Over the last few years the MRC has been developing its portfolio of university-based research centres. The first – the University of Bristol/MRC Centre for Synaptic Plasticity – was established in 1998. Since then the MRC has set up another 10 centres of research excellence in the UK (see box overleaf). This number is likely to increase steadily, following the MRC’s introduction of an annual call for outline proposals for centres. As a result of the first call in 2004, the MRC’s Council has recently given the go-ahead for four new centres, all of which are due to be open by spring 2006 (see pages 2–3).

What is an MRC centre?
MRC centres are long-term partnerships between the MRC and UK universities, requiring dedicated commitment and investment from both partners. They are intended to help universities develop and sustain centres of excellence with clear strategic direction in areas of importance for UK medical research. They are created to provide intellectually stimulating and well-resourced environments which not only are attractive to established researchers but will also encourage the most able young scientists to take up a career and remain in the UK.

The aim of each centre is to add value to high-quality scientific programmes that are already supported by grants from the MRC and other funders. Centres achieve this by:

- Providing leadership in focused aspects of a specific field.
- Co-ordinating research projects and appointments to strengthen the scientific impact.
- Creating a critical mass of researchers where, together, these groupings will benefit translational research.
- Fostering internal and external collaborations.
- Co-ordinating exceptional facilities to add value to research and training.
- Engaging with the public.

One key requirement is that the centre has a full-time director who is a leading, internationally renowned scientist and who will provide focused scientific leadership and management. The centre’s lead university is encouraged to involve other stakeholders, such as charities. Because centres thrive through multidisciplinary research, they are often located across multiple sites as previously independent groups are brought to work together.

Funding for the future
The MRC funds its centres in periods of five years. Towards the end of each funding period, the centre’s achievements are reviewed by the relevant MRC research board to assess whether to renew the Centre Grant. Funding is tailored to the needs of individual centres and will also involve a significant investment from the university and any other stakeholders. Until now, MRC financial support has generally been provided for infrastructure costs, such as research facilities, major items of equipment, staff who provide core facilities and expertise, and research training – but this is set to change following the introduction of full economic costing. The MRC envisages that funding for future centre awards is likely to focus more on capacity building, translational work and new initiatives.
New MRC centres

MRC–Asthma UK Centre in Allergic Mechanisms of Asthma at King’s College London and Imperial College, London

Professor Tak Lee from King’s College London (KCL) and Professor Tim Williams from Imperial College London (ICL) are the joint Directors of this new centre. The partnership is between the MRC, Asthma UK, ICL and KCL, with all parties contributing significant support.

The centre addresses an important health issue. Asthma affects one in 12 of the UK population, with 5.2 million people currently receiving treatment.

The centre’s main research aim is to advance the understanding of allergic mechanisms in order to inform the development of new, effective and targeted treatments. A further key objective is to develop the centre into a high-quality training environment for basic and clinical research in allergy and asthma. Clinical training in this field is very limited in the UK and the centre will play a major role in building the capacity of those trained in the specialty. The centre will also provide authoritative public information on asthma and allergy in conjunction with stakeholders and partners.

MRC Centre for Neurodegenerative Research at the Institute of Psychiatry at King’s College London

Professor Brian Anderton is the Director of this centre, which has the mission to understand further the mechanisms involved in neurodegenerative diseases and to translate this into new treatments, new biomarkers and improved understanding of the signs and symptoms of these diseases.

A key goal of the centre is to carry out translational research. Clinical investigations will inform laboratory research as clinical and genetic studies will pinpoint molecules and processes for further investigation using proteomic, molecular, biological and transgenic approaches. In turn, these laboratory investigations will provide information for diagnostic and therapeutic approaches, which will then be transferred back to the clinic. The span of scientific expertise at the centre, combined with the wide range of resources in a single institution, will enable the researchers to

<table>
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<th>MRC centres and directors</th>
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<td>Centre for Behavioural and Clinical Neuroscience at the University of Cambridge</td>
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<td>Centre for Developmental and Biomedical Genetics at the University of Sheffield</td>
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<td>Centre for Developmental Neurobiology at King’s College London</td>
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<td>Centre for Genome Damage and Stability at the University of Sussex</td>
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<td>Centre for Immune Regulation at the University of Birmingham</td>
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<td>Centre for Inflammation Research at the University of Edinburgh</td>
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<td>Centre for Medical Molecular Virology at University College London</td>
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<td>Social, Genetic and Developmental Psychiatry Centre at the Institute of Psychiatry, King’s College London</td>
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<td>Centre for Stem Cell Biology and Medicine at the University of Cambridge</td>
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<td>Centre for Stem Cell Research at the University of Edinburgh</td>
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<td>Centre for Synaptic Plasticity at the University of Bristol</td>
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undertake multidisciplinary and translational research into a range of neurodegenerative diseases.

Professor Anderton said: “The centre will bring together clinicians and basic scientists and foster a research environment in which they will work together and exchange ideas, in other words, translational research. This approach offers the best prospects for discovering new treatments for these progressive degenerative conditions, and will also provide excellent training opportunities for scientists and clinicians.”

The centre has access to some valuable resources, such as a collection of large clinical databases with linked DNA, protein and tissue resources for a range of neurodegenerative diseases, including Alzheimer’s disease and vascular dementia.

**MRC Centre for Nutritional Epidemiology in Cancer Prevention and Survival at the University of Cambridge**

Dr Sheila Bingham will direct this new centre, hosted by the Department of Public Health and Primary Care at the University of Cambridge and involving many other existing investments in Cambridge, funded by the MRC and others.

Key aims are to develop an international lead in research in the epidemiology and molecular aetiology of nutrition in cancer and to provide a more specific basis for intervention studies, public health advice and clinical guidance on treatment.

The centre will build on the development of a critical mass of basic scientists, nutritionists, epidemiologists and biostatisticians, and strong collaborations with seven key UK cohorts, based at the universities of Oxford, Cambridge, London, Leeds, York, Bristol and Sheffield, to understand the epidemiological foundations and molecular aetiology of the dietary causes of cancer. In doing so, the centre’s research will contribute to the prediction, prevention and amelioration of this common and often fatal disease. In addition, the centre will aid the development and transfer of new techniques and methodologies for the study of nutritional causes of other chronic diseases, such as diabetes and cardiovascular disease.

It is anticipated that the centre will provide a UK focus for multidisciplinary training in nutrition in cancer epidemiology.

After exposure to amyloid-β (A), immature neurons show gross morphological changes compared with control cultures (B). One task of Professor Anderton’s new centre will be to elucidate the sequence of events causing these changes in signal transduction, since this may identify novel targets to prevent the damaging and toxic effects of amyloid in the brain.

**Opportunities**

From 1 September 2005, the MRC will only accept applications costed on a full economic costing (FEC) basis. The EAA application form has been adapted accordingly.

**Board applications – May/June 2006**

<table>
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<tr>
<th>Infections and Immunity</th>
<th>Physiological Systems and Clinical Sciences</th>
<th>Neurosciences and Mental Health</th>
<th>Molecular and Cellular Medicine</th>
<th>Health Services and Public Health Research</th>
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* Normal decision point

**Calls for proposals**

**Experimental medicine**

Deadline for full applications Noon, 17.11.05

**Experimental medicine panel meetings**

March 2006

CROG panel meeting* March 2006

* Final decision point; CROG, Clinical Research Oversight Group

**MRC fellowships – closing dates**

- Special Training Fellowship in Health Services and Health of the Public Research 14.10.05
- Clinician Scientist Fellowship/Senior Clinical Fellowship 14.11.05
- Career Development Award 13.1.06
- Special Training Fellowship in Bioinformatics, Neuroinformatics and Computational Biology 13.1.06
- Clinical Research Training Fellowship (Round 2) 27.1.06
- Joint Collaborative Career Development Fellowship in Stem Cell Research 3.3.06
- Department of Health Clinician Scientist Award 1.5.06

**NC3Rs research grants**

The National Centre for the Replacement, Refinement and Reduction of Animals in Research (NC3Rs) invites grant applications from UK establishments for research that will advance knowledge and application of the 3Rs and laboratory animal welfare. The application deadline is 13 February 2006. For further information see www.nc3rs.org.uk
MRC enhances fellowship schemes for non-clinical scientists

Following its review of support for early-career non-clinical scientists last year, the MRC has revised two of its fellowship schemes. Network outlines the changes and the benefits for the research community...

At its July 2005 meeting the MRC’s Council approved changes to two MRC personal award schemes: Career Development Awards (CDA) and Senior Non-Clinical Fellowships (SNCF). The MRC Training and Career Development Board (TCDB) reviewed these schemes in June as the final phase of its review of MRC support for early-career non-clinical scientists that started in summer 2004 (reported in our Autumn/Winter 2004 issue). During the same period the Academy of Medical Sciences (AMS) was reviewing non-clinical research fellowships in the biomedical sciences. The AMS’s approach included focus group discussions with fellows sponsored by several funding bodies, including the MRC, and interviews with representatives of major funders.

Having completed its consultations, the TCDB decided to await the recommendations in the AMS’s report before making any changes to its own schemes. The board found that many similar themes emerged from the separate reviews – in particular, the need to view fellowships as an opportunity to develop a research career rather than a separate career track in their own right, and to promote better career planning and mentoring arrangements for fellows.

Career Development Awards
From the next round of CDA applications in January 2006, the duration of support available will increase from four to five years. This change is directly in line with the AMS’s recommendation that early-career fellowships should be for no less than five years, even if this means a reduction in the number of awards. This extra year of funding will give CDA holders more time to establish their research before having to apply for further support. Unfortunately, the MRC will not be able to provide extensions to existing CDA awards.

CDA holders will also be able to apply, as principal investigators, for MRC research grants during the course of their fellowship, provided the research grant work is clearly distinct from that already supported by the fellowship. This change will apply to existing and new CDA holders, and will provide a wider range of options for building up an independent research group during the fellowship.

Senior Non-Clinical Fellowships
MRC senior fellowships awarded from 2006 will no longer be renewable after the first five years of support. Instead, senior fellows will be encouraged to apply for long-term MRC grant support to follow on from the end of their fellowship. Research grants awarded under the new full economic costing rules will include payment for part of the principal investigator’s salary, calculated in proportion to the amount of time they work on the grant-funded research.

To help senior fellows make the transition to grant support, the MRC research boards and programme managers will provide feedback on outline applications and advice on the preparation of a full Research Grant application. This change will be phased in for existing senior fellows. Those with three years or less to run as fellows will have the option of applying either for renewal of the fellowship or for a research grant. This change is in line with the AMS’s view that fellowships should not be seen as a separate career pathway.

Over the coming months, the MRC will be discussing transitional arrangements with host institutions, with the intention of moving towards a requirement for higher education institutions to offer a permanent academic post to senior fellows, following successful completion of their SNCF.

Smoother transition
One further change, to apply to both schemes, is that if fellows are appointed to a permanent academic post during the course of their fellowship, either at the original host institution or elsewhere in the UK, they will be able to retain the remaining fellowship funding to continue supporting their research team. We hope that this change will help to ease the transition into permanent academic appointments for fellows at all levels. Career planning and mentoring requirements will also be improved for fellows on both schemes.

Find out more online
MRC fellowships
www.mrc.ac.uk/funding-fellowships.htm

Academy of Medical Sciences – The Freedom to Succeed: A review of non-clinical research fellowships in the biomedical sciences
www.acmedsci.ac.uk/AcdMedSc-Freedom%20to%20Succeed.pdf
Overseeing public health research

How is the MRC helping to improve the health of the nation? A number of recent initiatives includes a new group to oversee the MRC’s broad range of public health research…

Public health research is one of the MRC’s key priority areas. This reflects the rising profile and importance of public health policy and research in the UK following the publication of reports such as Securing Good Health for the Whole Population by Derek Wanless (February 2004) and Public Health Sciences: Challenges and opportunities by the Public Health Sciences Working Group convened by the Wellcome Trust (March 2004).

The Treasury-led Wanless report addressed the challenges to be faced if people are to be successfully engaged in protecting and promoting their own health. A key outcome of the review was the need for high-quality evidence to inform the development and evaluation of public health interventions and the recognition that this is currently limited. The Government’s subsequent Public Health White Paper Choosing Health (November 2004) highlighted a number of initiatives in public health research to help improve the health of the UK population.

How is the MRC contributing to addressing this national priority? The organisation has a strong record of supporting public health research and providing the evidence base through initiatives such as the Health of the Public call for proposals in 1999/2000 and, in partnership with the Department of Health, an annual call for Special Training Fellowships in Health Services Research and Health of the Public. The MRC Delivery Plan for 2005/06–06/07 builds on this background, highlighting public health research as one of the key priorities for the future.

Public Health Research Oversight Group

A new development is the creation of the Public Health Research Oversight Group (PHROG). PHROG will build on the past successes of MRC-funded research in public health to develop strategies to take the agenda forward and develop the MRC’s portfolio in this highly important area of research. This cross-board group, comprising the following members, includes representatives of key stakeholders and MRC units:

- Dr David Armstrong (Chair, and Chair of HSPHRB)
- Ms Catherine Conn (lay representative)
- Professor Sally Davies (Department of Health)
- Professor Carol Dezateux (Training and Career Development Board)
- Professor Ian Harvey (Health Services and Public Health Research Board)
- Professor Anne Johnson (Infections and Immunity Board)
- Professor Sally Macintyre (MRC Social and Public Health Sciences Unit)
- Dr Mary Manning (Academy of Medical Sciences)
- Professor Nick Wareham (MRC Epidemiology Unit)

At its first meeting on 28 June 2005, PHROG began considering how the MRC can best support the development of the evidence base to improve public health, and where its strengths and expertise can be used to maximum effect to provide leadership in addressing this national aim. Meetings planned for the coming months will develop and implement strategies for the future.

Population Health Sciences Network

An important element of the group’s strategic work is the imminent MRC Population Health Sciences Network, which is being set up to draw together existing MRC investments. This virtual network will create a focus for leadership, new research and support for public health elements of the UK Clinical Research Collaboration networks. Early discussions on its remit include the integration of expertise from units, cohorts and grant teams – the aim being to promote core methodologies for public health questions. Directorship of the network will rotate; the first Director Designate is Professor Sally Macintyre, who will also continue as Director of the MRC Social and Public Health Sciences Unit in Glasgow.

Another important forthcoming development is a call for proposals for methodological and implementation research, which the MRC is in the early stages of planning. Details will be available later this year at www.mrc.ac.uk.

Prevention through partnership

Collaborative efforts to address public health issues are also underway. The National Prevention Research Initiative (NPRI) was launched in October 2004 with a budget of £12m over five years for research into the primary prevention of cancer, heart disease and diabetes. Eleven organisations, including the MRC, sponsor this collaborative funding initiative that was brought together by the National Cancer Research Institute. The MRC manages the scheme on behalf of the partners. The first call for outline applications received an excellent response: 248 were submitted and assessed by the NPRI Scientific Committee, and 44 full applications are currently being peer-reviewed. Final funding decisions will be made in November 2005.
UK–China scientific exchange

A range of collaborative scientific activities between the MRC and its Chinese counterparts are underway. In July, MRC programme managers gained a unique insight into one organisation’s peer-review process…

This year the MRC is taking forward a programme of activities with equivalent organisations in China to help develop greater collaborative links between UK and Chinese scientists. Many activities are planned for October, when Professor Colin Blakemore and leading UK scientists will visit Beijing and Shanghai (see box).

And in advance of Colin’s trip, MRC programme managers Drs Delyth Morgan and Graham Cadwallader recently visited the National Natural Science Foundation of China (NNSFC) in Beijing – the first in a series of MRC-NNSCF initiatives aimed at promoting scientific exchange between the two organisations.

Delyth and Graham had the privilege of being the first overseas visitors to be invited to attend the annual peer-review meeting of the NNSFC’s Department of Life Sciences. The largest of the NNSFC’s seven departments, it has 18 divisions spanning a broad range of research, from ocean biology, agricultural and veterinary research, through to genetics, cellular and molecular biology, and on to translational and clinically orientated applications.

The NNSFC is the largest state-funded organisation in China to support investigator-initiated research, with a mission to “support creative research and foster talents in basic research in China.” While China is still considered by many to be a developing country in scientific terms, it is rapidly making up for lost time and is already internationally competitive in many areas. Under its policy of revitalising the country through science and education, the Chinese Government has sustained its increase of the NNSFC budget by 25 per cent per year since the foundation was established in 1986. The NNSFC’s annual budget currently stands at 2.7 billion yuan (£193m) and is expected to double within the next 10 years.

In recent years, the NNSFC has been developing its standards of evaluation and peer review to match that of other funding organisations worldwide. But while these processes are essentially very similar to those of the MRC, the difference in scale is vast. The Department of Life Sciences alone received a staggering 15,000 applications in 2005, all of which were independently peer reviewed by 6,244 reviewers. Application success rates vary between 15 and 20 per cent depending on the type, although the NNSFC intends to increase this percentage in the coming years.

...the future for research in China looks incredibly bright.”

Dr Graham Cadwallader

To review the applications, three days are devoted to the prestigious “key projects,” whereby substantial awards are provided for internationally competitive research. International competitiveness is a key feature throughout the NNSFC review process, and to assist in judging this, more than a third of the 150 invited experts this year were Chinese scholars based overseas. The remaining bulk of the applications fall under the category “general projects.” These smaller grants of shorter duration are reviewed by a separate group of 350 experts during the following five days.

For both sections of the meeting, panels operated within the confines of an 80:20 split between investigator-initiated “free” applications and those invited in pre-defined priority areas, such as stem cells, or research unique to China, for example the study of traditional Chinese medicine. This funding split is strategically decided every year, and varies from division to division. The visiting MRC programme managers concluded that it seemed a good system to maintain intellectual freedom while ensuring that priority areas are adequately addressed.

Thankful that many attendees were willing to translate for them, Delyth and Graham managed to get a good grasp of the proceedings. One aspect that struck them was the amount of high-quality applications from young researchers. As Graham said: “It was clear that a new generation of younger scientists who have developed their careers overseas have now returned to China with very impressive CVs – the future for research in China looks incredibly bright.”

Later this year Dr Ruijuan Sun from the NNSFC is due to make a reciprocal visit to the MRC. The MRC hopes she will be as impressed as the MRC delegates were with her organisation.

Autumn visit to China

The MRC, in partnership with a number of Chinese organisations, is holding a programme of activities in October in Beijing and Shanghai. Professor Colin Blakemore will lead a delegation of around 20 leading UK scientists to take part in the activities – which will include a series of scientific workshops involving leading UK and Chinese researchers, formal collaborative agreements, scientific lectures, public engagement events and activities in schools. Support for the MRC programme is being provided in part by the 2005 UK-China Partners in Science Initiative, which is sponsored by the UK Foreign and Commonwealth Office, the British Council and the Chinese Ministry of Science and Technology.

Find out more online

NNSFC
www.nsfc.gov.cn
UK-China Partners in Science
Provides further information about MRC activities and initiatives involving other UK Research Councils.
www.uk.cn/science
New Chair of European–African partnership

Dr Diana Dunstan, Director of Research Management at the MRC, is the new Chair of the EEIG Assembly of the European and Developing Countries Clinical Trials Partnership (EDCTP).

A unique global initiative, the EDCTP brings together European countries and African partners to combat the main poverty-related diseases, by developing new clinical interventions to tackle HIV/AIDS, malaria and tuberculosis, and by integrating European and African research relating to these diseases.

The EDCTP’s operative arm is EDCTP-EEIG, comprising the European Economic Interest Grouping (EEIG) Assembly and the Secretariat, which is the organisation’s day-to-day management body.

The EEIG Assembly, which comprises representatives of the European member states and Norway, has broad financial, governance and legal responsibilities for the EDCTP. It also gives final approval for strategic, operational and financial plans developed by scientists on the Partnership Board.

Administrative Efficiency Project

The Administrative Efficiency Project (AEP) has taken a radical look at how the MRC delivers administrative support to its institutes, units and head office.

In May 2005, the MRC’s Council approved a business case for setting up a Shared Service Centre (SSC) to carry out transactional and other processes for finance, human resources and procurement. The steering group established to oversee the preparation of the business case has been restructured and will oversee the project implementation phase.

The business case has identified savings of £2.5m a year of which £1.3m are cash savings that will release funds for research. In order to achieve these savings, about 75 posts will be relocated to the SSC and there will be a reduction of around 40 posts across the MRC. In line with its policy of avoiding compulsory redundancy wherever possible, the MRC has put in place a number of measures to minimise compulsory redundancies. These include opportunities for relocation and redeployment, as well as calls for volunteers for redundancy on compulsory terms.

Certain functions in finance and human resources will migrate from head office to the SSC. Seven new human resources and finance professional posts will be created to increase the support available to institutes and units on a regional basis. In addition, a new Head of Procurement, Mark Holroyd, has been appointed to lead a corporate procurement function, as the business case identified that considerable savings could be made by the strategic management of procurement across the MRC.

The MRC is also working with the other Research Councils to look at ways of achieving joint working in processing grant and fellowship applications from universities.

NIMR update

The business plan for the renewal of the MRC National Institute for Medical Research (NIMR) in partnership with University College London (UCL) was approved by the MRC’s Council in May and by the UCL’s Council in June.

Following the provision of some additional information on the proposed biological research facility, the MRC’s Council reconsidered the business plan at its July meeting and reaffirmed its support for the project. The Council agreed to commit £100m of its own resources towards the total estimated capital cost to the MRC of £240m. An application will be made to the Office of Science and Technology’s Large Facilities Capital Fund (LFCF) for financial support for the balance of the funding required. The MRC and UCL will also consider alternative sources of finance for the project to reduce the call on the LFCF. The outcome of the review of the LFCF should be known by January 2006.

Members of the NIMR project group have been considering measures to foster closer working relationships between the NIMR and UCL in the short term. These measures would focus primarily on new translational or multidisciplinary collaborations, and the group agreed that proposed schemes should be simple and use existing processes wherever possible. Measures being considered include the appointment of clinician scientists as programme leaders; enhanced funding to support new full four-year PhD studentships, including rotations through UCL and the NIMR; collaborative post-PhD clinical fellows; and small pump-priming grants to promote new interactions that could lead to full-scale projects. A formal request for funding for these measures is being developed and will be considered by the MRC’s Council in October.

The project group is also providing input into the process for recruiting the new Director of the NIMR. An advisory group, with representation from UCL, is to be established to assist with the recruitment process, and a selection panel will be drawn from the advisory group for the formal selection interviews in due course.

Genomics specialist goes independent

The MRC has given formal approval to a buyout by members of the management team of MRC geneservice. The new company, named Geneservice Ltd (www.geneservice.co.uk), is up and running and will supply genomic products and technical services to academic and commercial research organisations. Geneservice aims to be a one-stop-shop for gene discovery projects and its services include whole genome amplification, whole DNA sequencing, microsatellite and SNP mapping, and expression array analysis.

Contact: tweaver@geneservice.co.uk
Inflammation is a fascinating topic. While being a crucial part of our defence against infection and allergens, it is also central to a range of diseases that lead to a huge amount of ill-health and death, particularly in the developed world. Scientists now know that inflammatory disease of different organs — for example, asthma in the lungs, glomerulonephritis in the kidneys, and vasculitis and atherogenesis in the cardiovascular system — involve similar inflammatory and scarring processes. Even a normal process such as menstruation may in fact be akin to an inflammatory process. As Professor Chris Haslett, Director of the CIR, explains: "Inflammation and cardiovascular biology go together hand-in-glove. Inflammation cannot occur without the presence of blood vessels. And many diseases of the heart and blood vessels, such as atheroma, if this response fails to resolve (see box), chronic inflammation may lead to tissue damage and inflammatory disease. This transition from acute to chronic inflammation may occur because of defects in the resolution of inflammation. Research to date has indicated that resolution is an active process, involving suppression of the production of pro-inflammatory chemicals; blocking of the movement around the body of the cells involved in inflammation; promotion of apoptosis (see box); and the phagocytosis — literally the eating — of cells involved by other specialised cells called macrophages (see box). Apoptosis is defined in its strict sense as programmed cell death without initiation of inflammation — that is, without cells bursting to release cellular components to cause or amplify existing inflammation. These complex processes.

Because of these similarities, inflammation research has much to gain from a cross-disciplinary approach in which different specialist groups investigate these common mechanisms. And, as the range of inflammatory diseases continues to increase, there is an urgent need to develop new and more effective treatments. However, in the past relatively few clinicians and scientists have been trained in the scientific disciplines necessary to define the pathogenesis of these diseases.

Centre profile: MRC/University of Edinburgh

The MRC/University of Edinburgh Centre for Inflammation Research (CIR) is about to open in Edinburgh dedicated to inflammation research. Network visited the centre to find out more.

With this in mind, the CIR was created in 1999 under the directorship of Professor John Savill, building on the region's existing strengths in inflammatory cell biology research, the funding from other agencies, and the strong support and financial backing from the university. Over the last five years the centre's research capacity has grown steadily, through the appointment of Professor Chris Gregory, adding to the existing expertise of Professors John Savill, Chris Haslett, David Harrison, Neil Turner, John Mullins and David Porteous.

This year the CIR entered a new phase in its history. In July the centre was relocated in a new, purpose-built building — the Queen's Medical Research Institute for Medical Sciences (QMRI) — adjacent to the new Edinburgh Royal Infirmary at Little France, less than three miles south of the city centre. Under the directorship of Professor Haslett, the QMRI houses the CIR, the University of Edinburgh Centre for Reproductive Biology (incorporating the MRC Human Reproductive Sciences Unit) and the University of Edinburgh Centre for Cardiovascular Sciences. The result is the first UK institute ever to bring together the full range of research areas needed to get a complete picture of inflammatory processes and disease in the body's organs.

**Inflammatory issues**

Why is inflammation sometimes so destructive? The natural short-term or acute inflammatory response is a protective response to insult or injury, but...
The Queen’s Centre for Inflammation Research

take up a leading role in a new, multidisciplinary institute and more…

The aims of the CIR’s research are to characterise and manipulate these key control points in inflammation and to look at how inflammation is initiated. Furthermore, CIR scientists are investigating new approaches to promoting the beneficial regulation of established inflammatory responses in order to limit tissue injury. Another important area of research is aimed at understanding the molecular processes at work during normal resolution, as this will provide insight into inflammatory diseases in which these processes go wrong. And bringing the three research centres together under one roof has opened up exciting research directions, as there is such a close relationship between reproductive biology and inflammation. Professor Haslett explains: “Reproductive events that happen physiologically every month in women demonstrate the body’s natural potential for resolution of even massive inflammatory responses. We suspect that some reproductive diseases, such as dysmenorrhoea, spontaneous abortion and premature labour, could easily involve disorders in the control of inflammation. Our combined efforts should help people with these conditions.”

Quality training, quality facilities

Over and above its impressive research portfolio, the CIR aims to deliver added value within each major scientific goal. It achieves this in a variety of ways, including nurturing promising young scientists, stimulating research in strategic and priority clinical disciplines through training and using its strong science base to deliver new interface science.

The centre has an excellent record for training young clinician scientists, some of whom are from academically under-represented disciplines that are applicable to inflammation. Many clinical specialties, such as anaesthesia and intensive care, are national priorities for research development. An interesting new development in 2005 has been the recruitment of Dr Gareth Clegg, the UK’s first clinician fellow from accident and emergency medicine. There are also growing training opportunities for non-clinician scientists. The CIR has extended its three-year PhD studentship programme to a four-year programme focused on inflammation research. And the CIR has invested in two non-clinical fellowships for outstanding young scientists. After successful completion of their fellowships, these individuals will have guaranteed permanent academic research posts at Edinburgh University. These posts should attract candidates of truly international potential.

All scientists working at the QMRI will soon be able to enjoy superb imaging facilities that will greatly enhance the translation of discoveries in cells and molecules into therapies for human disease. The CIR hosts the new optical imaging suite, containing state-of-the-art confocal microscopy, cell sorting, laser capture dissection microscopy, as well as optical projection tomography – an exciting new technique developed by Dr James Sharp at the MRC Human Genetics Unit in Edinburgh. The adjacent Chancellors Building houses a small animal imaging centre that incorporates a 7.4 Tesla small-bore magnetic resonance imaging (MRI) scanner, and will also have micro positron emission tomography (micro PET). In addition, plans are well advanced for an integrative human imaging centre in the QMRI basement. This too will contain cutting-edge MRI, as well as a cyclotron and PET facility.

Translating science into patient benefit

The CIR has established itself as a base for clinical translational research and experimental medicine. Scientists are excited at working in an environment where patients suffering from diseases under research are at the same site. Young clinician scientists are motivated to become trained in research and initiate new research based on their clinical experiences. In turn, research discoveries in the laboratories filter through to benefit patients in the co-located hospital. This integration of basic research with the clinical problems allows research findings in cells and molecules to be taken,
potentially through animal models, into treatments to benefit patients.

For example, Dr John Simpson initially showed that gene transfer of the antimicrobial antiprotease elafin could protect the lining of the lung against injury using a cell culture model. He then developed the approach in sheep and discovered it dramatically protected the lungs. With £1m funding from the Sir Jules Thorn Charitable Trust his work is now being translated for the human problem of ventilator-associated pneumonia.

An exciting new area of research, which has emerged out of the three centres working together, is macrophage cell therapy. This ground-breaking technique, being developed by Drs David Kluth and Jeremy Hughes, could provide a crucial advance towards therapies for patients with chronic inflammatory diseases of, for example, the kidney and lung. The principle behind the new technique is to genetically alter the normal behaviour of macrophages, outside of the body, so that when they are re-introduced they perform new functions and quell the inflammation.

Other interesting new developments include research that uncovers relationships between cancer and inflammation. Professor Tariq Sethi has recently shown that the growth and spread of the devastating tumour, small-cell lung cancer, is critically controlled by apoptosis and by inflammatory proteins interacting with integrin receptors on the tumour cell's surface. Professor Chris Gregory has proposed that when tumour macrophages scavenge dying tumour cells, they become activated to suppress anti-tumour immunity – which could promote more tumours forming. A major aim of his team is to find a way of switching the activation state of these cells so they instead promote anti-tumour immune responses. Both these lines of research link naturally to the study of apoptosis – an internationally recognised theme of the CIR.

A wealth of opportunities

The good news for medical research in Edinburgh does not begin and end with the opening of the QMRI. Developments at the new institute have undoubtedly been a major catalyst in the creation of a major Biomedical Science Park next to the hospital, a partnership between the University of Edinburgh, Scottish Enterprise and City of Edinburgh. Land is currently being cleared for a £45m stem cell science building to be commissioned in 2008/09. So no wonder there is a buzz of excitement at Little France. With the integration of three internationally renowned research centres and the science park on the horizon, the possibilities for ground-breaking research to improve human health seem endless.

Centre for Inflammation Research groups

**Inflammation repair** / Professor John Savill
This group's research revolves around the role of cell death and macrophages in the resolution and repair of inflammation, particularly focusing on inflammatory disorders of the kidney. For example, they are looking at the roles of macrophages in injury and of inhibitory receptors in regulating macrophage-directed cell death.

**Lung inflammation** / Professor Chris Haslett
This group seeks to define the key control mechanisms of inflammation to lay the foundation for new treatments for inflammatory lung disease. Researchers are studying the effects of environmental agents on the lung, the role of macrophages in the control and resolution of inflammation, signalling pathways involved in small-cell lung cancer, and the development of new therapies for antibiotic-resistant pneumonia.

**Innate immunity** / Professor Chris Gregory
This group investigates the molecular interactions between receptors on macrophages which engulf apoptotic cells and the surfaces on the apoptotic cells themselves. Another research interest is to determine how molecular mechanisms of apoptotic-cell clearance regulate inflammation, e.g. in lung, kidney and cancer.

**Immunobiology** / Dr Sarah Howie
The main interests of this group are the role of developmental genes in regulating immune responses, and how the immune system contributes to chronic inflammatory disease. Current research includes looking at the interplay between immune systems and cells within healthy and diseased lungs.

**Cell injury and apoptosis** / Professor David Harrison
This group studies the cellular response to injury in liver, lung and tumours as model systems. For example, they are looking at how different cells lining the lung are damaged after injury, and the role each cell type plays in repairing the damage.

**Comparative inflammation** / Professor Hugh Miller
The immune responses to nematodes have all the hallmarks of an allergic reaction, as the process of rejecting a parasite involves a range of inflammatory mediators. This group's aim is to understand how mast cells are recruited in large numbers and how they function in parasitised intestinal lining.

**Autoimmunity** / Professor Neil Turner
The interest of this group is the development of autoimmune kidney disease, particularly Goodpasture's disease. The group's research focuses on the interactions between the antigen-presenting cells and T-cells in the autoimmune response and their manipulation for therapy.

**Gene therapy** / Professor David Porteous
The group is interested in the role of gene therapy in treating disease, particularly in cystic fibrosis. For example, the group has developed mass spectroscopic (SELDI TOF) analysis to find biomarkers that indicate if airway inflammation is being suppressed after the process of gene transfer.

**Cardiovascular biology** / Professor John Mullins
The group integrates molecular biology, genetics and physiology to investigate molecular and cellular mechanisms of cardiovascular disease. The central theme is the study of the regulation of key genes involved in controlling blood pressure.
Banking on brain tissue

To advance our understanding of neurodegenerative diseases, researchers need a reliable source of brain tissue. **Network** takes a look at an MRC-funded example...

The MRC London Brain Bank for Neurodegenerative Disease supplies the national and international scientific community with postmortem brain tissue for research into a broad range of neurodegenerative diseases. The Bank is a member of BrainNet Europe II – a consortium of 19 brain banks in 11 countries working to standardise and harmonise tissue banking and neuropathological diagnosis throughout Europe. Since its establishment in 1989 at the Institute of Psychiatry (IOP), King’s College London, the Bank has responded to over 1,000 requests for tissue.

Directed by Dr Safa Al-Sarraj, consultant neuropathologist and head of the Department of Clinical Neuropathology at King’s College Hospital, the Bank has more than 2,000 samples. Alzheimer’s disease and dementia represent the largest disease collections, followed by HIV and motor neuron disease. There are a number of smaller neuropathology collections, including Pick’s disease, motor neuron disease-inclusive dementia, multiple system atrophy, Parkinson’s disease, Huntington’s disease, and other neurological disorders such as autism and Rett syndrome.

**Disease discoveries**

Most donors are recruited through clinical cohort studies at the IOP. The Bank also receives ad hoc donations through patient support networks and charities, as well as directly from donors’ next of kin.

“The tissue that we have supplied to researchers has contributed to significant advances in treatment protocols for conditions such as Alzheimer’s disease. It has helped us to identify new disease categories that were unknown 10 or 15 years ago, such as variant Creutzfeld–Jacob disease,” said Bank co-ordinator, Dr Saliha Afzal. “We’ve also played a key role in identifying morphological variations and heterogeneity in familial dementias and movement disorders.”

The stored tissue is either frozen in slices or formalin-fixed, some of which is later processed as paraffin wax sections. The fixed tissue is used for pathological diagnosis in the IOP’s Department of Clinical Neuropathology, and then made available to the research community.

Dr Eirini Meimaridou, a post-doctoral scientist at the IOP investigating novel biomarkers for the early detection of Alzheimer’s disease, is one of many who have benefited from the Bank. She said: “We use DNA microarray technology to investigate differential gene expression in Alzheimer’s disease, so a source of well-characterised brain tissue is crucial for allowing us to monitor the expression of thousands of genes in many samples.”

**Sample resurgence**

To date, most tissue requests have been for either fresh frozen tissue or paraffin wax sections, with the formalin-fixed tissue remaining largely unused. However, the introduction of new techniques to extract DNA from formalin-fixed tissue and the move towards high-throughput genomic and proteomic technologies could open up the possibility of converting this vast collection of unused tissue into a DNA Brain Bank.

Last year, the Government passed the Human Tissue Act which granted permission for researchers to use samples stored in archival collections, subject to approval by Local Research Ethics Committees. “The potential value of this rich resource for public health improvement programmes is immeasurable,” says Simon Lovestone, Professor of Old Age Psychiatry at the IOP. “For the first time, we will be able to bring together the large, richly described historical archives with new molecular technologies. For example, we might be able to do large studies on samples going back decades to look for genes that increase risk of particular types of dementia – studies that are difficult to do without pathological confirmation.”

**MRC-funded brain tissue banks**

- **MRC London Brain Bank for Neurodegenerative Disease**
  - [www.iop.kcl.ac.uk/?locator=380](http://www.iop.kcl.ac.uk/?locator=380)
- **The Edinburgh Brain and Tissue Bank for Investigation of Sudden Death**
- **MRC HIV Brain and Tissue Bank in Edinburgh**
  - [www.hivbank.ed.ac.uk](http://www.hivbank.ed.ac.uk)
- **The Newcastle Brain and Tissue Resource**
  - [www.ncl.ac.uk/iah/research/brain/nbtr/](http://www.ncl.ac.uk/iah/research/brain/nbtr/)
- **MRC Cognitive Functioning and Ageing Study (CFAS) Brain Tissue Resource**
  - [www.cfas.medschl.cam.ac.uk/biological_resource.htm](http://www.cfas.medschl.cam.ac.uk/biological_resource.htm)

**Find out more online**

- The MRC London Brain Bank welcomes requests for tissue samples.
- Contact: Dr Saliha Afzal, Brain Bank Co-ordinator, ASB, 4 Windsor Walk, The Institute of Psychiatry, London SE5 8AF
- Email: Brainbank@iop.kcl.ac.uk
Exercise best for back pain

Patients suffering from chronic low back pain may obtain nearly as much benefit from a programme of intensive physical exercise as they would from spinal surgery. These results from the MRC spine stabilisation trial should help doctors and service providers make decisions about the best management for this population. Mr Jeremy Fairbank of the Nuffield Orthopaedic Centre in Oxford led the clinical trial that involved 15 hospitals in England and Scotland. A total of 349 patients aged 18–55, who had suffered chronic low back pain for at least a year, were randomly assigned either to undergo spinal fusion surgery or to partake in a three-week intensive programme of rehabilitation, involving daily exercises and cognitive behaviour therapy. After two years, patients in both groups had improved, experiencing less pain and disability and more mobility, with patients receiving surgery first having a slightly better clinical improvement. Of those allocated to rehabilitation, 29% eventually had spinal surgery. A concurrent study of healthcare costs over the two years suggested that the surgery-first strategy is twice as expensive as undergoing intensive rehabilitation first. Mr Fairbank said: “Our results suggest that patients eligible for surgery should be offered this type of rehabilitation programme first. We believe it is safer and cheaper than using surgery as the first line of treatment, when conventional physiotherapy and alternative therapy have failed.”

BMJ 330: 1233-1239, 1239-1243

Cellular detox

Little is known about the factors that influence the decline in neural function in neurodegenerative disorders. But researchers at the Cambridge Institute for Medical Research, the MRC Mammalian Genetics Unit at Harwell, and the University of Cambridge have made an important discovery about the molecular mechanisms involved. They found that tiny molecular motors called dyneins – known to play a part in moving proteins around inside nerve cells – are also crucial in transporting toxic proteins to the cells’ waste disposal units. When dynein activity was blocked in cell lines, flies and mice, by using chemical or genetic modification, the waste disposal system stalled, allowing toxic proteins to build up to potentially damaging levels more rapidly. Such accumulation of toxic protein is characteristic of neurodegenerative diseases. The researchers’ finding supports their earlier idea that a key factor modulating the severity of these conditions is the rate at which the relevant toxic proteins are removed. The hope is that by enhancing the degradation of these proteins that form clumps, the onset of disorders such as motor neuron disease and Huntington’s disease could be delayed. Dr David Rubinsztein, lead researcher, said: “These findings contribute greatly to our understanding of possible therapeutic strategies for these diseases.”

Nature Genetics 37: 771-776

Red meat and cancer – the evidence

A diet high in red and processed meat raises the risk of bowel cancer by as much as a third. A link between red meat and this cancer has been suspected for some time, but now a major study from the European Prospective Investigation into Cancer and Nutrition (EPIC) has provided strong evidence. The 10-year study has looked at the dietary habits of more than 500,000 people throughout Europe. The results showed that people who regularly ate more than two 80g portions of red or processed meat a day had a 35 per cent greater risk of bowel cancer than those who ate less than one portion per week, a low-fibre diet increases the risk of developing the disease, and eating poultry has no effect. Other findings are that people who eat fish at least once every other day reduce their risk of bowel cancer by a third compared to those who consume fish less than once a week.

Principal investigator, Dr Sheila Bingham, of the MRC Dunn Human Nutrition Unit in Cambridge, said: “This is one of the largest studies worldwide and the first from Europe to show a strong relationship between red meat and bowel cancer.”

J Natl Cancer Inst 97: 906-916

Genetic link can influence antisocial behaviour

Antisocial behaviour in children who show a lack of remorse and empathy is largely inherited. This finding is the result of an extensive study involving 3,687 pairs of seven-year-old twins. Led by Dr Essi Viding of the MRC Social, Genetic and Development Psychiatry Centre at the Institute of Psychiatry, London, the research looked at the extent to which antisocial behaviour in children with and without psychopathic tendencies was caused by genetic and environmental risk factors. Teacher ratings for antisocial and callous–unemotional behaviours were used to classify the twins. Those rated in the top 10 per cent for antisocial behaviour were separated into two groups – those with and without psychopathic tendencies. The analysis revealed that in children with psychopathic tendencies, antisocial behaviour had a strong genetic influence, whereas in children who did not show such tendencies it was mainly influenced by the environment. The work has important
Old thrombosis drug outstrips the new
A landmark clinical trial has found that a new drug for treating essential thrombocythaemia is less effective and more expensive than the drug it is designed to replace. Essential thrombocythaemia is characterised by the over-proliferation of certain blood cells, leading to an increased risk of thrombosis and bleeding. In the longer term, patients may also develop leukaemia or scarring of the bone marrow. During the seven-year MRC-funded study, Professor Tony Green and colleagues at the University of Cambridge and Addenbrooke’s Hospital compared the new drug, anagrelide, with the existing drug, hydroxyurea, in 809 patients who were at risk of thrombosis. All participants took low-dose aspirin with either anagrelide or hydroxyurea for an average of 39 months. The results showed that the anagrelide plus aspirin combination was associated with a significantly increased risk of arterial thrombosis, bleeding, and transformation to myelofibrosis. Other benefits of the older drug are that it is considerably cheaper than the new alternative and had fewer side effects. Professor Green and his colleagues concluded that hydroxyurea should remain the first line of treatment for patients with essential thrombocythaemia who are at risk of thrombosis – a move that could save the Government up to £22m a year.


Hib vaccination success in The Gambia
Haemophilus influenzae type b (Hib) is a major cause of meningitis and bacterial pneumonia in children. The World Health Organization estimates Hib infects three million children each year, causing death and disability. A five-year prospective study, led by Dr Richard Adegbola of the MRC Laboratories in The Gambia, has shown that it is possible to eliminate the disease through routine vaccination in developing countries. Following a successful, large-scale trial of a Hib conjugate vaccine in The Gambia during 1993–95, routine vaccination of infants was introduced in the country in 1997. Dr Adegbola’s team investigated whether the vaccination success seen under the optimum conditions of the trial would be replicable in the real-life setting of the routine vaccination programme. They found that although a third of the children received less than the full three-dose course, the annual incidence of meningitis dropped from 200 to zero cases per 100,000 infants younger than one year, and from 60 to zero cases in children younger than five years, within five years of the start of the vaccination programme. Dr Adegbola said: “Our study shows that despite an irregular vaccine supply, elimination of Hib disease is possible. We hope other countries in sub-Saharan Africa, who might have been reluctant to introduce routine Hib vaccination programmes, will now be encouraged to do so.”

Lancet 366: 144-150

Muscle-building satellite cells
Muscle-wasting conditions, such as the muscular dystrophies, lead to disablement and often to early death. Investigations into muscle repair and regeneration at the MRC Clinical Sciences Centre (CSC), London, and University College London have shed light on the underpinning mechanisms, and could provide a new lead for regenerative therapies. It has long been suspected but never proved that satellite cells – which adhere to mature muscle fibres – make new muscles. The researchers have now conclusively shown that satellite cells are responsible for muscle repair, and possess the self-renewing properties of stem cells. Using a modified technique, the scientists grafted five to 25 mouse satellite cells into degenerating muscles. They found that for each grafted satellite cell, 1,000–10,000 times more new muscle was produced than had been obtained in earlier experiments. In addition, some of the grafted cells replicated themselves, expanding their population by at least 10 times. And the newly generated satellite cells were robust, being able to regenerate themselves and new muscle over at least two subsequent rounds of muscle damage. Professor Terence Partridge, lead investigator at the CSC, said: “The local environment seems to be critical for the satellite cells to retain their self-renewing properties. A greater understanding of what controls these cells will help us devise rational ways of modifying systems in which muscle regeneration is failing.”

Cell 122: 289-301

Implications for programmes that aim to prevent antisocial behaviour continuing into adulthood. As Dr Viding comments, “The discovery that antisocial behaviour linked with psychopathic tendencies is strongly heritable suggests that we need to get help for these youngsters early on. Strong heritability does not mean that nothing can be done, as children are open to protective environmental influences which can buffer the effects of genetic risk.”

J Child Psychol Psychiatry 46: 592-597
Infections and immunity research showcase

A recent MRC “showcase” hosted at the NIMR brought early-career scientists together with senior scientists in their field and members of the public to discuss emerging and exciting new science.

On 29 June the MRC Infections and Immunity Research Board (IIB) held a day-long event to promote the work of its newer researchers in universities and MRC units and to give them the opportunity to share ideas with members of the research board in a lively, informal setting. More than 145 people attended the event at the MRC National Institute for Medical Research in north London. Many were younger scientists keen to find out about the research of their own MRC peers and to generate discussion about their own work. Also present were staff from MRC head office, on hand to give specialist advice on topics such as learning and development, research career awards and technology transfer.

A selection of superb science

Researchers from MRC units and centres in Birmingham, Cambridge, Glasgow, London, Oxford, The Gambia and Uganda and from universities and hospitals across the UK presented posters on a vast cross-section of research – ranging from advances in T-cell receptor/MHC allorecognition, through the molecular biology of the human papillomavirus life cycle, to Hib immunisation programmes in The Gambia. As Professor Andrew McMichael, Chair of the Infections and Immunity Research Board, commented, “The quality of the science has been excellent, across such a broad range of posters. It’s a shame the event isn’t being held for longer.”

Clinical epidemiologist, Sheena McCormack, told Network, “It’s really good to see the range of research going on in basic science as well as my own area of clinical research. I’ve learnt a lot!”

A challenge for the judges

To round off the day Professor McMichael presented the prizes for the “most exciting science,” which was judged by a panel of research board members, and for the “most accessible and interesting lay summary,” judged by a group of science communicators, journalists and members of the MRC Advisory Group on Public Involvement.

The scientific judges had a formidable task, faced with 80 posters spanning a diversity of topics, but after careful deliberation identified a top eight (see box). The winner was Mr Symon Wandiembe, from the MRC/UVRI Uganda Research Unit on Aids (Entebbe, Uganda) for his poster “Working with HIV discordant couples to evaluate innovative HIV prevention strategies.” The judges were impressed by the way Symon had tackled the difficulties of identifying, recruiting and working with couples in which only one partner was HIV-positive. Although part of a larger trial, his pilot trial was very much his own work and considered likely to have a major impact on further studies to reduce HIV transmission.

Plain speaking

The entrants had the additional challenge of including a lay summary in their posters, a component that reflects the MRC’s increasing focus on public engagement. They also had to talk about the summaries with the lay summary judges. While the panel felt that some of the written summaries suffered from unnecessarily obscure terminology, they found the face-to-face discussions clear and fluent. Out of a very close top four, the overall winner for the most accessible and interesting lay summary was Dr Daniel Davis, of the Department of Biological Sciences, Imperial College London, for his poster “Nanotubes and synapses in immune cell communication.” The judges agreed that Daniel had taken highly technical material and had delivered

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<th>Most exciting science posters</th>
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<td><strong>Winner</strong></td>
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<td>Rachel Whalen</td>
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<td>Ben Willcox</td>
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it well and without jargon in a visually interesting way.

Talking points
In between poster sessions, delegates heard about the latest research developments from three research leaders. Dominic Kwiatkowski, MRC Professor at Oxford University, talked about genetic discoveries that are providing clues about humans’ susceptibility to malaria. Professor Kwiatkowski provided an intriguing account of the evolutionary pressure that malaria exerted on our ancestors – shown by the fact that the sickle haemoglobin gene has been conserved because it confers resistance to malaria. However, this comes at a cost – people with two copies of the gene have sickle-cell anaemia. By delving into the genomic basis of resistance to malaria, the aim is to reveal new molecular pathways for immunity, which will provide insights for the development of vaccines.

The next talk, given by Dr Di Gibb of the MRC Clinical Trials Unit in London, looked at how best to treat patients with antiretroviral drugs in Africa. Dr Gibb described the progress of the DART trial – the first and largest randomised trial in Africa to address important questions about the management of antiretrovirals in settings where resources are limited. Involving 3,300 patients, the five-year study is a collaboration between the MRC Clinical Trials Unit (London), the MRC/Uganda Virus Research Institute (Entebbe, Uganda) the Joint Clinical Research Centre (Kampala, Uganda), the University of Zimbabwe and Imperial College London. It is investigating whether therapy can be given safely and effectively with clinical monitoring only, in the absence of routine laboratory tests, and whether antiretrovirals can be given intermittently to patients with good immune recovery to reduce costs and toxicity.

Dr Tracy Hussell of Imperial College London spoke about whether our lungs are ready for the next influenza virus pandemic. Dr Hussell, who has recently completed a Career Establishment Grant and been awarded her first Research Grant by the IIB, is focusing on how to prevent the debilitating effects of the flu virus. She described two strategies: before infection, educating the lung’s cells to regulate incoming inflammatory cells, which would prevent the disease developing clinically; and reducing the body’s inflammatory response while fighting the virus, which would help to reduce flu symptoms such as weight loss.

The MRC’s first showcase saw a wealth of very promising emerging research in infections and immunity. It was an ideal setting for recently established scientists to explore new areas of research with their peers and board members – as one attendee said, “It was excellent. Other boards should hold similar events.” And judging by the success of the pilot event, we can expect to see other MRC research boards adopting this approach to fostering scientific communication and networking in the future.

Most accessible and interesting lay summaries

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<th>Winner</th>
<th>Nanotubes and synapses in immune cell communication</th>
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<td>Daniel Davis</td>
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<td>Runners up</td>
<td>Production of infectious human papillomavirus type 16 in monolayer cell culture</td>
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<td>Viviane Bechtold and Kenneth Raj</td>
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<td>Tracy Hussell</td>
<td>Are our lungs ready for the next influenza virus pandemic?</td>
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<tr>
<td>Mala Maini</td>
<td>Altered gene expression profile in hepatitis B virus-specific CD8 T-cells associated with chronicity</td>
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Events diary

**You know it makes sense**

You know it makes sense is an interactive event sponsored by the MRC as part of Making Sense: Experiencing the world around us at the Science Museum’s Dana Centre (www.danacentre.org.uk).

Drawing on a modern performance of Little Red Riding Hood, scientists will attempt to deceive and stimulate participants’ senses using one of the five “sense stations.”

The event is on **13 October 2005** and is free, but places must be booked. Call 020 7942 4040 or email tickets@danacentre.org.uk

**A Day in the Life of a Scientist – photography exhibition**

David Bennett’s photographs capture some of the ordinary and the extraordinary aspects of a scientist’s day, including that of MRC Professor Dame Nancy Rothwell FRS. Curated by science communicator, Dr Erinma Ochu, the exhibition was commissioned by the Manchester science group (www.manchesterscience.blogspot.com) and supported by a Wellcome VIP Award and the University of Manchester.

Visit the exhibition during **3 September to 16 October 2005** at Manchester Museum, Oxford Road, University of Manchester (http://museum.man.ac.uk).

If you are a researcher interested in being involved in an extension of this project, please contact Fatima de Abreu at fatima.de-abreu@headoffice.mrc.ac.uk.
New faces

Professor Rory Collins has been appointed as the new Chief Executive and Principal Investigator of UK Biobank as of 1 September 2005. Professor Collins brings with him a wealth of experience in directing large multicentre, multidisciplinary studies that have shaped modern public health strategies and clinical practice. He currently holds a series of high-profile posts, as British Heart Foundation Professor of Medicine and Epidemiology at the University of Oxford, and Co-director, with Professor Sir Richard Peto, of the MRC/Cancer Research UK/BHF Clinical Trial Service Unit & Epidemiological Studies Unit in Oxford. UK Biobank is a long-term project, started in 2003, to support research into the influence of genetic, environmental and lifestyle factors on human health and disease.

Professor Glyn Humphreys has been elected as the Chair of the MRC’s New Investigator Award Panel. Professor Humphreys has been a member of the panel since 2004, and commenced his new three-year post from June. Head of the School of Psychology at the University of Birmingham, Professor Humphreys is a leading cognitive psychologist, with broad research interests in visual cognition, cognitive neuropsychology and computational modelling of normal and disordered cognition. As part of an MRC-funded project, he recently revealed the role of a region in the brain, namely the temporo-parietal junction, in human’s ability to reason about others’ beliefs.

The MRC has recently welcomed two new faces to the Corporate Affairs Group at head office. Chief Press Officer John Davidson comes from the BBC, where he has worked in the Radio Newsroom for eight years. John produced bulletins for programmes including Today on Radio 4, Terry Wogan’s Radio Two breakfast show, and Drive on 5 Live. He studied journalism and freelanced at the Law Society Gazette and Radio WM in Birmingham. John has also worked on TV news summaries, including the attack on the World Trade Center, New York in September 2001 and the recent terrorist bombings in London. Press Officer Ruth Whitbread also hails from the BBC, where she was a radio producer for seven years for the BBC World Service, working on education and English-teaching programmes. Ruth also worked on science, medical and environmental series and was seconded to the BBC Radio Science Unit for six months, where she produced a live health phone-in for Radio 4 and science news reports. She then trained in press work at the BBC corporate press office and in BBC marketing strategy.

Infowatch

What Scientists Think – edited by Jeremy Stangroom

What do scientists think about the working of the brain, climate change, animal experimentation, cancer, and mental illness? Is science progressing or in retreat? These are just some of the compelling and provocative questions tackled by 12 of the world’s leading scientists and scientific thinkers, including MRC Chief Executive Colin Blakemore.


SciTalk is a new website and database that brings scientists and writers together, to give fiction writers the possibility of writing about science and scientists with more accuracy and fewer stereotypes. As Sir John Sulston FRS, former Director of the Sanger Centre, said: “This is a great initiative. It will allow writers to get to know scientists as real human beings, and so portray scientific work in a fresh and vivid way.”

www.scitalk.org.uk

www.mrc.ac.uk

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