café scientifique. Full details are at: www.mksciencefestival.org.uk

International Open Access Week

The first global Open Access week takes place from 19 to 23 October. Open Access encourages the unrestricted sharing of research results with everyone, everywhere, for the advancement of science and society and relies on the principle that all research should be freely accessible online. The MRC Open Access mandate states that all peer reviewed articles published with MRC funding must be made publicly available via UKPMC http://ukpmc.ac.uk The week-long virtual event provides a useful opportunity find out more about Open Access and how to comply with the MRC’s mandate. More information can be found at www.mrc.ac.uk/Ourresearch/Ethicsresearchguidance/Openaccesspublishing or by getting in touch with your local librarian.
OBITUARIES

Professor Sheila Rodwell
1947–2009

Professor Sheila Rodwell was Director of the MRC Centre for Nutritional Epidemiology in Cancer Prevention and Survival and had a distinguished career in nutritional epidemiology. She died on 16 June, shortly after being awarded an OBE in the Queen’s Birthday Honours.

Sheila Rodwell (known professionally as Sheila Bingham) was an international leader in nutritional epidemiology research, and worked for the MRC for 33 years. She graduated as a dietician from Queen Elizabeth College (now part of King’s College London) and worked in Cambridge for most of her career, for both the MRC and the University of Cambridge.

With over 600 research publications to her name, Sheila’s work has led to a better understanding of the relationship between nutrition and chronic disease. She pioneered improved methods for assessing dietary intake and nutrition in large, free-living human populations, which are notoriously difficult to assess. For example, she was the first to use apparent total N-nitroso compounds excreted in faeces as a biomarker for the assessment of meat intake. She and her colleagues also set up one of the largest international prospective studies on diet and health, later assessing the implications for clinical and public health policy.

Sheila’s calm and modest demeanour belied her major contributions to science, which were recognised by numerous prizes and awards, as well as a fellowship of the Academy of Medical Sciences and honorary professorships in Cambridge and Coleraine. She was also a much-loved lecturer and teacher in the University of Cambridge with many successful PhD graduates. Tragically, she was awarded her OBE just a few days before she died from cancer, a disease to which much of her research had been dedicated.

She is survived by her husband, Simon Rodwell, to whom she had been very happily married since 2000.

Professor John (Iain) Alexander Simpson
1922–2009

Professor Iain Simpson was an internationally famed neurologist, whose research interests included myasthenia gravis, a chronic neuromuscular disease which causes skeletal muscle weakness. He died on 13 May 2009.

Iain studied medicine at Glasgow, where he was later to gain an MD and DSc. He qualified in 1950, and after taking up junior hospital posts he gained an MRC Fellowship which enabled him to pursue neurology training at the Institute of Neurology in London. He returned to lectureships in medicine in Edinburgh and Glasgow, which culminated in his appointment as Professor of Neurology, Glasgow, between 1964 and 1987.

Iain’s diverse research interests and papers included the autoimmune basis of myasthenia gravis, abnormal involuntary movement disorders caused by hypothyroidism (underactive thyroid) and skin changes in hypocalcaemia (blood calcium deficiency). Two particularly noteworthy papers he published were on the accurate correlation between electroencephalography (a type of brain scan) and pathology of cortical brain cell death following heart attack, and on immune deficiency in autoimmune myasthenia gravis.

As a guest lecturer and visiting professor, he gave 161 major presentations in universities throughout the world. He also wrote two textbooks, 34 chapters in other textbooks and 94 original papers. As a result he was much in demand as a Board member for government and academic institutions, as a member of editorial boards and as a guest examiner.

Iain married Dr Elizabeth Marguerite Hood Neill in 1951. They had two sons, both of whom are doctors, and a daughter.
Elizabeth (Betty) Press
1920–2008

Betty Press was an MRC biochemist whose work made a major contribution to our understanding of the structure of antibodies. She died in December 2008.

Born in Marylebone, London, Betty was the daughter of a former lady’s maid and the manager of a zinc and plumbing business. She served in the Women’s Royal Naval Service (Wrens) during the Second World War which broke out when Betty was 19. After the war, she gained a BSc in Chemistry from Queen Mary College, University of London, and later undertook research at the Middlesex Hospital Medical School.

In October 1955, Betty began working with Professor Rod Porter at the MRC National Institute for Medical Research – a working relationship would last for her entire career. In 1960, the pair moved to St Mary’s Hospital Medical School in London, and in 1967 to the MRC Immunology Unit at Oxford University. Betty took up a senior MRC scientific post within the newly-formed unit and continued in this role until her retirement in 1980.

Betty made several important contributions to the field of structural immunology. For example, among the 22 publications from the Porter laboratory on which her name appears, she co-authored a major publication on the determination of the four-chain structure of the immunoglobulin G molecule, a key discovery in the immunology field. Her work on antibodies also contributed to Professor Porter being awarded a Nobel Prize in 1972. Betty and Professor Porter had an excellent working relationship which lasted 25 years. “Both were straightforward and to-the-point, totally lacking in pretence, with a keen, rather understated sense of humour,” said former colleague Lisa Steiner.

Betty was unmarried. She will be greatly missed by her cousins, friends and former colleagues.

Information drawn from The Obituary of EM Press (Hogg and Steiner, The Biochemist, June 2009)