

News from the Medical Research Council July / August 2008

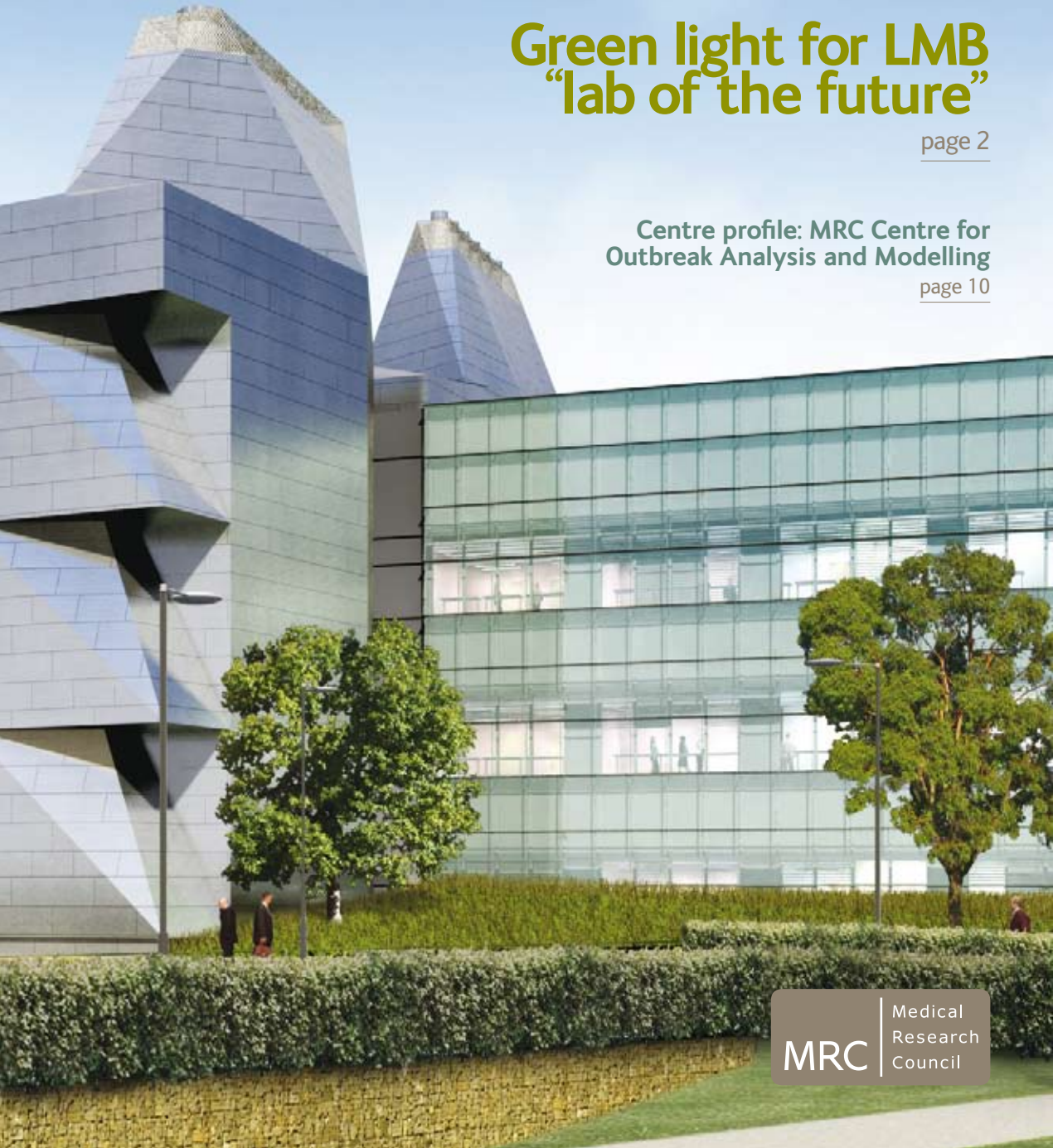
MRC NETWORK

Green light for LMB “lab of the future”

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MRC

Medical
Research
Council

JULY/AUGUST 2008
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PM gives new LMB building green light

“Britain has been responsible for so many of the great advances in healthcare in the past 60 years... and that’s only possible because of the quality of our medicine, the quality of our research and the quality of our science.”

Gordon Brown
Prime Minister

Building work for the new MRC Laboratory of Molecular Biology (LMB) was given the go-ahead by the Prime Minister, Gordon Brown, in June when he announced funding of £67 million towards the flagship building. Scientists working at LMB are world-leaders and the new facilities will ensure the institute continues to excel globally.

Speaking during a summit to commemorate 60 years of the NHS, Gordon Brown announced the funding for LMB. He said: “Over the last 10 years we’ve tried to invest more in science and more in healthcare. We’ve also seen the benefits of the cooperation between the university and scientific communities and the National Health Service. Britain has been responsible for so many of the great advances in healthcare in the past 60 years... and that’s only possible because of the quality of our medicine, the quality of our research and the quality of our science.”

The £67 million will come from the Large Facilities Capital Fund (LFCF), administered by the Department for Innovation, Universities and Skills. The total project cost is expected to be £197 million. The remainder will be provided by the MRC, partly using capital generated as a result of the commercialisation of discoveries made at LMB. The University of Cambridge

will contribute at least £7.5 million in return for lease of space to accommodate 40 research workers. Planning permission was agreed by Cambridge City Council last November. Construction of the new laboratory is scheduled to begin later this year and is expected to take three years.

Although the MRC unit was established in 1947, the existing LMB facility was built in 1962. LMB scientists explore biological processes at a molecular level and have used their discoveries to develop diagnostics and therapeutics. The institute's scientists have won a total of 13 Nobel prizes. Discoveries and inventions developed at the LMB, for example DNA sequencing and methods to determine the structure of proteins, have revolutionised all areas of biology.

Dr Hugh Pelham, Director of the LMB, said: "The new LMB building has a stunning design and will provide a globally competitive research centre with state of the art facilities for making the discoveries of the 21st Century. In addition, we will now be able to expand our research on the molecular biology of the brain and to build up activities that help to turn discoveries into medicine."

John Denham, Secretary of State for Innovation, Universities and Skills, said: "The cornerstone of success is the quality of the fundamental research, and the track record of LMB speaks for itself. This investment will further strengthen its reputation as a world leader in basic research and will continue to develop the laboratory's strong reputation for translating fundamental research into health benefits."

The building will also be the flagship of the newly expanded Cambridge Biomedical Campus. The campus is committed to innovation and excellence and brings together the Cambridge University Hospitals NHS Trust, the University of Cambridge Clinical School, the MRC, and medical research charities, including Cancer Research UK and the Wellcome Trust. This will provide exciting opportunities for expansion in new clinical services, research activities and a medipark, putting Cambridge at the forefront of initiatives to integrate prevention and treatment of disease with the development of new therapies and diagnostic techniques in the future.

Update from the MRC Chief Executive

The approval to begin building work on the new Laboratory of Molecular Biology (LMB) in Cambridge is great news for the MRC. The work carried out at LMB has helped to place the UK at the centre of research throughout the world. The institute has an outstanding track record. The new building will allow us to build on its position as a globally competitive research centre – and to build on its extraordinary legacy of creativity and innovation. The news about LMB's future came from the Prime Minister when he was taking part in celebrations to mark 60 years of the NHS.



And as we mark 60 years of the NHS and head towards our centenary in 2013, the MRC will continue its close relationship with the NHS. Without it, many of our outstanding advances over the past decades wouldn't have been possible. This joint working has been consolidated during the year under our formal partnership with the National Institute for Health and Research (NIHR), the R&D arm of the NHS. And as our joint initiatives with NIHR begin to pay off, we're also continuing to build upon our relationships with our many other partners, from academia and government to international organisations and industry.

In July the Pharmaceuticals Forum met for the first time. Made up of people from across industry, the Government's Technology Strategy Board and the MRC, the forum will oversee all of our collaborations and interactions with drug and biotech companies.

This issue of *MRC Network* highlights these partnerships and has details of new plans for investing in research, tackling disease and improving health. I hope you enjoy it.

Sir Leszek Borysiewicz

Farewell to Jane Lee, Director of Corporate Affairs

The MRC is saying goodbye to Jane Lee who retires this year. Jane first joined the Medical Division (now Research Management Group) at Head Office in 1975, moving on to gain experience in the International Section and then in the Personnel Policy Group. In 1986 Jane became head of the Industrial Liaison Group (ILG), the forerunner to MRC Technology. Before this, the MRC had an exclusive relationship with Celltech, the UK's first biotechnology company. Although very successful, by the mid 1980s the MRC began to feel the need to diversify its approach to commercial exploitation and to collaboration with industry and so set up the ILG. This was a significant policy shift and, as Jane recalls, the office, the Council and the scientists, were on a steep learning curve in defining the scope of new relationships and approaches to management of intellectual property.

At a farewell event at The Orrery, Nick Winterton, Executive Director of the MRC, who has worked closely with Jane throughout her career, said: "Jane has unrivalled insight into the issues facing the MRC and the ever changing context in which we operate and she has used that with great effectiveness throughout her 14 years as Director of Corporate Affairs." Sir Leszek Borysiewicz, Chief Executive of the MRC, added: "Jane has made a lasting contribution and I'd like to thank her for her commitment and dedication to the MRC."

Jane will continue at the MRC part-time for the next few months, providing leadership and continuity for the Corporate Affairs Group until a new senior team is in post.



End of innings for Professor Bob Johnson and welcome to Dr Tom Weaver

Professor Bob Johnson celebrated his retirement as Director of the Mary Lyon Centre (MLC) in June with a game of cricket on the pitch at Harwell. Professor Johnson, who joined the MRC in 2002, was presented with an umpire's hat and a pair of season tickets to watch his beloved Essex County Cricket Club. Colleague Kay Roberts said: "Bob was a keen cricketer in his youth and it was a toss up whether he became a professional cricketer or followed a career in science. This kind of farewell party seemed very appropriate."

This summer Professor Johnson will be travelling back to the USA, where he worked before joining the MRC. He and his wife Janet will then return to Cambridge where they have a home.

The new Director of the Mary Lyon Centre will be Dr Tom Weaver, currently Commercial Director of Source Bioscience. He will take up his appointment on 8 September. Prior to joining Source Bioscience, Dr Weaver was the Chief Executive of Geneservice Limited, a genomics-based products and contract research service business, formed from the MRC's work on the human genome project.

Top: Professor Bob Johnson
Bottom: Dr Tom Weaver

New Chief Operating Officer to shape MRC future

John Jeans has been appointed as the MRC's Chief Operating Officer and Deputy Chief Executive.

John, who's currently Chairman of GE Healthcare Ltd and President of GE's Life Sciences Commercial Operations, will join the MRC in January 2009 when Nick Winterton retires as the MRC's Executive Director:

John Jeans is a chemical engineer by training and has extensive experience in the medical devices and diagnostics industries. He's worked as a manager within a number of functions including manufacturing, HR, R&D, marketing and sales.

Sir Leszek Borysiewicz, MRC Chief Executive, said: "This is an excellent appointment. John has exactly the leadership skills and business experience that we need at the MRC."

John Jeans said: "I am delighted to be joining the MRC at this exciting and challenging time in its distinguished history. During my industrial career I have gained great satisfaction from helping to transform scientific and technological developments into tangible patient benefits, and am looking forward to having the privilege of working with my new colleagues to continue to pursue this passion."

"I am delighted to be joining the MRC at this exciting and challenging time in its distinguished history."

John Jeans



Scottish collaboration to strengthen public health research

A new initiative to help strengthen the evidence base for improving health in Scotland was launched in July. The Scottish Collaboration for Public Health Research and Policy aims to identify opportunities in research into public health interventions that could lead to new public health policy and programmes to tackle major health problems in Scotland. The collaboration is a joint venture between the MRC and the Chief Scientist Office of the Scottish Government.



Professor John Frank (pictured left), formerly professor of Public Health at the University of Toronto, will head the collaboration. He brings with him a strong background not only in public health research but in effectively championing teamwork between public

health researchers and public policy decision makers. This will be critical to the success of the Scottish collaboration. He will hold a chair in public health at the University of Edinburgh, and will be based in offices at the MRC's Human Genetics Unit at the Western General Hospital.

Professor Sir John Savill, the new Chief Scientist for Scotland (see page 9) and Head of the College of Medicine and Veterinary Medicine at the University of Edinburgh, welcomed the appointment. He said: "The Scottish public health and clinical research communities are very excited by the arrival of John Frank, a distinguished research scientist in this important and challenging area. We are convinced that John's expertise and leadership will ensure that Scotland makes vital contributions that are relevant to Scotland, the UK and further afield."

Scotland has poorer health than many other industrialised countries and is experiencing widening

health inequalities. A particular area of concern is the increasing burden of ill health among young adults caused by things like drug and alcohol abuse, accidents and violence. There is also a looming epidemic of chronic disease in later life related to heavy drinking, unhealthy diets and low levels of physical activity.

The problem is not simply a medical one – a multi-faceted approach is needed. As well as health researchers, the collaboration hopes to involve criminologists, epidemiologists, psychologists, economists and law enforcement agents, each of whom will bring knowledge, experience, ideas and data to the table. It will hold workshops on major public health problems which will lead to the formation of small working groups to develop plans for tackling specific problems.

For instance, it's unclear what should be done in homes, schools and communities to reduce the number of overweight children. What is clear is the need to take action that suits the local cultural setting. "The solution is to change the culture," Professor Frank explained. "We can't simply go to the published literature and find a recipe that might work here. We need to come up with home-grown and home-tested solutions"

"The more I've talked to people about the initiative, the more support I've been offered," he added. "Many public health problems are biologically reversible, and that's a very compelling argument for involvement. The collaboration will soon be ready to work with researchers and policy-makers across the country, to put together national teams, to bring the best minds available to the problem, and that's got to be a good thing."

The collaboration will work with the Scottish Government and complement the work of Health Scotland, which already commissions research into specific areas. It will also work with the NHS, higher education institutions and other relevant organisations.

Up to £2 million up for grabs for 'discipline hopping'

Scientists in UK institutions can apply for 'discipline hopping grants' to allow them to cross the disciplinary divide and spend time working in another area of science. Between £1.5 and £2 million is available for grants of approximately £125k each, to cover the costs of up to a year-long job swap.

The grants aim to provoke new collaborations between the physical and life sciences. They have been well received in the past as they allow scientists to pursue new research possibilities. The grants do not have to be tied to a fully formed project proposal; they can provide contact time to encourage researchers to develop imaginative ways of using techniques or expertise from the physical sciences or engineering to tackle biological or medically related problems.

Dr Huw Summers of Cardiff University used the discipline hopping grant to leave his physics department and spend a year in medical schools in the UK and US. He said: "The experience was fantastic, allowing me to understand for the first time the philosophy of biomedical scientists

– how they think about their research rather than just knowing how they did it. It has led to a promotion to an interdisciplinary professorship linking engineering and medical research and so it was also rewarding for my career!" Professor Maggie Cusack of Glasgow University used her grant to cross the 'shell-bone divide'. "I applied my skills and expertise in invertebrate carbonate biominerals to research into vertebrate bone. In doing so, I learned a vast amount about bone and bone disease. The scheme is an excellent one, enabling people to work at exciting interfaces," she said.

Five research councils are involved in the scheme: the MRC, the Engineering and Physical Sciences Research Council, the Biotechnology and Biological Sciences Research Council, the Science and Technology Facilities Council and the Natural Environment Research Council. The closing date for this year's applications is **12 November**. To find out more, visit www.mrc.ac.uk/ApplyingforaGrant/AvailableGrants/DisciplineHoppingGrant.

Funding secured for Scottish Institute of Cell Signalling

Sir Philip Cohen, Director of the MRC Protein Phosphorylation Unit at the University of Dundee is to lead development of the Scottish Institute of Cell Signalling (SCILLS), supported by funding from the Scottish Government. The Scottish Funding Council has agreed to provide £10 million over five years to fund the institute via the University of Dundee.

The institute will focus on protein ubiquitination, a process where proteins within cells are modified by the addition of ubiquitin molecules, which can lead to protein destruction. Less is known about this process than its cousin protein phosphorylation, the addition of phosphate molecules. The first cancer therapy

related to protein ubiquitination was marketed last year and the interplay between phosphorylation and ubiquitination is predicted to be a big growth area in cell regulation research. Ubiquitination controls all biological processes, making the molecules involved the possible drug targets of the future.

There are plans to establish a Protein Ubiquitination Unit within the Scottish Institute of Cell Signalling to attract leading researchers and to build a skills base in preparation for industrial interest. SCILLS will be well placed to interact with the pharmaceutical industry and to develop the potential for growth in the Scottish biotechnology industry.

Demonstrating the impact of MRC research

Research councils are under increasing pressure to demonstrate to government the quality, progress and impact of the research they support. A substantial increase in MRC funding in last year's spending review means there is now an even greater need for the MRC to strengthen the evaluation of its research and demonstrate the importance of its research funding.

Working with members of the research community, the MRC has developed an innovative online tool to collect information on outputs from its research programmes and

grants. An important consideration in the tool's development has been the research councils' commitment to reduce the administrative burden placed on researchers, so the tool has been designed to rationalise existing requests and collect necessary information that will enable effective analysis.

Ian Viney, head of evaluation at the MRC, said: "There is a vision to have a shared system across all research councils for the collection of research outputs and outcomes; by designing and implementing the MRC online system now, we are

ensuring that the MRC is in the best possible position to help shape this joint approach."

The tool will be launched at the end of August – all MRC grant-holders and programme leaders will be contacted individually, provided with a unique reference to access the system and given further details to enable them to complete their submission. Initial reports on MRC research outputs will be published early in 2009. To find out more, email evaluation@headoffice.mrc.ac.uk.

Multi-million pound effort to prevent disease renewed

A partnership between government departments, research councils and charities is investing up to £12 million in tackling risk factors for a range of conditions, such as cancer, heart and circulatory diseases, diabetes, obesity, stroke and dementia.

The National Prevention Research Initiative (NPRI), established in 2004, supports research into behaviours associated with significant risks to health, such as poor diet, physical inactivity, smoking and alcohol consumption, and on the environmental factors that influence those behaviours.

Dr Marlie Ferenczi, who manages the NPRI for the MRC, said: "This is the third opportunity to fund projects under this initiative. We want to encourage

work that sees researchers from different disciplines working together to find new ways to prevent disease. This research can yield vast improvements in the health of the UK population and we want to encourage more work in this important area. Ultimately this is about giving people the information and support they need to ensure they live longer and healthier lives."

In this phase NPRI is seeking research proposals to develop, test and evaluate interventions and evaluate methods to encourage the uptake or implementation of interventions that are already known to be effective. Studies that focus on long-term behaviour change are particularly welcomed. To find out more, visit www.npri.org.uk.

MRC PEOPLE

Following an open competition to fill the post of Chief Scientist of Scotland, **Sir John Savill** has been appointed. Sir John, Professor of Experimental Medicine, Vice-Principal and Head of the College of Medicine and Veterinary Medicine in the University of Edinburgh and member of the MRC Council, took up the appointment on 1 June. He has extensive experience in the field of medical research, including many years of service to the MRC.

Two eminent MRC scientists were acknowledged in this year's Queen's birthday honours. **Professor Andrew McMichael**, MRC Council member and honorary director of the MRC Human Immunology Unit, received a knighthood for his services to medical science. Also recognised was **Dr Susan Jebb**, head of nutrition and health research at the MRC Collaborative Centre for Human Nutrition Research in Cambridge, who was awarded an OBE. Dr Jebb chairs the Expert Advisory Group on Obesity for the cross-Government Obesity Team.

Two Cambridge MRC scientists have been awarded Research Prize Fellowships by the Lister Institute of Preventive Medicine. The awards are given to young scientists to help them develop their potential, with flexible funding for five years. **Dr Rebecca Fitzgerald** is best known for her work at the MRC Cancer Cell Unit on the early detection of patients at risk of oesophageal cancer. Her group has developed a non-endoscopic capsule sponge test, which when coupled with an immunomarker can detect Barrett's oesophagus, the precursor of the cancer. **Dr Simon Bullock** of the MRC Laboratory of Molecular Biology and his group are trying to understand the little-known mechanisms by which cellular constituents are sorted using microtubule-based motors. Understanding how specific cargoes are recognised and delivered to the appropriate destination is important because motors can be exploited by bacteria and viruses, and because defective transport is linked to certain neurodegenerative diseases.



Left to right
Professor Sir John Saville,
Professor Andrew McMichael,
Dr Simon Bullock.

Dr Emma Taylor of the MRC Toxicology Unit at the University of Leicester has won an award for innovation in research from the European Chemical Industry Council. The €100,000 Cefic LRI award is given annually to an early-career scientist. It aims to promote innovation in the fields of toxicology and ecotoxicology. Dr Taylor will use the funds to further her research on transgenerational effects – those potentially inherited from one generation to the next.

Dr James Briscoe, of the MRC National Institute for Medical Research, has been awarded the 2008 EMBO gold medal, given annually to an outstanding young scientist for exceptional life sciences research performed in Europe. "James Briscoe has revolutionised our understanding of the specification of cell identity in a given spatial setting," said Hermann Bujard, EMBO Executive Director. "His work exemplifies how talented scientists are advancing the field of molecular biology."

The Royal Society has awarded two of its annual Royal Medals to MRC researchers. **Professor Sir Philip Cohen**, Director of the MRC Protein Phosphorylation Unit at the University of Dundee was given the medal for his major contribution to our understanding of the role of protein phosphorylation in cell regulation. **Professor Sir Alan Fersht**, Director of the MRC Centre for Protein Engineering in Cambridge was awarded the medal for work in protein engineering, which he has developed into a fundamental tool in enzyme analysis and the problem of protein folding. These awards are made to scientists within the Commonwealth for the most important contributions to the advancement of natural knowledge and for distinguished contributions in the applied sciences.

CENTRE PROFILE

MRC CENTRE FOR OUTBREAK ANALYSIS AND MODELLING

The world-leading MRC Centre for Outbreak Analysis and Modelling was set up following a recent push to support translational research – which gave the already established group a funding structure that would allow it to operate optimally.



The team, led by Professor Neil Ferguson (pictured right) at Imperial College, is now able more readily to combine cutting edge basic research with practical applications, particularly in the areas of pandemic preparedness and the global fight against preventable diseases. Its core activities are flu pandemic planning and preparedness, developing generic real-time analysis tools, and tracking the spread of polio, malaria, HIV and TB – some of the planet's biggest killers.

"The centre develops the basic cutting-edge science and then uses it to supply scientific advice to inform public health policy. Being a centre is allowing us to do both without falling behind, while also developing our capacity," said Professor Neil Ferguson.

Before becoming a centre the team already had a breadth of experience spanning animal and human infections with radically different patterns of spreading – such as BSE (mad cow disease), foot and mouth disease, HIV, polio and SARS. They had also developed sophisticated real-time disease modelling and outbreak analysis technologies. However, collaborations with national and international bodies were ad hoc and took more time than the scientists could reasonably devote to them.

"We were becoming victims of our own success, with more queries from governmental and international bodies than we could handle," recalled Neil. "The centre



grant has allowed us to develop the infrastructure we need to respond to the requests we get. There has definitely been a shift in expectations from governments and international organisations such as the WHO. They increasingly expect modelling to be used not only live during a crisis, but also ahead of any problems, as part of preparedness exercises and routine policy-making."

Pandemic preparedness

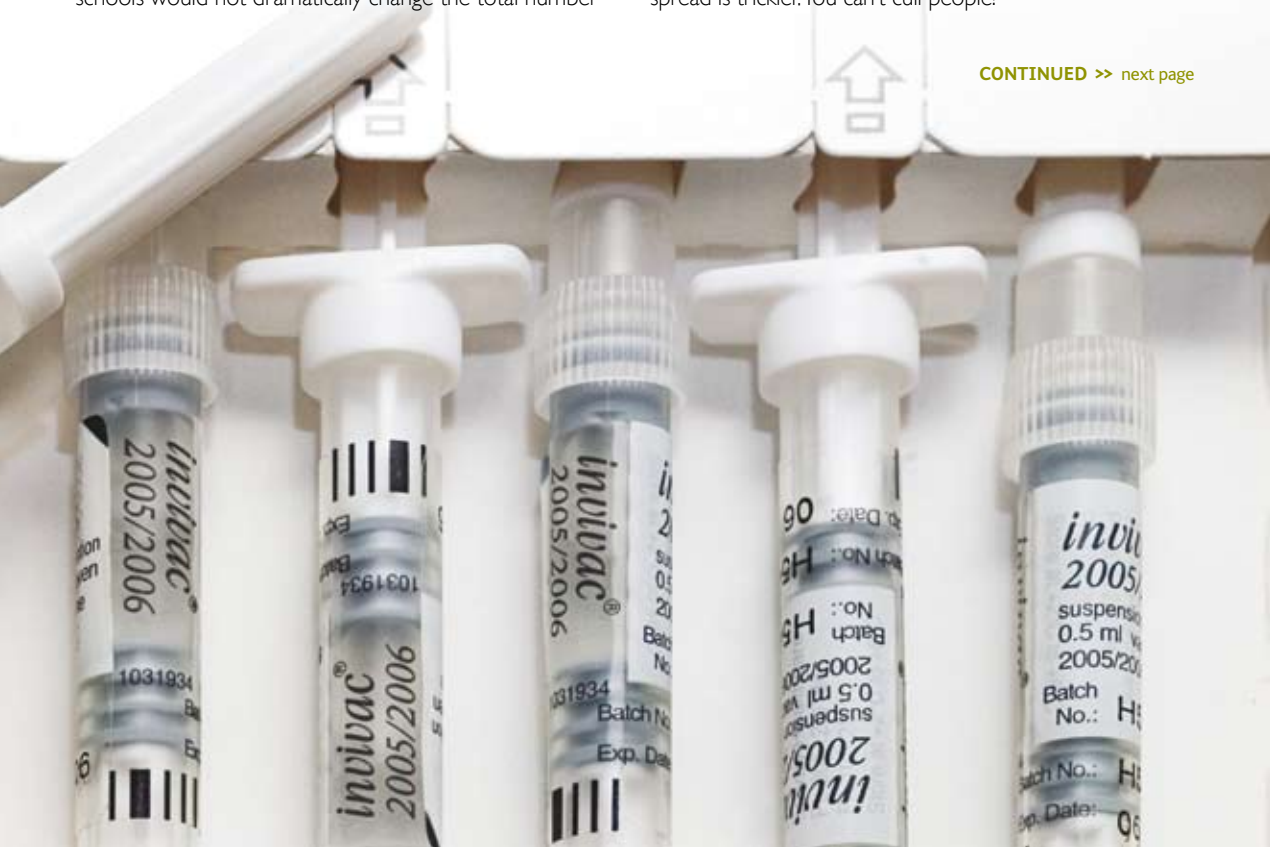
The centre now has a dedicated Outbreak Analysis Unit with several staff. This has two modes of operation: 'peacetime', when the unit responds to more general requests for assistance and advice and establishes relationships with relevant bodies across the globe, and 'wartime', when it would be on call to deal with a potential epidemic or pandemic. Their expertise applies to both human and animal diseases.

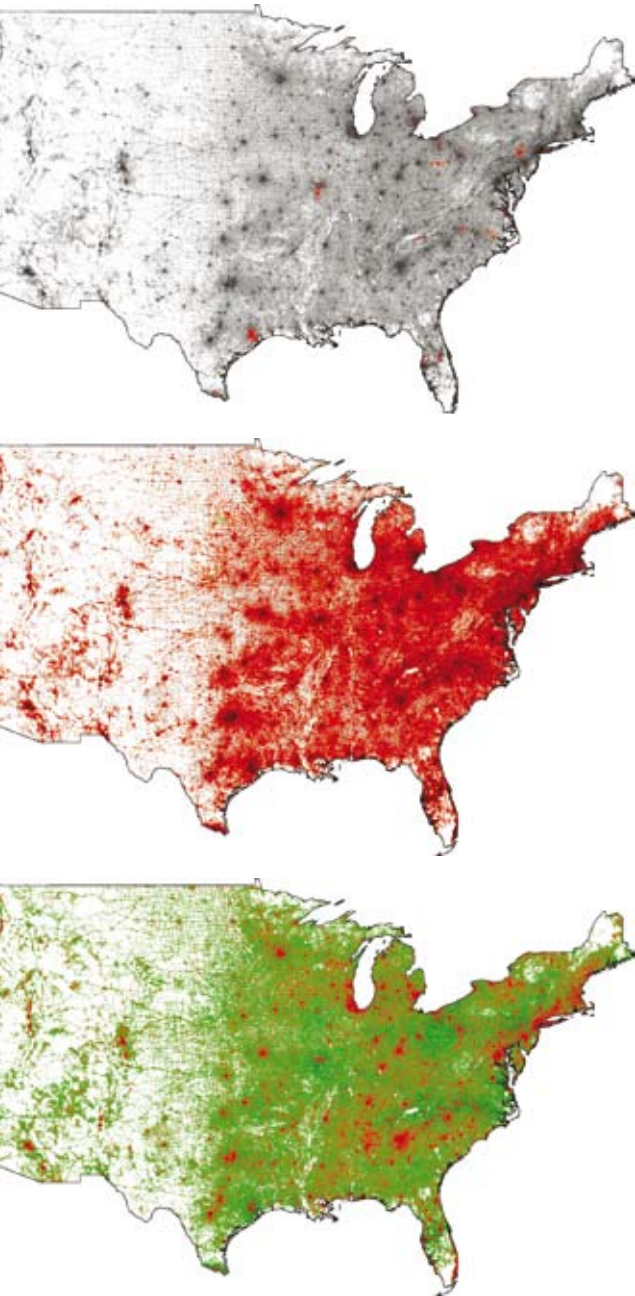
Dr Simon Cauchemez has been working with Neil Ferguson on modelling the impact of school closures on an outbreak of influenza. "What we found was that closing schools would not dramatically change the total number

of people who would contract the disease – it would prevent only one in seven cases. Crucially however, such a measure would significantly reduce the burden of an epidemic at its peak. This would alleviate the strain on the health service and hopefully result in better outcomes."

Simon's speciality is transmission analysis, both at the national/international level, and at the community, and even household, level. The unit would be first in line to help optimise control policies if an outbreak occurred. Dr James Truscott also works in the Outbreak Analysis Unit, looking more specifically at people's movements, especially in their commutes. He recalled a recent foot and mouth epidemic training exercise: "It was quite an eye opener. We were working around the clock and spent a good chunk of the night ensuring the software we were running to model the epidemic could cope with the amount of data. It gives you a feel for how tough it would be to sustain that level of work in a real situation. We often have quite precise data for animal disease epidemics, but human epidemics are more complicated. Data collection and access to data about movement is more difficult... and trying to control spread is trickier. You can't cull people!"

CONTINUED >> next page





Above: Simulated development of a flu pandemic in the USA on days 28, 70 and 112 (top to bottom) after the first case. The grey areas represent population density (darker = more dense), the red areas represent infections and green represents recovered areas.

Tackling global killers

Another part of the centre's remit is providing expert advice, analysis and research capacity for international agencies and governments around the world. A lot of this work occurs at the intersection between patterns of human behaviours responsible for disease transmission and the biology of the infectious agents involved.

Professor Geoff Garnett did a lot of the original work modelling the spread of HIV/AIDS. His work continues today, with a focus on identifying effective intervention strategies for different communities in developing countries. "HIV is an outbreak that's lasted 25 years so far," he said. "My work aims to identify the outbreaks within the outbreak and develop interventions that can help bring an end to HIV. The collaborations I have here with other members of the centre allow me to stay at the cutting edge of the mathematical and computational research while looking closely at what works on the ground."

Geoff travels the world looking at outbreaks in specific communities – drug users in St Petersburg, gay men in Peru – how they affect the populations the groups live in and how they can be controlled. His work helps inform the UNAIDS Reference Group, which he chairs and which feeds into work by the Global Fund, a charity set up to fight AIDS, TB and malaria, to assess intervention strategies in 20 countries.

On the other side of Imperial College's St Mary's Campus, where the MRC Centre is based, is Dr Nick Grassly whose work focuses on polio. Nick works in collaboration with the Global Fund and with Rotary International. "My mission is to use the surveillance data on the spread of infection to not only answer public health questions, but also feed on-the-ground observations and outcomes back into the basic science end of the equation. Observation is crucial to informing research into how these diseases can be tackled. At the moment, my main focus is on comparing different polio vaccines, some tackling one strain while others tackle all three strains of the crippling disease, to compare their effectiveness. Places where polio is still endemic include India, Pakistan, Afghanistan and Nigeria, where we're seeing another outbreak at the moment."

Professor Azra Ghani has recently re-joined the centre. Her focus is chiefly on malaria, for which the Gates Foundation has set the tall order of eradication. "Our goal is to create

generic models of the disease which can be tailored to specific localities and aggregated to obtain a better picture of the regional or even global patterns of the disease. If we are to eradicate malaria even locally, we need to move towards these pandemic models to understand better the disease cycles and how the disease reappears. We also need a better understanding of how treatments like Artemisinin reduce the length of time a person is infectious and what impact that has on the spread of the disease. And my team is working to find out more about the potential long-term impact of measures such as insecticide treated nets on innate immunity in different populations," said Professor Ghani. Another focus of Azra's – and other staff in the centre – is TB.

Increasing demand

The new Rector of Imperial College, Professor Sir Roy Anderson, is also a lead researcher at the centre. His work covers a broad range of infectious pathogens. "The centre's researchers are world leaders in this highly demanding area, constantly devising new tools and techniques for understanding the spread of disease. Sadly we expect to see more epidemics in the coming decades because of world population growth and increased travel. The centre will play a crucial role in helping the UK Government and international agencies cope with and reduce this predicted increased burden," he said.

OPPORTUNITIES

<p>BOARDS</p> <p>Molecular and Cellular Medicine</p> <p>Infections and Immunity</p> <p>Population and Systems Medicine Board</p> <p>Neurosciences and Mental Health</p>	<p>Deadline date</p> <p>3 September 2008</p> <p>10 September 2008</p> <p>17 September 2008</p> <p>24 September 2008</p>	<p>Board meeting</p> <p>4 & 5 February 2009</p> <p>11 & 12 February 2009</p> <p>18 & 19 February 2009</p> <p>26 & 27 February 2009</p>
<p>CALLS FOR PROPOSALS</p> <p>NPRI 3 (outlines) (see page 8 to find out more)</p> <p>Development Pathway Funding Scheme</p> <p>Full applications (current round)</p> <p>Outline applications (next round)</p>	<p>Deadline date</p> <p>18 September 2008</p> <p>7 October 2008</p> <p>16 October 2008</p>	<p>Panel meeting</p> <p>13 & 14 January 2009</p> <p>December 2008 (tbc)</p> <p>December 2008 (tbc)</p>
<p>FELLOWSHIPS</p> <p>Clinical Research Training Fellowship (round two)</p> <p>Senior Non-Clinical Fellowship</p> <p>Special Training Fellowship in Biomedical Informatics</p> <p>Clinician Scientist Fellowship/Senior Clinical Fellowship</p>	<p>Deadline date</p> <p>19 September 2008</p> <p>26 September 2008</p> <p>3 October 2008</p> <p>21 November 2008</p>	<p>Interviews</p> <p>2-4 March 2009</p> <p>12 & 13 March 2009</p> <p>18 March 2009</p> <p>3-5 June 2009</p>
<p>STUDENTSHIPS</p> <p>Industrial CASE scheme</p> <p>Advanced Course Masters Scheme</p> <p>Capacity Building Studentships</p>	<p>Deadline date</p> <p>26 September 2008</p> <p>26 September 2008</p> <p>26 September 2008</p>	<p>Panel meeting</p> <p>w/c 8 December 2008</p> <p>w/c 8 December 2008</p> <p>w/c 8 December 2008</p>

OBITUARIES



Professor Chris Curtis, 1939-2008

Professor Chris Curtis, a leading entomologist who devoted his life to developing low-tech methods to control mosquitoes, died in May. His work helped to establish use of insecticide-treated mosquito nets as the main method to prevent spread of malaria.

Following his PhD, Professor Curtis went to work on the genetic control of mosquitoes in a World Health Organization laboratory in India. After this closed, Professor Curtis joined the London School of Hygiene and Tropical Medicine (LSHTM). He remained there for the rest of his career; and was an MRC external scientific staff member for many years. His early work focused on developing a way to suffocate the larvae of mosquitoes that carry the disfiguring disease filariasis. In the 1980s his attention moved to controlling the malaria-carrying Anopheles mosquito using insecticide-treated nets. A tireless and influential campaigner for the distribution of free nets to people in developing countries, Professor Curtis contributed to a vast increase in donor funding for malaria control. Insecticide-treated nets have revolutionised malaria prevention and have the potential to save millions of lives.

Professor Curtis's influence as a teacher was as great as that as a scientist. He gave countless lectures throughout his career and inspired students all over the world, continuing even after he retired in 2003. Professor Sir Andrew Haines, Director of the LSHTM, said: "Chris made enormous contributions to the science and application of vector control and his pioneering studies have laid the foundation for many of the current approaches to controlling malaria. Equally importantly, he was a tireless educator who has inspired generations of students all over the world."

Professor Patrick Lawther, 1921-2008

Patrick Lawther was an expert on environmental medicine and air pollution. His research led to much of the current British legislation on airborne pollution, including the Clean Air Acts of 1956 and 1968.

Patrick Joseph Lawther was born in Gretna, Scotland and grew up in Cumbria before moving with his family to Lancashire. In 1939 he began to study chemistry at King's College London but didn't complete his degree. After a year teaching at a school in West Yorkshire he took a job as a plant chemist. Following the Second World War he went to St Bartholomew's Hospital Medical College in London to study medicine and graduated in 1950. He retained a close relationship with the hospital for the rest of his career; being made the first Professor of Environmental and Preventative Medicine in 1976.

Dense smog over London in 1952 caused thousands of deaths and led to the establishment of an air pollution unit at St Barts, directed by Professor Lawther. He joined the MRC in 1955 as director of the Group for Research on Atmospheric Pollution, which later became the Air Pollution Research Unit and then the clinical section of the MRC Toxicology Unit. Professor Lawther retired in 1981, three years after receiving a CBE. His other honours included medals from the Royal Society of Arts, the Académie Nationale de Médecine, the Royal College of Physicians and the Royal Society of Medicine.

Dr Robert Stow Bray

Robert ("Bill") Bray, PhD, DSc, died in Cherbourg, France on 23 May at the age of 84, following a short illness.

From a noted South Australian family, Bill was a distinguished parasitologist who directed the MRC Laboratories in The Gambia between 1974 and 1978. He is survived by his son Michael, daughter-in-law Brigitte and granddaughter Geraldine.

EVENTS DIARY

2008 National Eisteddfod of Wales, Cardiff

From **2 to 9 August**, the MRC and the Biotechnology and Biological Sciences Research Council will take part in Wales' largest cultural festival. The two councils will host their 'Hope not Hype' stem cell exhibition and run a hands-on stem cell activity involving modeling clay and lots of Welsh-speaking scientists. For more information, visit

www.eisteddfod.org.uk/english.

Orkney International Science Festival

This year's festival runs from **4 to 10 September** and will include hands-on children's activities and a public talk by MRC scientists. Find out more at www.oisf.org.

Edinburgh Doors Open Day

The 18th annual Edinburgh Doors Open Day takes place on **27 September** and will involve the MRC Human Genetics Unit. For more information, visit www.cockburnassociation.org.uk.

The future of stem cells in Cambridge

The role of Cambridge in the quest to discover and develop novel cell based therapies will be the topic for discussion at a workshop to be hosted by the East of England Stem Cell Network on **11 September** at 5:30pm. The aims of the workshop are to ensure that the appropriate infrastructure and resources are in place in the future to facilitate the continued growth of the stem cell and regenerative medicine research base and, in particular, to support the successful translation of fundamental research from the bench to the clinic and beyond. For more information, email jeanettewalker@eescn.org.uk.

RESEARCH CENTRE NEWS

FGU – from genetics to genomics

The MRC Functional Genetics Unit at the University of Oxford has changed its name to the Functional Genomics Unit. Professor Dame Kay Davies, Director of the FGU, explained: "Genomics has become genetics writ large, and our vision is to look beyond the single gene or single genome to exploit multiple sequences, from populations or from various species, to highlight variations in functional repertoires. Such studies are important because functional differences are being found to underlie complex diseases and susceptibilities to infectious disease." She added: "We are also looking to the future and applying the new genome re-sequencing technologies to our research, and then making preparations for the future research opportunities that even less expensive sequencing will provide."



RESEARCH ROUNDUP

Serotonin key to decision making

The neurotransmitter serotonin plays a critical role in regulating emotions such as aggression during social decision making, say researchers from the Behavioural and Clinical Neuroscience Institute at the University of Cambridge. The MRC and Wellcome Trust-funded team say their findings explain why some of us may become combative or aggressive when we're hungry – as the amino acid essential for making serotonin can only be obtained through diet. For the study the scientists temporarily reduced serotonin levels in healthy volunteers by manipulating their diet. They then used the 'ultimatum game' to investigate how the participants reacted to what they perceived as unfair behaviour. In the game, one player proposes a way to split a sum of money with a partner. If the partner accepts, both players are paid, if not, both miss out. Usually people reject around half of all offers of less than 20 to 30 per cent of the money, but when their serotonin levels were reduced the volunteers rejected more than 80 per cent of these offers. Researcher Molly Crockett said: "Changes in diet and stress cause our serotonin levels to fluctuate naturally, so it's important to understand how this might affect our everyday decision making." The research also provides insights into clinical disorders characterised by low serotonin levels, such as depression and obsessive compulsive disorder, and may help explain some of the social difficulties associated with these disorders.

Science Express June 2008

Better tools needed to measure infants' pain

The tools doctors use to assess pain in babies may underestimate how much pain a prematurely born infant feels. Researchers led by Dr Rebecca Slater of UCL compared pain responses in the brain with physiological and behavioural measurements in 12 infants who were observed a total of 33 times during a painful heel lance to collect blood. They used the premature infant pain profile (PIPP), which uses factors such as change in facial expression and heart rate to signal the presence of pain. Changes in brain activity correlated with PIPP scores, and were more strongly linked to the behavioural components like facial expression than to physiological factors like heart rate. Dr Slater said: "Infants may appear to be pain free, but according to brain activity measurements could still be experiencing pain. Pain assessment based on behavioural tools alone should be interpreted with caution as they could underestimate the total pain response." Evidence from other studies has suggested that inadequate pain management in infants may be associated with attention deficit disorder, learning disorders and behavioural problems in later childhood. The research was funded by the MRC, the Wellcome Trust and the children's medical research charity SPARKS.

Public Library of Science Medicine 2008; 5: e129

No chemo benefit in asbestos lung cancer

A large UK and Australian study has found that adding chemotherapy to established methods of symptom management for patients with asbestos-induced lung cancer doesn't improve survival or quality of life. Although rates of the disease are peaking in North America and Western Europe due to bans on the use of asbestos, its incidence is still increasing worldwide. The cancer forms in the lining of the lung, making it hard to treat. The MS01 study assessed the potential benefits of combining 'active symptom control' with chemotherapy in 409 patients with malignant plural mesothelioma. A third received only active symptom control while the other two thirds received different types of chemotherapy as well. Richard Stephens, of the MRC Clinical Trials Unit, said: "This is one of the few large trials ever conducted on this disease and it emphasises how difficult mesothelioma is to treat. Because mesothelioma forms in the lining of the lung it is hard to target. Although one of the chemotherapy drugs we looked at, vinorelbine, showed some promise, blanket chemotherapy may not be the way forward. Whilst continuing to try to alleviate symptoms and improve quality of life we probably need to concentrate on developing tailored and targeted treatments to improve survival."

The Lancet 2008; 371: 1685-1694

Modified virus slows prion disease in mice

Researchers have discovered a treatment that prolongs survival in mice with prion disease, examples of which include vCJD and kuru in humans and BSE in cows. In prion diseases, a naturally occurring protein in the brain, known as prion protein (PrP), changes its normal shape when it comes into contact with misshapen versions of the same protein 'prions'. These abnormally shaped proteins build up in the brain and are infectious: once they start to accumulate they convert more and more of the normal PrP into the abnormal form, causing the symptoms of prion disease and eventually death. Previously, Dr Giovanna Mallucci's group at the MRC Prion Unit at UCL (University College London) showed that mice genetically engineered to stop making normal PrP recovered from prion disease when normal PrP production was switched off in infected mice. Now they have shown that using a modified virus that expresses a small sequence of RNA (shRNA) that binds to the PrP RNA in brain cells can block the production of PrP. The virally-expressed shRNA interrupts the normal process of translation of RNA into protein molecules, in a process known as RNA interference. Dr Mallucci said: "The results are exciting because they have proved that tackling PrP even in a very focal way is beneficial in prion disease, protecting brain cells and extending survival in this model... Using this approach we can explore whether there are critical areas to be targeted in prion disease, how much of the brain needs to be targeted and understand the timing of such treatments."

Proceedings of the National Academy of Science Advance online publication July 2008



Long live lifelong health

Lifelong health is of increasing importance due to our ageing population. In Edinburgh, visitors to the city's new Royal Infirmary had the chance to read more about it recently when a new exhibition by the MRC and the Biotechnology and Biological Sciences Research Council called *Lifelong Health and Wellbeing* went on show.

Situated in the 'hub' of the hospital, the exhibition was seen by thousands of visitors, patients and hospital staff, many of whom stopped to read about the different approaches to age-related research and some of the successful outcomes of this work. "My brother-in-law was recently diagnosed with Alzheimer's, which is why I stopped to look at the exhibition," one visitor explained. "It's really interesting to find out more about what sort of research is going on that might be able to help him."

The public screening of the exhibition followed an event attended by Members of the Scottish Parliament, representatives from age-related organisations, scientists and members of the public who gathered to hear presentations. Professor Cyrus Cooper, Director of the MRC Epidemiology Unit in Southampton, spoke about recent research into how and why the body ages. He was joined by Professor John Starr from the University of Edinburgh and Simon Denegri of the Association of Medical Research Charities.

Science in the media

More than 80 press officers from medical research charities and universities gathered on 30 May for the MRC and Wellcome Trust's annual press officers' conference. They were welcomed by Sir Leszek Borysiewicz, Chief Executive of the MRC and the Wellcome Trust's Director, Dr Mark Walport.

The day began with a 'Meet the decision makers' session. Panelists Peter Hannington, planning editor for the Today programme on BBC Radio 4, and David Glover, head of science programming at Channel 4, were quizzed about how best to approach them with ideas for science content.

Speakers in the 'New media new audiences' session encouraged delegates to make the most of developments in online communications to share messages about research. And video journalist Becky Morelle explained how BBC Online is moving toward gathering content purely for broadcast on the internet and the opportunities this creates for scientists to capture an audience for their research.

The afternoon sessions focused on how press officers from different funding bodies, universities or research centres could best work together to influence science coverage in the media. John Davidson, the MRC's press, web and publications manager said: "There's a revolution in the media. The web has over-turned traditional ways of reaching the public. We're fortunate to have fantastic stories to tell about research discoveries and the scientists who have made them. But press officers from universities, charities and funders have to work ever more closely with scientists to generate the best and most accurate media coverage of science through broadcast, in print and online."

Cheltenham Science Festival

With a theme like 'taboo', the 2008 Cheltenham Science Festival was never going to be dull. Contributors made light of the unmentionable in events such as 'Good vibrations – the medical history of the vibrator' and 'Love and other viruses', a show about the nasty bugs ready to take advantage of our amorous liaisons. There was a range of topics for all ages, including the MRC-sponsored '99.9% human' – an informed and animated discussion about the ethics of stem cell research featuring Professor Stephen Minger and Lord Harries of Pentregarth.

The hub of the festival is always the Discover Zone, an exciting interactive space where people can experience and take part in science first-hand. Activities such as face-morphing, molecule-building and balloon-modelling ensured that the zone was buzzing all week with eager visitors. The MRC stand was exceptionally busy, scientists guided guests through a pit of human and avian flu viruses, before challenging them to create their own test-tube babies. Around 25,000 people visited the festival over its five days, making it the most successful in the event's seven-year history.

Sciencewise Expert Resource Centre to facilitate public dialogue

A new Expert Resource Centre (ERC) for science has been launched by the Government to help policy-makers talk to the public about a wide range of challenging issues. The Sciencewise ERC is targeted at people with responsibility for national policy-making in science and technology across Government. It offers a virtual information hub and a range of offline support services. "Science is constantly revealing challenging new areas for research and it's vitally important that we find out what people think about these before we commit to one policy direction or another," said Baroness Delyth Morgan, Parliamentary Under-Secretary of State at the Department for Innovation, Universities and Skills, when launching the new resource.

One its new services includes 'drop in for dialogue' sessions. The next session, titled 'Evaluation masterclass and mentoring', will be presented by writer Diane Warburton on 18 August. To register visit www.sciencewise-erc.org.uk or phone 0870 190 6324.

YOUR FEEDBACK



MRC Network is for anyone who has an interest in the work of the MRC, including scientists, doctors and health professionals involved in medical research, government departments and parliamentarians, and university staff and students. The aim is to provide a quick, easy-to-read summary of activities across the MRC, from research news through to funding, grant schemes and policy issues, with pointers to more in-depth information on websites and in other publications.

We are very keen to receive feedback on Network and suggestions for new features from our readers. So if you have any comments, please let us know. Just email: newsletter@headoffice.mrc.ac.uk

MRC Network is produced by the MRC publications team and is available in print and in downloadable pdf format at: www.mrc.ac.uk

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