MRC Medical Research Council

Annual Report and Accounts 2004/05

Medical Research Council

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Presented to Parliament by the Secretary of State, and by the Comptroller and Auditor General in pursuance of Schedule 1, Sections 2(2) and 3(3) of the Science and Technology Act 1965.

Sir Anthony Cleaver
Chairman

Professor Colin Blakemore
Deputy Chairman and Chief Executive

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The MRC

The Medical Research Council (MRC) was set up in 1913 to administer public funds provided for medical research. It was incorporated under its present title by Royal Charter in 1920. A supplemental charter wasgranted in 1993 describing the MRC's new mission following the 1993 Government White Paper on Science and Technology. The MRC's Royal Charter and Mission were amended in July 2003. The MRC receives an annual grant-in-aid from Parliament through the Office of Science and Technology (OST) and funds from other sources including government departments, international agencies, industry and medical research charities.

The MRC's strategic aims are developed in consultation with stakeholders and with reference to the mission enshrined in the MRC Charter and to the objectives set out in the Government's Science Budget allocations for the period 2003/04 to 2005/06. They also contribute to the OST Public Service Agreement target of improving the international performance of the UK's science and engineering base, exploitation of the UK science base, and the innovation performance of the UK economy.

The MRC's mission is to:

- Encourage and support high-quality research with the aim of improving human health.
- Produce skilled researchers, and to advance and disseminate knowledge and technology to improve the quality of life and economic competitiveness in the UK.
- Promote dialogue with the public about medical research.

This Annual Report describes the MRC's progress between 1 April 2004 and 31 March 2005 in meeting our strategic aims set out in the MRC Strategic Plan 2004–2007 and the objectives set out in the Government's Science Budget allocations for the period. A selection of outstanding achievements by MRC scientists during the year is highlighted in the MRC Annual Review 2004/05.

For more information about MRC activities and to view MRC publications, visit www.mrc.ac.uk.

MRC Council members 2004/05

The role of the MRC's Council is to decide on all issues of major corporate importance.These are principally issues of corporate strategy, objectives and targets or relating to the use of resources and personnel issues, including key appointments. Council members share collective responsibility for the MRC's actions and performance. Responsibility for implementing the Council's strategy and decisions is delegated to the Chief Executive, Professor Colin Blakemore.

Sir Anthony Cleaver
Chairman

Professor Colin Blakemore
Deputy Chairman and Chief Executive

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King's College London

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Mr John Neilson**
Office of Science and Technology, observer

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Professor Genevra Richardson
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University of Edinburgh

Professor Herb Sewell*
University of Nottingham

Professor Michael Wakelam*
University of Birmingham

** New member appointed 1 August 2004*
*** New member appointed 1 February 2005*

Outgoing membership:

Sir William Castell*
Amersham plc

Professor Dick Denton*
University of Bristol

Dr Chris Henshall**
Office of Science and Technology, observer

Professor Ian MacLennan*
University of Birmingham

Professor Sir John Pattison*
Department of Health

Professor Dame Nancy Rothwell*
University of Manchester

** Appointment ended on 31 July 2004*
*** Appointment ended on 31 December 2004*

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Sir Anthony Cleaver
Chairman

Professor Colin Blakemore
Deputy Chairman and Chief Executive

Consolidation and strategic planning for the decade ahead have been major themes for the MRC this year, particularly in view of the changes that the MRC made to its funding schemes and decision-making bodies at the end of 2003/04. Our intention was to create simpler and more flexible funding options for researchers and to set up the structures needed for strategic development of the MRC's research portfolio, informed by the views and capacity of the research community. After just one year we are pleased to be able to report some rewarding signs of progress on both these fronts.

The new grant schemes have been well received by the scientific community, with application rates increasing three-fold over last year. The increase in demand is largely due to the flexibility of the new Research Grant, which offers support of between one and five years or longer. The amount of funding that the MRC made available and committed to new grants was almost double that of 2003/04 and this enabled us to maintain the proportion of the highest-quality applications that we were able to fund. The New Investigator Award, designed to help young scientists achieve a place on the research career ladder, also proved popular. We received applications from 140 candidates, many of which were of a very promising calibre, and were able to make 24 awards. We plan to expand this scheme in 2005/06.

In July the MRC welcomed the Government's long-term commitment to British science demonstrated by its 10-year Investment Framework for Science and Innovation. The framework provides the context for a proposed 5.8 per cent per annum increase in public funding of science, which is of course excellent news for medical research.

We ensured that our strategic thinking and planning during the year complemented the Government's longterm ambitions for science, which led to an additional £90m for the MRC in the 2004 Spending Review. £25m of this funding is earmarked to enable us to increase our support for clinical research and experimental medicine, including promoting the translation of research results into clinical practice. Of course, we remain committed to supporting basic research, from which the treatments of the future will originate, and we shall be monitoring carefully the ratio of basic to translational research funding.

Another portion of our additional funds will allow us to provide 80 per cent of the full economic cost of research grants for applications received after 1 September 2005 – a direct and tangible benefit for university scientists throughout the UK. And to help build the UK's next generation of medical research leaders, we will be using £8m to take forward the recommendations of the Roberts Review.

To increase coordinated working between public funders of medical research, the MRC and the Health Departments have formed a Joint Health Delivery Group that is now drawing up a delivery plan for health research. The new UK Clinical Research Collaboration, involving the NHS, academic medicine, funders, representatives from industry and patients, is another key example of our work with partners during the year. We have been collaborating with our UKCRC partners on a multi-million pound initiative to provide a major boost to UK experimental medicine, with the aim of developing

new treatments for patients and new approaches to prevention.

The NIMR Task Force, which has been developing proposals for the future of the MRC National Institute for Medical Research, completed its work in July 2004. When assessing the Task Force's final report, the MRC's Council decided that it had put forward a compelling and convincing vision for the future of the Institute as a multidisciplinary biomedical research facility focused on basic and translational research. In February 2005 the Council selected University College London as the preferred partner. A business plan is now being developed by the NIMR, University College and MRC head office.

Other major investments this year included the establishment of the MRC Cambridge Centre for Stem Cell Biology and Medicine, established in partnership with the Juvenile Diabetes Research Foundation International. The centre will generate new insights into basic biology underpinning the development of stem cell treatments for diabetes and diseases of the brain, including Parkinson's disease and multiple sclerosis.

July 2004 saw another landmark for UK stem cell science, when the health minister officially opened the UK Stem Cell Bank at the National Institute for Biological Standards and Control. The opening day coincided with the deposit of the UK's first two human embryonic stem cell lines, developed by researchers at King's College London and at the Centre for Life in Newcastle.

We are pleased to report another highly successful year in innovation and knowledge transfer. Cash income from licensing increased substantially, from £15.2m in 2003/04 to £28.5m in 2004/05 – largely the result of higher royalty income under patent licences in antibody engineering and humanised antibodies. In December 2004, the MRC's Council approved plans for the creation of a Drug Development Group. This major initiative will span the full range of research fields funded by the MRC, including neglected disease areas that the pharmaceutical industry considers to be too high-risk. MRC spin-out companies flourished; for example, in March 2005 Ardana Ltd was floated directly on the London Stock Exchange.

Public engagement continued to feature prominently in the MRC's work during 2004/05. Many of our scientists took part in National Science Week, the British Association Festival, Cheltenham Science Festival, the Edinburgh International Science Festival and Brain Awareness Week at the Dana Centre at London's Science Museum. This year we introduced a small grant scheme to support our scientists' activities during National Science Week. As a result, we funded proposals for an interactive exhibition on the senses at Manchester Museum and a series of microbiology workshops for school children, in partnership with the Biotechnology and Biological Sciences Research Council and the Natural Environment Research Council.

As the MRC embarks on implementing the strategic plans developed during 2004/05, we would like to thank the many external partners and stakeholders who have informed our thinking. We look forward to seeing our joint endeavours bear fruit, bringing major benefits for health and quality of life both in the UK and throughout the world.

Chairman

Deputy Chairman and Chief Executive

Executive summary

Support for research

- The MRC spent £251m (£222.6m resource and £28.4m capital) on intramural support.
- The MRC's total spend on grants for research in universities and teaching hospitals was £134.1m.
- A major focus during 2004/05 was the development of a renewed strategy for clinical research and public health.
- MRC units and institutes published over 2,000 papers in peer-reviewed journals in the calendar year 2004.
- The MRC spent £50.4m on training awards for postgraduate students and fellows (intramural and extramural).

Partnerships

- The MRC played a central role in the UK Clinical Research Collaboration (UKCRC), which aims to speed up the translation of scientific discovery into improved healthcare. We set up the Clinical Research Advisory Group to develop recommendations on ways to deliver the clinical research agenda and to guide the MRC's role in the UKCRC.
- The MRC joined forces with the Health Departments to form a Joint Health Delivery Group, to increase the coordination of medical research between public sector funders.

People

- The MRC currently employs more than 4,000 people, working in the UK and overseas.
- We are making good progress towards Investors in People accreditation.
- The MRC completed work on equality proofing its pay systems and began work on redesigning its system for rewarding people, with the aim of being more responsive to individual performance and specialisation.
- We introduced the new Doctoral Training Account system for funding postgraduate studentships in universities and in MRC units and institutes in October 2004, with the aim of increasing flexibility over stipend levels and duration of awards.

Technology transfer

- Exploitation income (excluding interest) increased significantly from the level of the previous two years: £27.3m (compared to £14.3m in 2003/04 and £15.1m in 2002/03).
- Seventeen new patent applications were filed and 26 new licensing agreements were signed.
- In line with our objective of translating cutting-edge biology into treatments and medicines, a Drug Discovery Group was established within the commercial environment of MRC Technology's laboratory facilities.

Public engagement

- The MRC completed a major reputation audit among external stakeholders and the public, the results of which will shape the MRC's communication strategy for 2005/06 and beyond.
- The MRC's Council held its first open meeting in Manchester in February 2005. More than 100 people attended the event, including university researchers, service users and representatives of patient organisations.
- We introduced a small grants scheme to encourage and support MRC scientists' involvement in public engagement.
- We continued to seek the public's views on medical research through an Advisory Group on Public Involvement.

Operational

- The MRC continued to provide ethical guidance to researchers, for example on medical research involving people in developing societies and children, and to make input into relevant government bills and regulations, including the Human Tissue Bill and the EU Clinical Trials Directive.
- We initiated a project in August 2004 to look radically at how the MRC could deliver administrative functions more efficiently with the aim of generating cash savings to route to research funding.
- The MRC successfully implemented electronic records management at its head office at the end of 2004.
- We rolled out training and produced guidance for staff in readiness for the full implementation of the Freedom of Information Act 2000 on 1 January 2005.

Finance

- The MRC's expenditure limit (domestic and EU) for 2004/05 was £427.1m (£406.6m in 2003/04).
- The MRC's total expenditure for 2004/05 (excluding expenditure from the Commercial Fund) was £476.4m (£473.4m in 2003/04).

Research

Research

The MRC's strategic objectives for research:

- To invest in high-quality research relating to human health.
- To fund partnerships and promote collaboration.
- To promote the translation of research into practice, including disseminating information, providing scientific advice and facilitating implementation within health service policy and practice.

Government Science Budget research objectives:

- To continue to improve the excellence, relevance and impact of the knowledge created from Research Councilfunded programmes.
- To increase research capability and international competitiveness of the UK in new strategic areas.
- To increase the dynamism and flexibility of Research Council programmes to respond to changing requirements and opportunities, and to support effectively multidisciplinary research, new researchers and higher-risk research proposals.
- To maintain access for scientists working in the UK to the necessary major facilities, databases and supporting laboratory infrastructure that will enable them to deliver world-class research.

Spending Review priorities

Spending Review 2002 (SR2002)

The MRC's progress with the SR2002-specific initiatives is reported under the relevant sections in **Major research developments and partnerships** (page 8). Our spend on each of the four initiatives in 2004/05 was: genomics – £0.43m; e-Science – £0.23m; stem cell science – £3.23m; and brain science – £1.90m. We also spent £1.34m on implementing the recommendations of the Roberts Review to increase the attractiveness of careers in scientific research (see **Training**, page 22).

Spending Review 2004 (SR2004)

In March 2005, the Government announced the allocation of funds to each of the Research Councils (RCs) under its 2004 Spending Review (SR2004). The allocation covers the financial years 2006/07 and 2007/08; 2005/06 is the last year of the previous Spending Review, and is the base year for SR2004. As well as resource and capital allocations, there is earmarked funding within the Large Facilities Capital Fund.

The delivery plan and performance management framework

The MRC along with the other RCs was required to develop a delivery plan as part of the SR2004 allocation process, setting out how the MRC will contribute towards the Office of Science and Technology's (OST) Public Service Agreement target of improving the relative performance of the UK research base and of the UK economy. The MRC Delivery Plan, published in May 2005, gives details of the MRC's spending priorities over the SR2004 period, and is a key part of a new performance management framework through which the MRC will be held accountable for the extent to which deliverables are achieved. The plan takes account of the UK Clinical Research Collaboration (UKCRC)/Joint Health Delivery Group agenda, as well as the MRC's own vision and strategic priorities.

Changes to corporate scientific strategy and evaluation

During 2004/05 the MRC made major changes to its funding schemes and decision-making bodies to provide the community with more flexible funding options and speedier decision-making. We also wanted to achieve greater transparency in the way we develop our research strategy, including increased consultation with the scientific community.

Here are some of the key changes:

- Most funding decisions are now taken by MRC research boards and panels.
- Although all of the MRC's research boards remain responsibile for clinical science in their research areas, the Physiological Systems and Clinical Sciences Board now leads the general promotion of translational research.
- The work of MRC units and institutes is now integrated into the research boards' scientific portfolios.

MRC research boards – the new structure

There are now five MRC research boards, all of which have increased ownership of their scientific portfolios and make decisions about which applications to fund:

- Molecular and Cellular Medicine Board
- Physiological Systems and Clinical Sciences Board
- Infections and Immunity Board
- Neurosciences and Mental Health Board
- Health Services and Public Health Research Board

In addition, the MRC has set up a Strategy Portfolio Overview Group for each board. In 2004/05, their first year of operation, these groups focused on mapping the boards' research portfolios and analysing support for the five main scientific areas.

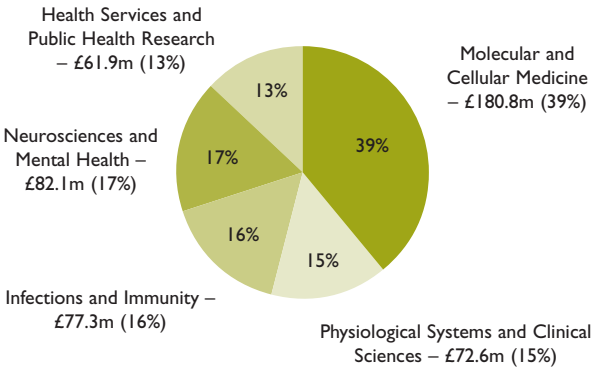
College of Experts

In February 2004 the MRC's Council agreed that the MRC Advisory Board should be replaced by a College of Experts. The college is made up of a group of more than 600 reviewers, selected to provide expertise in each of the research boards' scientific areas. The MRC will hold annual regional meetings for members, starting in summer 2005. It is also exploring ways of widening the college's role, possibly by inviting members to take part in board-related activities.

Major research developments and partnerships

This section highlights the MRC's new and ongoing partnerships with other RCs, government departments and research charities, and the contribution they make to the MRC's research objectives. Industrial partnerships are covered in **Technology transfer** (page 25), and joint communications activities in **Public engagement** (page 31).

Figure 1: MRC gross spend by scientific area in 2004/05



Molecular and cellular medicine

Estimated gross spend in 2004/05 – £180.8m

The MRC Molecular and Cellular Medicine Board funds research into: cancer biology, genetic mechanisms, methodology development for gene therapy, bioinformatics, biotechnology and structural studies, nanotechnology, cell biology, and developmental and stem cell biology excluding neurobiology.

Structural biology/structural genomics: in October 2004 RCUK endorsed the science case for a research complex alongside the new synchrotron (DIAMOND) in Harwell, Oxfordshire. This new facility will ensure that biomedical, biological and physical scientists in the UK are able to exploit the opportunities that DIAMOND offers. A cross-Council coordinating group, chaired by the MRC, is now developing the business case.

Functional proteomics – call for proposals: the MRC received funding from the SR2002 settlement to support high-quality research in proteomics. A call for proposals was issued in October 2003; 72 outline proposals were received and 21 full proposals were invited. In April 2004 nine applications were funded with a total value of £5.7m.

Bioinformatics: in partnership with the Wellcome Trust and with support from the Biotechnology and Biological Sciences Research Council (BBSRC), the MRC has provided £1m for the expansion of the European Bioinformatics Institute. This funding will further strengthen the Institute's research programmes and its increasingly important role in academic and industrial research and training.

RCUK Basic Technology programme: launched in 2001, the Basic Technology research programme aims to contribute to building a generic technology base that can be adapted to a diverse range of scientific research problems and challenges spanning the interests of all the RCs. As a multidisciplinary approach is important in the development of basic technology, the programme requires cooperation and collaboration between researchers in different fields. By the end of 2004/05 the programme had awarded a total of £88m to 33 projects. In addition, 19 feasibility/network studies totalling £2m have been funded. Twenty per cent of these grants relate to MRC-funded research.

Stem cell research: during the year the MRC continued to develop strategies and priorities for stem cell research and banking, working closely with key stakeholders including other RCs, charities, industry, the Health Departments (HDs), the Human Fertilisation and Embryology Authority (HFEA), and the Medicines and Healthcare Products Regulatory Agency. For the MRC this work included global coordination of the International Stem Cell Forum, chaired by Professor Colin Blakemore. The forum held its fourth meeting in November 2004 in Montreal, where issues addressed included characterisation of stem cell lines, ethics, intellectual property rights and improved networking (see also **International**, page 18 and **Training**, page 22).

Together with the Department of Health (DoH), we have provided funding to help five *in vitro* fertilisation clinics to upgrade their facilities to good manufacturing practice (GMP) standard. This will enable stem cell researchers to use donated tissue to derive embryonic stem cell lines that will be fit for therapeutic purposes.

UK Stem Cell Bank: May 2004 saw the official opening of the UK Stem Cell Bank. The first of its kind in the world, the bank is funded by the MRC and the BBSRC and hosted by the National Institute for Biological Standards and Control (NIBSC) at South Mimms, Hertfordshire. It stores, characterises and supplies ethically approved, quality-controlled stem cell lines derived from embryonic, fetal and adult tissue. These cell lines are for use in research into radically new ways of treating serious disease and injury. During 2004/05 stem cell lines were deposited by researchers at King's College London, the universities of Newcastle, Edinburgh, Sheffield and Harvard, and an Australian research establishment.

National Cancer Research Institute: Dr Brian Clark was appointed Chief Operating Officer for the National Cancer Tissue Resource during 2004.

See section 4.3.1 of the MRC Operating Report 2004/05 for progress against 'Molecular and cellular medicine' targets in the MRC Operating Plan 2004/05.

Physiological systems and clinical sciences

Estimated gross spend in 2004/05 – £72.6m

This area of medical research investigates non-infectious diseases such as diabetes, obesity, heart disease and high blood pressure, and asthma – many of the leading causes of death and ill-health in the UK. It covers basic and clinical research into these diseases and into the normal and diseased states of every part of the human body. The studies we fund range from applied nutrition research to waste product and toxin excretion, hormone function, reproductive health and pregnancy, and the effects of drugs and hazardous environmental agents.

Research into diagnosis and treatment is also covered by this area, including medical imaging, anaesthesia and surgery, intensive care, molecular medicine and gene therapy. The Physiological Systems and Clinical Sciences Board plays a leading role in promoting translational and clinical research, through which scientific discoveries are translated into innovations in healthcare.

The number of applications to the board rose significantly during the year, from 12 in May 2004 to 96 in January 2005.

Asthma susceptibility gene: in October 2004, the MRC awarded funding to Professor Holgate and colleagues (Southampton) to study the cell biology of ADAM33 protein in predisposition to drug-resistant disease. Additional studies will investigate the function of ADAM33 in childhood asthma.

Integrative physiology: in May 2004 the MRC and the Wellcome Trust held the first of a series of workshops in key strategic areas. The objectives were to enable the two funding agencies to gain advice from stakeholders on developing a strategy for encouraging integrative physiology research, and to encourage networking

between basic, clinical, molecular and physiological scientists. The 60 participants included senior scientists and representatives of industry, the Physiological Society, the British Pharmacological Society and charities. A report is to be published on the MRC website during 2005.

Diabetes: in December 2004 the MRC confirmed a multi-million pound investment in new research programmes on obesity, diabetes and osteoporosis, as part of a major new initiative in epidemiology. The key aim is to help prevent conditions such as diabetes and obesity by developing integrated, collaborative research programmes that explore the genetic and environmental factors at play in the development of such conditions from before birth and throughout adulthood. The programmes will be led by the new MRC Epidemiology Unit in Cambridge (Director, Dr Nick Wareham) and the MRC Epidemiology Resource Centre in Southampton (Director, Professor Cyrus Cooper).

Reproduction: the MRC was approached by the HFEA to review the scientific evidence for potential health effects of new and existing assisted reproduction technologies (ART). A working group was set up comprising scientific experts, ethicists, consumer advocates and representatives from the HFEA and the DoH. In November 2004 the working group published its report. Entitled *Assisted Reproduction; a safe, sound future*, it highlighted the need for improved monitoring and evaluation of ART.

See section 4.3.2 of the MRC Operating Report 2004/05 for progress against 'Physiological systems and clinical sciences' targets in the MRC Operating Plan 2004/05.

Infections and immunity

Estimated gross spend in 2004/05 – £77.3m

The MRC invests in research to understand how the human immune system works, how it fights disease, and what happens in autoimmune and inflammatory diseases, such as multiple sclerosis and rheumatoid arthritis. An important part of the work involves research on infectious diseases – such as AIDS, tuberculosis and malaria. Much of this research is translational, aiming to improve treatment through new and improved vaccines and drugs.

Funders' Forum for health research in developing countries: the UK's three main funders of health research in developing countries agreed in 2004 to form a Funders' Forum to coordinate the UK response to global initiatives in health and to give greater strategic coherence to diseases of poverty. The members currently comprise the Wellcome Trust, the Department for International Development (DFID) and the MRC. Members are committed to exchanging information on individual strategies and policies, to consider opportunities for joint funding of new initiatives and to promote opportunities to get research into policy and practice. The forum met first in October 2004 and then again in January 2005. In November 2004 the forum hosted a meeting of the UK research community working on HIV vaccines to discuss strategies for the UK developing an accelerated HIV vaccine strategy that would contribute to the Global HIV Vaccine Enterprise.

Anglo-French alliance: the MRC is a founding member of the Anglo-French Alliance for Tropical Medicine, together with the Wellcome Trust and the DFID. French organisations include the Institut National de la Santé et de la Recherche Médicale (INSERM), Centre National de la Recherche Scientifique (CNRS), l'Institut de Recherche pour le Développement (IRD), and the Institut Pasteur. The activities are coordinated through the Science and Technology Service of the French Embassy in London. In May 2004 the alliance sponsored a collaborative workshop on bioinformatics in Dakar, Senegal. The five-day workshop was based on a course prepared by the Wellcome Trust Sanger Institute and was well subscribed by African researchers. The course was of particular relevance to research on disease-causing microorganisms, and three students from the MRC Laboratories, The Gambia, and one from the MRC Unit on AIDS, Uganda, attended. The alliance is preparing to provide a workshop on clinical trials for January 2006.

Development of the MRC Laboratories, Fajara, The Gambia: in May 2004 the MRC approved a £2.6m investment to complete a phased series of improvements that were initiated in 1996 at the MRC Laboratories in The Gambia. The first stage of the Fajara site development is the plan to provide a modern laboratory infrastructure to enable the unit to maintain a world-class research environment and attract and retain the highest calibre scientists. A second development is the relocation of the clinical wards, the outpatients department, and a number of clinics to improve security on the site and provide better access for the 600–800 people who use the clinical facilities daily. The development will also provide much needed accommodation for visiting PhD students and training fellows.

Pneumococcal vaccine trial: in February 2005, an international steering committee considered the outcomes of the trial of 9-valent conjugate

pneumococcal vaccine in infants in rural Gambia that the MRC has conducted in partnership with the London School of Hygiene and Tropical Medicine. Pneumonia is estimated to cause almost two million deaths each year in children, and *Streptococcus pneumoniae* is the most important cause of severe pneumonia. The trial, which involved vaccinating 17,000 children, had international support from the US National Institutes of Health (NIH), the World Health Organization, the Programme for Appropriate Technology in Health, and the US Agency for International Development. The results showed that the the vaccine has high efficacy against pneumonia and invasive pneumococcal disease, and can significantly reduce hospital admissions and improve child survival. The challenge now is to work with partners to find innovative ways to ensure that such a vaccine can be made available to African infants.

Edward Jenner Institute for Vaccine Research (EJIVR): the EJIVR sponsors (the MRC, GlaxoSmithKline, the DoH and the BBSRC) conducted a review of the current programmes at the EJIVR, the outcome of which informed the EJIVR Board in developing future plans and offering four Jenner fellowships, to run from November 2005. The EJIVR Board is seeking to establish a new institute in partnership with Oxford University and the BBSRC Institute of Animal Health, which will build on the work of these four team leaders. The new institute will have a mission to develop a strong translational research focus.

See section 4.3.3 of the MRC Operating Report 2004/05 for progress against 'Infections and immunity' targets in the MRC Operating Plan 2004/05.

Neurosciences and mental health

Estimated gross spend in 2004/05 – £82.1m

This area of the MRC's scientific portfolio covers research on the biology of the brain and the nervous system in normal and diseased states. It leads to discoveries that help enable scientists to develop new preventive measures and treatments for neurological disorders such as Parkinson's disease and Alzheimer's disease – a growing concern given the UK's ageing population – and for conditions such as depression, schizophrenia, autism, addiction and antisocial behaviour.

During the year the MRC worked with the other RCs, the DoH and several charities to complete a database of neurosciences and mental health research in the UK, which will enable us to carry out more sophisticated analyses of MRC research.

Consultative strategy meeting: in January 2005 the board organised a two-day meeting with representatives of the research community to inform its future strategic thinking on all areas of neuroscience research, training and infrastructure investments. More than 130 participants spanning the breadth of areas covered by the board took part, with representation at a senior level from universities, industry, MRC units and institutes, government departments, the NIH, charities and consumer organisations. A report will be published on the MRC website in June 2005.

Brain sciences: the MRC completed a second call for proposals to support innovative research projects with a key emphasis on neurodegeneration and mental health. The DoH contributed an additional £1m to help build capacity in applied mental health research, and participated in the assessment of these applications. Twenty-eight awards were made (15 Pathfinders and 13 Trial Platforms), worth £5.3m in total, to fund research into new ways of treating depression, anxiety, bulimia and bipolar disorder, biomarkers for the early detection of Alzheimer's disease, and risk factors and prevention. Several of the trials platforms will be supported by the new Mental Health Research Network or will use it when they develop to full-scale trials.

Mental health scoping study: in November 2004 the study working group submitted their report to the board. They had found that MRC funding for mental health research had increased since 2000, mainly in clinical trials, and there were several outstanding areas of strength in UK research. But, as in most other countries, the UK's spend in relation to burden of illness was low.

Autism: the MRC funded six new projects during the year in clinical psychology, neuroimaging, epidemiology and psychosocial intervention. These awards were part of the initiative to take forward the recommendations of our 2001 review of autism research that is funded by £2.75m from the DoH and the Chief Scientist Office in Scotland and £0.4m from the MRC.

Dementia research: the MRC, in collaboration with the DoH, the Department of Trade and Industry (DTI) and the Alzheimer's Society, hosted a stakeholders' workshop on research in dementia in November 2004. Co-chaired by Professor Alan North (University of Manchester) and Professor Clair Chilvers (DoH), the workshop highlighted the UK's strengths and weaknesses in clinical dementia research and opportunities for developing this area over the coming years.

The MRC also agreed to contribute US $1m to a major NIH-led initiative involving US, Canadian and Irish funders, aimed at identifying autism susceptibility genes.

NHS Newborn Hearing Screening Programme: Professor Adrian Davis, formerly of the MRC's Institute of Hearing Research, completed his move to the University of Manchester, from where his team is rolling out the NHS Newborn Hearing Screening Programme. This screening programme stemmed from epidemiological studies, basic research, and technology development funded by the MRC and will improve the early detection of hearing impairment in newborn babies, and allow earlier and more effective treatment.

Stroke research – appointment of Professor Alastair Buchan: in 2004 Professor Alastair Buchan, previously of the University of Calgary, Canada, was awarded a professorship at Oxford University through the MRC Strategic Appointments Scheme. Professor Buchan is a world leader in the initial, very rapid assessment and management of stroke victims and has developed an impressive basic research programme into experimental models of stroke and its therapy.

Prion disease: the Prion-1 trial, funded by the DoH and developed with input from patient support groups, formally began recruiting patients to a trial of the use of quinacrine in treating prion disease on 1 May 2004. In March 2005, the MRC held a meeting with relatives of patients being treated with pentosan polysulphate, to develop arrangements that will allow monitoring and evaluation of the treatment.

Behavioural and clinical neurosciences: the MRC, working in partnership with the Wellcome Trust, has agreed to co-fund a consortium in behavioural and clinical neurosciences research at the University of Cambridge. The award integrates key neuroscience research groups across several university departments, the MRC Cognition and Brain Sciences Unit and the Wolfson Brain Imaging Centre. The first jointly funded project of its type, it will focus on translational research in behavioural neurosciences, linking animal behaviour studies with basic research into human cognitive behaviour, and clinical research into psychiatric disorders and dementias.

Cognitive systems: following on from the Government's Foresight Cognitive Systems exercise, in July 2004 the MRC, the Wellcome Trust and other RCs launched a highlight notice to encourage multidisciplinary proposals in this area. The notice resulted in a steady stream of expressions of interest and full proposals will be developed during 2005/06.

See section 4.3.4 of the MRC Operating Report 2004/05 for progress against 'Neurosciences and mental health' targets in the MRC Operating Plan 2004/05.

Health services and public health research

Estimated gross spend in 2004/05 – £61.9m

Our long-term investment in health services and public health research is made through five MRC research units. In addition, a large proportion of the Health Services and Public Health Research Board budget funds research in universities and hospitals. This work includes the development and evaluation of healthcare interventions; population-based aetiological studies with particular emphasis on environmental and psychosocial factors; implementation studies; and methodological developments in health services research and public health research.

Our public health research looks at the wider influences on physical and mental well-being and ill-health; for example, the biological, socio-economic, lifestyle and environmental factors at play throughout people's lives. It includes all aspects of health promotion, disease prevention and healthcare provision. A key aim is to understand how and why ill-health varies within the population, and how to improve public health through interventions and improvements that address these inequalities. The MRC conducts a wide portfolio of clinical trials that includes patients in every disease area and tests new approaches to prevention, diagnosis and treatment.

Public health research: MRC support in 2004/05 included new investments to develop its portfolio in developing methodologies that underpin clinical and public health studies. This support includes an award for £468k to Dr Paula Williamson of Liverpool University to develop statistical methodology for longitudinal studies in clinical research.

In the last year the MRC Sexual Health and HIV Scientific Research Committee, with funding from the Health Departments, awarded £1.3m to research that is looking at the management of patients with sexually transmitted infections/HIV, service delivery options, and new approaches to improving the health and health behaviours of groups at risk.

The MRC has awarded over £3m to Professor Neil Marlow (University of Nottingham) to support further follow-up of the EPICure study of the childhood development of babies born at 25 weeks gestation or less. The study will help to inform clinical practice for such

babies and inform parents and health and education planners of the needs of the extremely preterm child as he or she grows up. It received national and international publicity in 2004 and was the basis of a number of television documentaries.

Primary care research: Professor Irwin Nazareth took up his appointment as Director of the MRC General Practice Research Framework in January 2005. On the basis of Professor Nazareth's preliminary plans for the framework, the MRC's Council continued support from 1 April 2005 while the new Director develops his proposals in the context of the evolving framework of the UK Clinical Research Collaboration research networks.

Clinical trials: the MRC awarded £2.1m to fund the UK arm of an international trial to determine whether postoperative radiotherapy in women who are at intermediate risk of breast cancer improves survival rates in these patients (the SUPREMO breast cancer trial). Up to 3,700 UK patients will take part in the trial coordinated by Dr Ian Kunkler (Western General Hospital, Edinburgh). Parallel studies will also look at quality of life issues and assess the risk of cardiac damage among these patients. A further sub-study will examine tumour material collected from them, with the aim of identifying proteins that may be associated with an increased risk of local relapse and resistance to radiation therapy.

UK Biobank: the MRC has worked with the Wellcome Trust, the DoH and the Scottish Executive to continue to develop the UK Biobank following its establishment as a charitable company limited by guarantee in November 2003. The focus this year has been on developing the governance arrangements and central infrastructure to support the ongoing development of the scientific protocol and ethical and governance policies. For more information visit www.ukbiobank.ac.uk.

In November 2004, the funders of UK Biobank established an Ethics and Governance Council to ensure public accountability. Acting as an independent guardian of the ethical framework, the council will report publicly, with particular emphasis on how UK Biobank safeguards the interests of its participants and the wider public.

In July 2004 the UK Biobank Science Committee published a detailed report on sample handling and storage on the UK Biobank website. Following extensive work on the study design and instruments, UK Biobank received ethical approval for the first stages of piloting in January 2005.

New Dynamics of Ageing: in spring 2005 the first call for proposals was announced by this cross-Council research programme. The New Dynamics of Ageing is led by the Economic and Social Research Council (ESRC) in partnership with the Engineering and Physical Sciences Research Council (EPSRC), the MRC and the BBSRC, and directed by Professor Alan Walker of the University of Sheffield. It was set up in 2003/04 to foster combined interdisciplinary approaches to research into older people's health and well-being and the management of age-related conditions

e-Science initiative: in the SR2002 the MRC was allocated a further £13.1m for e-Science which was used to fund a call for proposals to undertake grid projects that would facilitate the design, management and coordination of data relevant to clinical trials and longitudinal studies across the MRC portfolio. Awards were made to five large consortia-based grid projects, networked to cover the UK, and focused around cancer, mental health, primary care and clinical data management for post-genomic research. The DoH provided additional funds of £1m to co-fund the mental health consortium in psychosis.

National Prevention Research Initiative: in October 2004 the National Prevention Research Initiative (NPRI) was launched with a budget of £12m over five years. This multidisciplinary collaboration has been set up to help prevent cancer, coronary heart disease and diabetes, by influencing health behaviours and by reducing risk from tobacco use, alcohol misuse, physical inactivity and poor diet. There was an excellent response to the first call for outline applications; the funding decisions will be made in November 2005.

The MRC manages the NPRI on behalf of the other partners: the British Heart Foundation, Cancer Research UK, the DoH, Diabetes UK, the ESRC, the Food Standards Agency, the Research and Development Office for the Northern Ireland Health and Social Services, the Chief Scientist Office, the Scottish Executive Health Department, the Wales Office of Research and Development and the World Cancer Research Fund.

See section 4.3.5 of the MRC Operating Report 2004/05 for progress against 'Health services and public health research' targets in the MRC Operating Plan 2004/05.

Cross-cutting initiatives

UK Clinical Research Collaboration: the UK Clinical Research Collaboration (UKCRC) brings together the MRC, the HDs, the NHS, medical charities, patients and industry to coordinate and transform clinical research, to help speed up the translation of scientific discoveries into improved healthcare. The UKCRC's initial priorities are to build up the NHS research infrastructure and a skilled clinical research workforce, to streamline regulatory and governance processes, and to coordinate approaches between funding bodies. The partnership also aims to enhance career opportunities at all levels within clinical research. These priorities match those that the MRC set out in its bid for 2004 Spending Review funding, to reinforce its commitment to clinical research, and the MRC is playing a central role in the UKCRC.

Clinical Research Advisory Group: in April 2004, the MRC established the Clinical Research Advisory Group, a subgroup of its Council and chaired by Professor Colin Blakemore, to develop recommendations on ways to deliver the clinical research agenda and its position within the UKCRC. In February 2005 the MRC's Council discussed initial proposals from the Clinical Research Advisory Group, which included input from the MRC's research and training boards, unit directors and other groups involved in shaping MRC strategy. The final recommendations were fed into the Council's discussions on implementing the Delivery Plan.

Joint Health Delivery Group: when the Government published its 10-year Investment Framework for Science and Innovation in July 2004, it asked the MRC and the UK HDs to form a Joint Health Delivery Group to increase the coordination of medical research between public sector funders. The partners are now actively developing a delivery plan for health research. Earlier notable examples of successful joint working between the MRC and the HDs include the MRC/DoH Primary Care Research initiative, and joint fellowship schemes to encourage training and capacity development.

DoH/MRC Primary Care Research Infrastructure Working Party: the MRC and the DoH set up this funders' working group in 2004 to draw up recommendations for maximising their collective investments in primary care research infrastructure, and to contribute to UKCRC objectives (see above).

RCUK: in 2004/05 RCUK has focused on the 2004 Spending Review and on developing its administration strategy, designed to create a unified interface with the RCs' key stakeholders and to deliver efficiency savings. Another major activity has been the development of an RC policy on open-access publishing and archiving. A position statement has been agreed for consultation with universities before final publication. RCUK has also been closely involved in discussions about the 7th EU Framework Programme and proposals for a European Research Council (see page 18). For more information about RCUK's activities during 2004/05 visit www.rcuk.ac.uk.

Government departments: examples of involvement with government departments in 2004/05 include work with the DTI and the OST on technology strategy and knowledge transfer, and with the OST and the DoH on EU research programmes (FP6/FP7 and public health), and on EU policy with implications for UK research, such as the directive on tissue and cell donation. We have also worked closely with the HDs on expanding clinical research and training, and have renewed our partnership agreement with the departments.

Medical charities: during 2004/05 the MRC's partnership activities with medical charities have included exchanging information, exploring possibilities for joint funding of clinical trials and fellowships, and holding joint workshops. We have also had regular discussion with the Association of Medical Research Charities on issues of mutual interest – for example, clinical research and research involving animals.

See section 4.6 of the MRC Operating Report 2004/05 for progress against 'Partnership and collaboration' targets in the MRC Operating Plan 2004/05.

Supporting research excellence

The MRC is the only public funding agency in the UK that covers the whole spectrum of medical research, from basic and translational research to the application of new treatments. We achieve this by:

- Securing the national medical research infrastructure over the long term, by funding existing facilities and establishing new research centres in topics of strategic importance.
- Investing in training and employing scientists in universities and our own research centres.
- Funding research proposals by scientists who have identified scientific problems that need addressing.

The main factors in our funding decisions are the quality of the research and its potential significance in terms of improving human health. The proposals we receive are

stringently reviewed by a core of scientific experts, including our research boards and other external expert referees both in the UK and abroad. Our annual research expenditure is split broadly between:

- Grants to researchers in universities and medical schools, including training awards for postgraduate students and fellows; this amounted to £186.9m in 2004/05.
- Funding for the MRC's own research institutes and units, amounting to £251m in 2004/05.

MRC grant funding schemes

On 13 February 2004 the MRC announced major changes to its approach to funding research, which were implemented from 1 April 2004. The changes had been informed by extensive consultation with the scientific community through the MRC website and a series of regional university roadshows. The MRC's previous 12 grant schemes were simplified to six: Research Grants, Collaboration Grants, Centre Grants, Trial Grants, New Investigator Awards, and Career Establishment Grants.

The MRC's grants schemes are designed to:

- Provide funds for:
  - high-risk/high-impact work;
  - studies which may act as a spring-board for longer-term research;
  - enhanced clinical research training;
  - better support for 'early career' researchers;
  - simpler, more flexible support for collaboration between grant-holders.
- Encourage multidisciplinary working, with forwardlooking research strategies, greater emphasis on outputs and national needs, and greater transparency of funding and accountability.
- Target funds towards the most productive individuals and groups through a smaller number of grant schemes with flexible scale and duration – driven by research needs not by funding and duration limits.
- Fund individual centres of excellence that are based on a long-term strategy reflecting the views of universities, RCs, charities, industry and other stakeholders.

Preliminary review of response to the new schemes: the numbers of applications submitted to the research boards continued to grow throughout 2004/05, largely because of the increase in requests for research grants of three years or less. The MRC will continue to monitor the balance of long-term and short-term support and the load on the refereeing community. Annual ratings of applications and award rates will be posted on the MRC website from June 2005. The impact of the dual support reform and full economic costing will also be closely monitored and assessed.

Key awards made in 2004/05

Research Grants: as anticipated, the new-style Research Grant was the principal scheme utilised by scientists during 2004/05. This flexible form of support covers a wide variety of work, from a two-year pilot project to a programme of research for five years or longer. During 2004/05, 157 new Research Grants were awarded.

Collaboration Grants: Cooperative Group Grants were replaced with a simpler scheme of Collaboration Grants. These are awarded as supplements to Research Grants, to provide infrastructure support for networks of collaboration with research groups that are supported by other funding agencies. They can be used to support cooperative research with high core costs, to support complex cooperative links across several higher education institutions, and to develop research networks, promote international 'twinning' and collaborations. Collaboration Grants may be awarded for any period of between two to five years, and funds from £50k to £1m (if involving large capital items) can be requested. One Collaboration Grant was awarded during 2004/05.

Trial Grants: the MRC funds clinical trials designed to provide high-quality evidence on the efficacy and effectiveness of interventions in medicine and the health services. The focus of this support is primarily on trials that break new ground in terms of research questions or methodologies, or that add significantly to our understanding of biological or behavioural mechanisms and processes in human health and healthcare.

The MRC funded 16 new clinical grants during 2004/05, covering autism, cancer, HIV, malaria and stroke, and there were 55 live Trial Grants on 1 April 2005. During the year the results of the following trials were reported, all with major implications for healthcare: ACST – surgery to reduce stroke risk; RIPPLE – sex education in schools; GRIT – timing of delivery of babies; CRASH – corticosteroids for brain injury; UKBEAM – spinal manipulation for back pain; STICH – surgery following stroke; antibiotics in children for AIDS-related deaths; and streptokinase in chest infection.

Centre Grants: MRC Centre Grants support research partnerships between the MRC and host institutions. They are designed to fund multidisciplinary research environments in partnership with universities and involve significant investment by the MRC and the host university, with full-time scientific leadership. During 2004/05 the MRC funded two new centres – the UCL Centre for Medical Virology, and the MRC Cambridge Centre for Stem Cell Biology and Medicine (see page 19), increasing the total number of MRC-funded centres to nine.

The process and procedures for applying for centre funding has been updated and incorporated into an annual competition that starts with the submission of outline proposals. The 2004 competition received 18 outline applications, four of which were short-listed for development into full proposals and a funding decision will be made in July 2005.

Career Establishment Grants: these grants are awarded for five years to recently appointed clinical and nonclinical university researchers. They are designed to enable scientists to establish themselves as independent investigators capable of winning further support in open competition. The MRC awarded 12 new grants during 2004/05 and there were 78 live grants on 1 April 2005. Following a review of Early Career Awards by the MRC Training and Career Development Board in 2004/05, the Career Establishment Grant scheme will be merged with the New Investigator Award scheme in 2005/06.

New Investigator Awards: in January 2004 the MRC announced a new commitment to the careers of young clinical and non-clinical scientists, by allocating £5m in 2004/05 for a pilot New Investigator Award scheme. It is designed to give new researchers the opportunity to establish their independence as investigators. The MRC made 21 New Investigator Awards during 2004/05. There were seven live grants on 1 April 2005. Following a review by the MRC Training and Career Development Board, the MRC revised its Early Career Awards scheme to incorporate aspects of the Career Establishment Grant scheme, with eligibility extended and a combined budget for 2005/06 of £11m.

Discipline Hopping Awards: the MRC made its fourth round of Discipline Hopping Awards during the year to encourage established physical sciences researchers to apply their expertise to life science problems. The awards, of up to £50k for a one-year period, are aimed at pumppriming new interdisciplinary collaborations. The EPSRC and the BBSRC jointly funded the programme, enabling 21 new projects to be supported across physics, chemistry and engineering. The DTI's Cognitive Sciences Programme also provided £60k of funding towards the scheme.

Strategic Appointments Scheme: this scheme helps universities and MRC units to attract scientists of the very highest research calibre, usually from overseas, who can make a significant contribution to advancing university and MRC strategy. There was one award made to Oxford University during 2004/05 (see page 12). To date, the scheme has helped universities and units to attract 18 senior scientists to the UK.

Grant schemes now closed: as reported last year, Programme Grants, Cooperative Group Grants and the MRC Equipment Supplement Scheme were closed to new applications from 31 March 2004. Applications that were being considered at 31 March continued to be reviewed and a funding decision was made in MRC research board meetings held in May and June 2004.

Grant scheme	Awards made in 2004/05	Number of live grants on 1 April 2005
Cooperative Group	38	194
Programme	22	204
Strategic	26	069

LINK: the LINK scheme offers strategic grant support to high-quality, pre-competitive research collaborations between academia and industry. All LINK projects involve at least one UK company and one research organisation. There were five new grants during 2004/05 under the Applied Genomics Programme (sponsored by the BBSRC, the DTI and the MRC); the MRC awarded one in full and four with the BBSRC. There were seven Open LINK grants on 1 April 2005. To help broaden the scope of the scheme, the LINK marque has been franchised to the MRC, the BBSRC and the EPSRC. As a consequence the MRC is able to fund LINK projects across its own research areas rather than only as part of a specific LINK programme.

Information on all MRC funding awards made from 2001/02 to 2004/05 is available at www.mrc.ac.uk.

MRC research institutes and units

Review of MRC intramural support: the MRC's review of its intramural support began in early 2004. The review was prompted by the OST's quinquennial review of the RCs in 2001, which called on them to clarify the case for supporting their institutes, and by the MRC's review of extramural funding in 2003/04.

The MRC has been redefining its policy for intramural support, to reiterate the strategic need for institutes and units and clarify their role. A new statement reaffirming MRC support for intramural programmes will be published in 2005.

In 2004 the MRC conducted a comprehensive reappraisal of how it evaluates its own institutes and units, identifying the strengths and weaknesses of the existing process. The review involved extensive consultations with key stakeholders, including directors, staff representatives and independent expert reviewers, and was carried out by external consultants. The consensus was that although there was widespread confidence that use of regular peer review would demonstrate that public money was being used to support first-class science, some aspects of the review process would benefit from improvement.

A series of further stakeholder consultations produced a range of ideas for improvements, which will be developed into a new review process for consideration by the MRC's Council in 2005.

Quinquennial reviews of MRC units and institutes: the quinquennial reviews of six MRC units were completed during 2004/05. Collectively, these units had 23 programmes of past work assessed and 22 programmes (96 per cent) received the highest ranking of 4.5 or above – that is, were internationally competitive. The following units scored 4.5 or above for future proposals and were awarded funds for a further five years: the Clinical Trials Unit (London), the Social and Public Health Sciences Unit (Glasgow), the Mammalian Genetics Unit (Harwell), the Dunn Human Nutrition Unit (Cambridge), the Centre for Protein Engineering (Cambridge) and the Collaborative Centre for Human Nutrition Research (Cambridge).

During the year one institute review was completed, for the Clinical Sciences Centre (CSC) (London). The CSC's mission is to support innovative basic and clinical research programmes, and to work in partnership with Imperial College to forge productive two-way exchanges between basic and applied medical research. The CSC had 22 programmes of past work assessed; 20 (91 per cent) received the highest ranking, and the MRC awarded funds for a further five years. The strategy for the next five years will continue to promote two-way translational links and closer partnerships with Imperial College London and Hammersmith Hospital.

The Laboratory of Molecular Biology has completed two divisional reviews (in Neurobiology, and in Protein and Nucleic Acid Chemistry) and the National Institute for Medical Research has completed five divisional reviews (in Neurosciences, Immunology, Infections, Structural Biology, and Genes and Development). Both institute reviews will be completed during 2005/06.

National Institute for Medical Research (NIMR): as reported last year, the NIMR Task Force completed its work in July 2004 and its final report was considered by the MRC's Council in July and again in October. The Council agreed with the Task Force's recommendation that the NIMR should be renewed as a multidisciplinary institute focused on basic and translational research, and be based in the London area.

The Council agreed that full proposals should be developed for a renewed institute in partnership with either King's College London (KCL) or University College London (UCL). In December 2004 the Council considered those proposals, along with a paper prepared by the NIMR setting out what would be required for a renewed institute at Mill Hill to meet the Task Force's vision as closely as possible. On the basis of these proposals and site visits to KCL and UCL, the Council selected UCL as the preferred partner in February 2005, and agreed that the NIMR should work with UCL and the MRC head office to prepare the full business plan for the Council's consideration.

A project group with membership drawn from MRC head offfice, the NIMR and UCL was established to assist in the preparation of the business plan. The plan was considered and approved by the Council in May 2005 and will form the basis for an application to the Large Facilities Capital Fund for support towards the cost of the project.

For further information see www.mrc.ac.uk/about-nimr_ steering _committee.

International

More than ever before, there is growing recognition that the health burdens of today's society can be tackled more effectively through international collaboration. A multinational coordinated approach can bring significant benefits not only to studies of rare diseases, but also to efforts to tackle the considerable challenges and health threats of emerging and re-emerging infectious diseases. With the increasing popularity of travel, environmental change and the evolution of the disease-causing pathogens, national borders provide little protection. In addition, globalisation of multinational companies has contributed to changes in lifestyle, leading to a worldwide increase in chronic disorders such as heart disease, stroke, cancer and diabetes.

The MRC is an international leader in funding and promoting high-quality research overseas – biomedical, translational and clinical.We achieve this by engaging with key funders, ministries and other agencies, by subscribing to international organisations, and by brokering bilateral and multilateral collaborations.

Research coordination

The outbreak of SARS (severe acute respiratory syndrome), the more recent development of avian flu and the continuing rise in infectious diseases such as tuberculosis and HIV/AIDS have prompted high-level fora such as HIROs[1] to focus on new approaches to tackling global health issues. This year has seen discussions on how existing significant efforts can be better coordinated and targeted; other topics included open access and regulation of medical journals, the need to attract young people into science, and evaluation and bench-marking.

In Europe, the EUROHORCs forum[2] continues to play a major role in developing the concept of the European Research Area, a free market for research across Europe. At the centre of this has been a discussion on the possibility of allowing researchers to transfer grants to host institutes in other European countries, to enable them to move more freely around Europe and assist with their career development. In 2004 the European RCs drew up and signed a letter supporting this principle.

Legislation discussed and passed by the European Parliament is increasingly influencing research practice in Europe. The MRC uses its sponsorship of the UK Research Office (UKRO) in Brussels as a source of early information and a route to influencing informed debate. During the year, the MRC and the BBSRC sponsored a discussion workshop on stem cell research, which was hosted by UKRO.

The MRC remains an active participant in promoting the EU's Framework Programme, the Commission's main mechanism for funding research across Europe, acting as the National Contact Point and UK representative on the Programme Management Committee for the Life Sciences and Genomics for Health theme. 2004 saw the launch of the third call for proposals, which the MRC and the DTI highlighted through an information event in London. At a number of fora the MRC has been involved in discussions about the development of the 7th Framework Programme and how the funding of researcher-initiated basic research may be included through the establishment of a European Research Council.

Since the arrival of its new chief executive, the European Science Foundation's (ESF) activities have been under review and it is currently preparing a four-year scientific strategy. The MRC, as a sponsor, has continued to input at various levels: as the UK chair of UKESF[3], through the governing council and executive board members, as a member of the European Medical Research Council[4] and as a member of the COST[5] Technical Committee for Medicine and Health. The MRC has this year funded proposals – the EUROdyna and the Pan European Clinical Trials – under the ESF EUROCORES scheme.

International subscriptions

The MRC subscribes to a number of international organisations in order to provide the UK scientific community with access to international competitive funding, training, workshops and key European facilities. Current subscriptions include the European Molecular Biology Conference, the European Molecular Biology Laboratory, the International Agency for Cancer Research and the Human Frontiers Science Program.

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[1] An informal group of heads of international research organisations (HIROs), encompassing the major funders of biomedical research.

[2] An informal policy-forming group of European heads of Research Councils (EUROHORCs) spanning all disciplines.

[3] A forum made up of the eight Research Councils, the Royal Society and the British Academy.

[4] A standing committee of the ESF, representing the medical sciences.

[5] European Cooperation in the Field of Science and Technology Research – supported by the EU Framework Programme and now run by the ESF.

Collaborations

The MRC's units in Africa are at the centre of our international activity. In 2004/05 the DFID contributed £4m towards a £23m MRC-managed programme to tackle the most pressing health problems of people in developing countries. Programme activities included the launch of the Microbicides Development Programme and a partnership between the MRC, Imperial College London and the DFID aimed at reducing the prevalence of sexually transmitted diseases in developing countries.

2004 saw the launch of the £400k international collaboration to characterise embryonic stem cell lines and the depositing of the first cell lines in the UK Stem Cell Bank (see page 9). In conjunction with the Juvenile Diabetes Research Foundation International, the MRC announced the establishment of the MRC Cambridge Centre for Stem Cell Biology and Medicine. The centre will generate new insights into basic biology for the development of stem cell treatments for diabetes and diseases of the brain, including Parkinson's disease and multiple sclerosis.

In February 2005, the MRC and the London School of Hygiene and Tropical Medicine announced the results of a four-year pneumonia vaccine trial in The Gambia (see page 10).

Together with INSERM, the World Health Organization, the Eberhard Karls University of Tübingen and representatives of four African countries, the MRC has set up Networking for Ethics on Biomedical Research in Africa, which aims to improve ethics research review capacity in West Africa (see page 36).

Towards the end of the year, the MRC established new corporate relationships with funding bodies, professional agencies and ministries in China, with the aim of strengthening links between the UK and Chinese medical research communities in 2005/06.

The European and Developing Countries Clinical Trials Partnership (EDCTP) remained the MRC's largest collaboration. We have continued to work with other funders, experts, and the European Commission to develop the EDCTP under Article 169, including changes to the executive directorship and secretariat and steps to improve peer review and research management arrangements.

Publication output indicators

The quality of MRC-funded research is demonstrated by our scientists' output of publications, as well as by the peer-review ratings for each award. OST research has shown that in scientific areas where the MRC is one of the dominant funders, the UK's share of world citations is second only to that of the USA. Moreover, the UK achieves a higher level of scientific 'return' in terms of investment per researcher.

Scientists in MRC units and institutes published over 2,000 papers in peer-reviewed journals in the calendar year 2004. More than 30 per cent involved researchers or funders from outside the UK and eight per cent involved researchers or funding from the private sector.

MRC intramurally supported publications

	2003	2004
Refereed publications	1,814	2,011

MRC intramurally supported publications co-authored with industrial partners

	2003	2004
Number of refereed publications co-authored with industrial partners	127	146
Percentage of all refereed papers	7	8

MRC intramurally supported publications co-authored with overseas partners/co-authors

	2003	2004
Number of refereed publications co-authored with overseas partners	572	632
Percentage of all refereed papers	31	33

Investment in people

Investment in people

The MRC's strategic objective for people:

- To attract and retain first-rate people to meet the UK's scientific and broader labour needs.

Human resources

The MRC currently employs more than 4,000 staff, both in the UK and overseas. The MRC Strategic Plan 2004–2007 focuses our human resources (HR) activities on developing policies, procedures and partnerships to ensure the competitiveness and effective resourcing of MRC research. This is set in the context of extensive ongoing change and development of people and the organisation, as units continue to be created, repositioned or closed, to ensure that the MRC delivers its overall mission.

During 2004/05 the MRC has focused on the following priorities:

- Completing the equality proofing of its pay systems and beginning the design of reward systems that are more responsive to specialisation and individual performance.
- An initiative to provide support and coaching for group leaders and directors to maximise their effectiveness in people management, to enable the MRC to anticipate research and resource changes more proactively.
- Launching a network for senior HR professionals across the MRC and implementing a programme for this group to enhance our leadership and change capabilities.
- Conducting stress audits across the MRC to assess capacity for and responses to change and continuing our commitment to employee health and safety by implementing an employee assistance programme.
- Extending the corporate learning and development curriculum to include: the introductory certificate in management; the MRC and the Public training initiative; the European Computer Driving Licence.
- Developing our Investors in People initiative beyond four pilot units to widen implementation across the MRC.
- Progressing our Women in Science initiative under the chairmanship of Professor Ann Prentice by taking an active part in the National Athena Asset survey and identifying actions to progress MRC achievements in this area.
- Using new corporate communication technology, for example the MRC portal, to ensure wider coverage and reliability of MRC employee communications.
- Continuing to define the HR administrative efficiency programme and requirements for an improved HR information system to shape future MRC HR knowledge and information management practices, within overall requirements of flexibility, efficiency and effectiveness.
- Continuing to implement employee consultation processes and migration plans relating to the administrative efficiency agenda, ensuring full consultation with the trade unions.
- Continuing to manage the existing cadre of MRC external scientific staff following extensive consultation with them around changes to the programme of support.

Diversity and equal opportunities

The MRC values the diverse skills and experiences of its employees and is committed to achieving equality of treatment for all. We have an equal opportunities subcommittee, which audits our employee data annually to ensure that the aims of the MRC's policies and practices are being achieved in a fair and equal manner, and to identify any imbalances that may need to be addressed.

MRC policies and schemes are regularly monitored to ensure that they are sufficiently flexible to accommodate all researchers, male and female, and all career pathways. We aim to offer a competitive employment package and have an appropriate balance between work and nonwork commitments.

Training

Government Science Budget training objectives:

- To raise the standard of postgraduate and post-doctoral researchers, and increase their numbers in priority fields experiencing shortfalls or recruitment difficulties.
- To enhance their training to better fit them for careers requiring research skills and experience and increase their attractiveness to future employers.

The MRC's portfolio of personal award schemes provides opportunities for initial postgraduate training, acquisition of further research skills, and career opportunities for more experienced researchers.

Postgraduate Studentships: the new Doctoral Training Account system for funding postgraduate studentships in universities and in MRC units and institutes started in October 2004. This allows the host institutions considerably increased flexibility over stipend levels and duration of awards, and makes joint funding of studentships at a local level much easier. During 2005/06 we will undertake the first analysis of the initial impact of this change, for example on the numbers of students supported and the level of stipends. More than 70 per cent of MRC PhD students successfully complete their research projects and submit their theses within four years of study.

Year PhD started	1997	1998	1999	2000
Percentage submitted within four years of start date	75	81	84	71
Percentage submitted within five years of start date	78	83	87	Not yet available

First destination survey data for MRC-funded PhD students who commenced their studies in 2000 show that 37 per cent had an academic appointment in the UK and 13 per cent were working in the private sector. A further 22 per cent had gone overseas. More detailed analysis of the first destinations of MRC students will be reported in the MRC Annual Report 2005/06.

Fellowships: in 2004/05 the MRC made 79 new fellowship awards at a cost of £21.4m.

Capacity Building Studentships: the MRC retains this mechanism for funding additional postgraduate studentships in areas where the research workforce needs to be built up. In February 2005, 56 new studentships were awarded in whole animal physiology, infections, stem cells, bioinformatics (including computational biology), dementias, health economics and public health modelling. These include nine awards in whole animal physiology, pharmacology and toxicology that have been funded in partnership with the Integrative Pharmacology Fund. The fund was set up with the pharmaceutical industry to help address skills shortages in specific areas. In addition, the MRC awarded 10 industrial collaborative studentships to companies that wish to train students in collaboration with universities; these will be taken up later in 2005.

Implementation of the Roberts Review recommendations: the MRC has increased minimum stipend levels for existing and new MRC postgraduate students, including those funded through Doctoral Training Accounts. In addition, we have provided funding for increased stipends for Capacity Building Studentships to help attract students to areas where greater research capacity is needed. MRC funding for training in generic and transferable skills for PhD students and post-doctoral researchers is being allocated through a common mechanism agreed with the other RCs.

Dorothy Hodgkin Awards for overseas students: the MRC has agreed to fund the second round of awards for this new scheme to provide fully funded PhD studentships at UK universities to applicants from India, China, Hong Kong, Russia and the developing world. As with the first round, the funding will be an additional £450k over three years.

Joint ESRC/MRC fellowship and studentship scheme: the aim of this scheme is to train a body of researchers able to work effectively in both the social and medical sciences, and undertake genuinely interdisciplinary work. Eleven fellowships and 20 studentships were awarded under the

first round of this scheme, for uptake in October 2004. A second round of awards will be made in 2005.

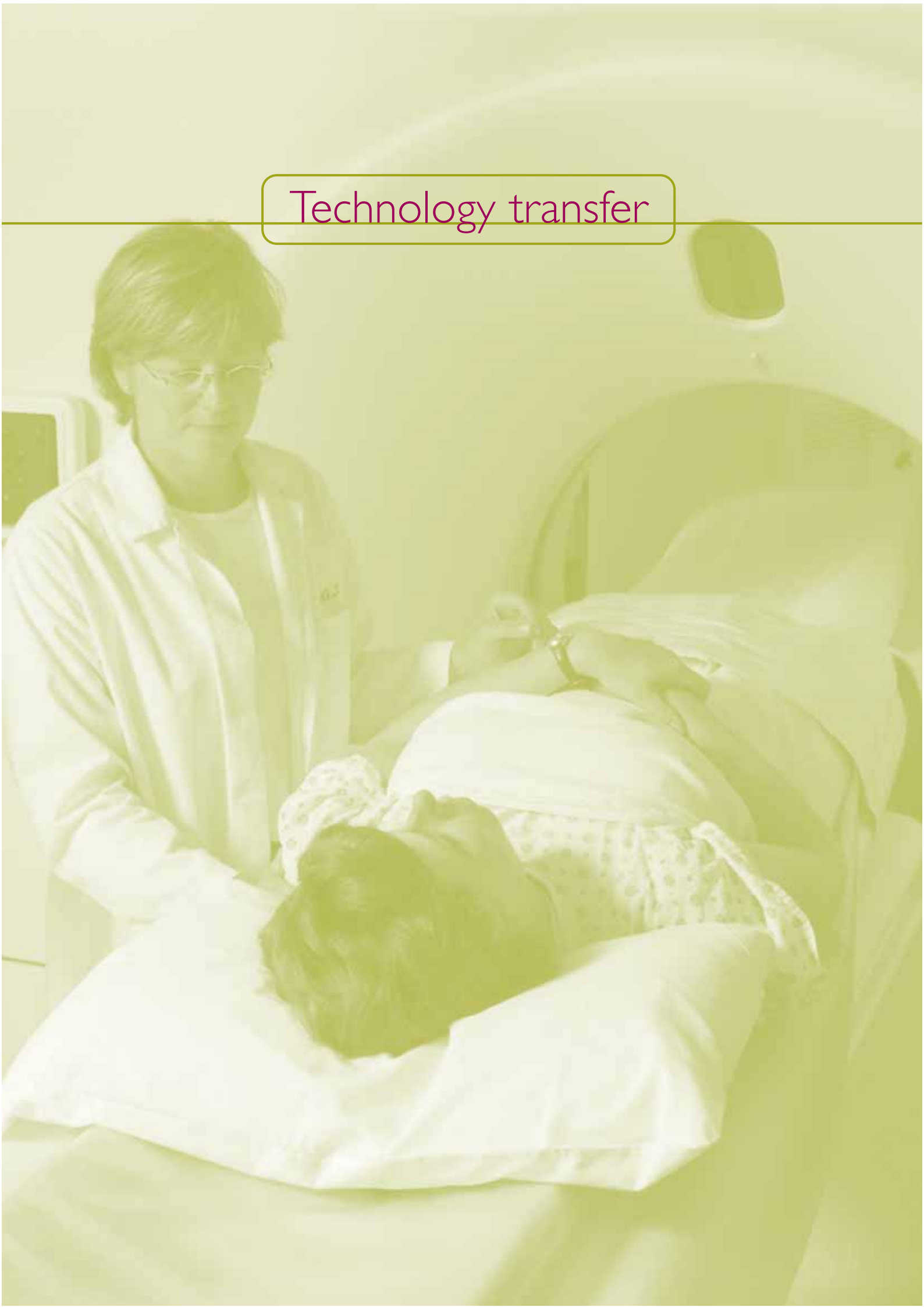
Review of MRC support for early career non-clinical scientists: during 2004/05 we reviewed our two grant schemes and two fellowship schemes aimed at supporting non-clinical scientists through the transition from post-doctoral positions to running their own research groups. Our consultation for this review included a questionnaire sent to all MRC grant-holders, board and panel members; a workshop for holders of relevant awards; and consultations with other funding bodies. Following the review we have decided to merge the grant schemes into a single New Investigator Award; to retain the fellowship schemes and review them further after publication in 2005 of a report on fellowship schemes by the Academy of Medical Sciences; and to increase funding for the Career Development Award scheme in 2005.

Review of the Pre-doctoral Fellowship scheme: following a three-year pilot, the MRC reviewed this scheme in 2004/05 and has decided not to continue it. The scheme's original aim, that of making postgraduate training more attractive through salaried fellowships in MRC units and institutes, is less necessary now that studentship stipends have increased as a result of the Roberts Review.

Review of the Research Professorship scheme: this review is ongoing and will be completed during 2005. MRC clinical research training schemes: during 2004/05 a sub-committee on clinical academic careers, whose membership included representatives from the UK Clinical Research Collaboration and Modernising Medical Careers, developed recommendations to help address the shortage of clinical researchers in the UK. During 2005 we will review our clinical research fellowship schemes for all career stages.

See section 5 of the MRC Operating Report 2004/05 for progress against 'Training and workforce development' targets in the MRC Operating Plan 2004/05.

Technology transfer



Technology transfer

The MRC's strategic objective for commercial exploitation:

- To encourage commercial exploitation for the benefit of national health and wealth.

Government Science Budget knowledge transfer objectives:

- To increase the performance of the science and engineering base in exploiting the results of its research.
- To increase the effectiveness of knowledge transfer from Research Council (RC) institutes in line with the recommendations of the Baker Review of public sector research establishments and the National Audit Office report on commercialisation of public sector science.

MRC Technology

Knowledge transfer by the MRC

The MRC works with industry and investors to expand exploitation of its research, primarily through its affiliated company, MRC Technology Ltd (MRCT). The MRC has direct responsibility for technology transfer with respect to its own units and institutes.

Accelerating knowledge transfer

Following the Department of Trade and Industry's *Innovation Report* (2003), the MRC has developed plans to increase its rate of knowledge transfer and interactions with industry, using an approach coordinated with the other RCs through the RCUK Knowledge Transfer Group. These plans form part of the MRC's delivery plan.

Drug Discovery Group: in December 2004, the MRC's Council approved plans for the creation of a Drug Discovery Group within the commercial environment of the MRCT's laboratory facilities. The group will be managed as a similar private sector operation would be. However, its remit will span the entire range of research fields funded by the MRC, including potential drug targets in neglected diseases and prospective targets currently regarded as too high-risk by the pharmaceutical industry. This is a significant development in line with the MRC's objective of translating cutting-edge biology into treatments and medicines.

Patent portfolio audit: a minority of the patents filed by the MRCT are subject to multiple non-exclusive licences, whereby responsibility for patent management and costs remain with MRCT rather than passing to the commercial partner. To determine whether this continued support of patent applications is justified, in 2004/05 MRCT conducted a review of the entire MRC patent portfolio. The aim was to identify and discontinue patent applications with low commercial potential, thereby enabling resources to be focused on cases with strong potential. The audit led to 34 patent filings being abandoned, which has reduced the portfolio to 151 patent cases actively managed by MRCT, of which 51 had one or more non-exclusive or field-exclusive licences by February 2005.

Prior to the audit, patent costs had been rising steadily each financial year, reaching £1.31m for 2003/04. Costs for 2004/05 amounted to £1.21m. Once the full effect of the audit is seen, MRCT expects that a new steady state in costs will be reached, as new high-potential filings are made and partnered and older 'orphan' cases are reviewed and abandoned.

Development Gap funding: this is the second full year of the MRC's Development Gap scheme, through which funding is made available to MRC units for commercially orientated basic research in order to provide proof-of-concept data, particularly to strengthen patents during the priority year. Since autumn 2003, MRCT has processed 28 applications and funded 16 projects at a total of £1.9m. The earliest projects were complete or nearing completion at the end of the year and efforts are underway to partner or license the intellectual property rights that are generated.

The Development Gap Fund has also been used to stimulate industry interest in partnering innovative research with potential commercial application. One example of this is funding for a collaboration between the MRC Laboratory of Molecular Biology and Pfizer, the world's biggest pharmaceutical company. The award will help the laboratory to develop techniques to elucidate

the three-dimensional structure of human G protein coupled receptors – a class of drug targets that have been key to advances in the search for medicines to treat conditions where medical need remains high.

Working with industry

Licence agreements: 26 new agreements were signed during the year. MRCT completed three revenue share agreements with academic institutions, which will be taking the lead in managing exploitation of jointly owned patents. Some of the more important licences relate to technologies where the first application in a patent family was filed several years earlier. For instance, microdroplet technology, which allows billions of individual experiments to be performed in parallel, and which originated in the MRC Laboratory of Molecular Biology nearly 10 years ago. This technology is now attracting considerable interest for a variety of applications, including protein engineering and selection, which the MRC has begun to license on a non-exclusive basis.

Start-up companies: no new companies based on MRC technology were established in 2004/05. Existing start-ups however, continued to flourish. In March 2005 Ardana Ltd became the first MRC start-up company since Cambridge Antibody Technology to be floated directly on the London Stock Exchange, although some other listed biotechnology companies such as Vernalis and BioFocus derive in part from MRC start-ups which merged with other entities. Ardana, a biotechnology company based in Edinburgh, was created in 2000 on the basis of licences and options to intellectual property arising in the MRC Human Reproductive Sciences Unit. Although Ardana subsequently acquired rights to nearer-to-market products from other companies, it continues to develop earlierstage technologies arising in the unit and, prior to listing, agreed a revised and more focused option agreement with the MRC that will take effect in July 2005.

Licence income (resource): the MRC's income from licensing increased substantially, from £14.3m in 2003/04 to £27.3m in 2004/05 excluding interest (£1.2m), on balances in the MRC's Commercial Fund. The increase is largely attributable to higher royalty income from MRC licences in the field of antibody engineering. This is in part because of the success of Humira, a therapeutic antibody product for treatment of rheumatoid arthritis that is derived from phage display technology licensed to Cambridge Antibody Technology Ltd. In addition, royalty income under patent licences in the humanised antibody field has increased substantially, partly as a result of new products receiving marketing approval.

In 2002/03 income from ad hoc licences to reagents – mainly antibodies – arising from MRC intramural work was approximately £220k. MRCT recognised that there was potential to increase this, and during 2004 set up a database containing information about each reagent (specification, application, etc.) to track non-exclusive licences to reagent companies. An MRC research reagents catalogue was produced and copies were sent to all MRC units and institutes to encourage MRC scientists to use and provide reagents. The catalogue was also published on the MRCT website and distributed to a large number of companies, which has resulted in many requests for licences to antibodies, transgenic mice and other tools, with several new licences currently under negotiation.

Optical projection tomography: the MRCT's laboratories in Edinburgh continue to work closely with the MRC Human Genetics Unit in support of the invention of optical projection tomography (OPT) by Dr James Sharpe. MRCT is operating a service offering OPT imaging to the scientific community on a fee-for-service basis (for details visit www.bioptonics.com). This initiative stems from a large demand for imaging following the publication of a paper about the technique. In parallel, the MRC commissioned a small equipment manufacturer to design and build working machines. The first prototype instrument is being beta-tested by the inventor at MRCT Edinburgh, and OPT machines should be available for purchase by autumn 2005.

See section 7 of the MRC Operating Report 2004/05 for progress against 'Knowledge transfer' targets in the MRC Operating Plan 2004/05.

Technology transfer indicators

These figures show that the MRC's exploitation of intellectual property arising from its intramural research is effective according to both national and international standards. Licence income, for instance, is equivalent to 9.17 per cent of research expenditure on MRC institutes and units, which on the basis of the most recent comparative figures available is more than three times the proportion achieved overall by US universities and around 15 times the level in UK universities.

Employment in start-up companies

Company	Number of employees (FTEs)		
	at 31 March 2003	at 31 March 2004	at 31 March 2005
Cambridge Antibody Technology	299	271	280
ML Laboratories (Cobra)	75	88	114
TopoTargets (Prolifix)	36	45	60
MRCT (all sites)	54	66	67
BioFocus (CGL)	162	130	140
Vernalis (Ribotargets)	92	125	127
Sangamo (Gendaq)	65	63	65
AERES Biomedical	8	7	7
Domantis	35	40	44
Avidis	13	11	7
Ardana Biosciences	17	26	23
MVM	10	9	8
Hammersmith Imanet	73	80	72
Argenta Discovery (Etiologics)	15	18	100
Iclectus	4	5	4
Oxxon Therapeutics	15	30	35
Total	**973**	**1,014**	**1,135**

Brackets show MRC start-ups which have merged with other companies. The list does not include Celltech Group plc (now part of UCB Pharma), although this originated in 1980 as a start-up company based on MRC technology.

FTEs = full time equivalents.

Revenues

Year	Income (resource*) from exploitation of intellectual property (£k)
2001/02	13,469
2002/03	15,118
2003/04	15,043
2004/05	28,516

* *These figures differ from the cash income in the table below particularly as they include some royalties earned on product sales in the year preceding actual receipt. The figures include interest received on balances in the Commercial Fund.*

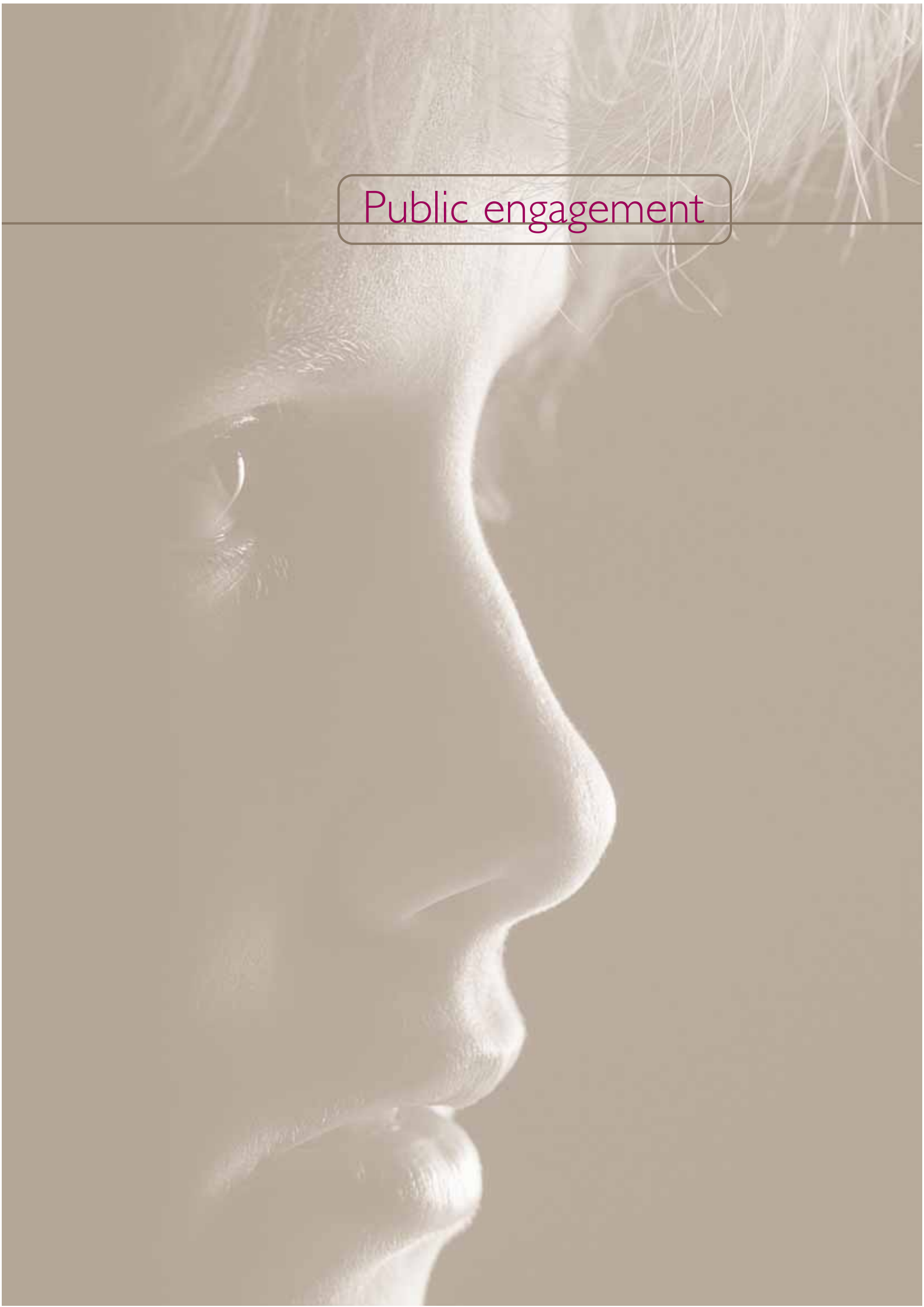
The increase in 2004/05 was driven largely by higher royalty income on end-product sales from patent licences. In the light of the poor market in shares in the biotechnology sector during this period, the MRC did not sell any of the equity that it holds in listed companies derived from the licensing of intellectual property.

Year-on-year trends on MRC exploitation activity

Year	New patent filings	New licences (cumulative totals in brackets)	Cash income from exploitation of intellectual property (£k)	Interest on balances in Commercial Fund (£k)
1998/99	40	25 (251)	2,853	nil
1999/2000	32	26 (301)*	7,582	nil
2000/01	34	36 (337)	17,946**	nil
2001/02	50	42 (379)	11,713	nil
2002/03	41	32 (411)	14,128	53
2003/04	28	26 (437)	15,219	701
2004/05	17	24 (457)	20,812	1,192

* *Cumulative figure adjusted following review of licences.*
** *Includes £8m from share sales.*

Public engagement



Public engagement

The MRC's strategic objective for public engagement:

- To engage the public in medical research, including dialogue about its implications for society and health.

Government Science Budget Science in Society objectives:

- To enhance public awareness of the outcomes from and priorities for publicly funded science and increase openness over its management and use through greater engagement and dialogue with the public.
- To increase the reach and impact of activities undertaken by the Research Councils and other bodies funded through the Science Budget by improving joint working between them and other organisations.

Engaging with the public

The MRC's science and society programme has two components: involving members of the public and seeking their views through dialogue and consultation, and promoting the health benefits resulting from the work and achievements of MRC scientists.

Events and partnerships

In June 2004 we held a celebratory event at the Royal College of Physicians to mark a number of clinical research milestones, including the 60th anniversary of the MRC's first randomised controlled trial, the 50th anniversary of the study that identified the link between smoking and lung cancer, and 20 years of HIV research. The invited audience included health professionals, scientists, charities, patient groups and interested members of the public.

Once again, science festivals provided excellent opportunities for young MRC researchers to engage with public audiences. For example, our DNA science stand at the Edinburgh International Science Festival in April, which is organised by local MRC PhD students. To help develop other young researchers' public communication skills, we ran a one-day training event for MRC Career Development Fellows. A number of participants then put their learning into practice at the Cheltenham Science Festival, engaging family audiences in interactive activities such as cell staining.

In partnership with the European Dana Alliance of the Brain, the MRC supported the medical sciences events at the BA Festival of Science in Exeter in September 2004. The theme was the creative brain. Dr Lizzie Burns, an MRC-sponsored scientist and artist, held a series of associated workshops at local schools that culminated in an exhibition of the children's work at the Festival and at Exeter Cathedral. Another BA Festival activity was Perspectives, a poster competition in which researchers presented their science in its societal context, sponsored by the MRC and the Engineering and Physical Sciences Research Council.

This year the MRC introduced a small grant scheme to support scientists' involvement in public engagement, which contributed to us running 14 projects during National Science Week; the formats and topics included an open day on Alzheimer's research, a week-long series of art and microbiology workshops in primary schools, and an interactive exhibition on the senses at Manchester Museum.

During the year the Stem Cell Communication Coalition – made up of the MRC and other major funders of stem cell research – developed a media training project aimed at scientists working in stem cell research. The MRC also continued to take an active role in the Coalition for Medical Progress (CMP), a group of industry, charity, academic and funding organisations working in research involving animals. The CMP's awareness-raising work in 2004/05 included a booklet for GPs' surgeries called Understanding Your Health and Animal Research, sponsorship of an Observer newspaper supplement on animal research, and a parliamentary reception hosted by health minister Lord Warner. When in January 2005 MORI was asked to repeat questions from an opinion poll commissioned by the CMP in 2003, the results showed a positive trend in people's support for the use of animals in research.

In partnership with the Natural Environmental Research Council, the MRC sponsored a series of online debates and associated evening discussion events on the theme Environment and Health. These covered health issues associated with air pollution, chemicals and climate change, and attracted nearly 10,000 visitors to the discussion site.

MRC Advisory Group on Public Involvement

Now in its fourth year, the MRC's Advisory Group on Public Involvement (AGPI) continued its activities across the MRC's work. During the year the members focused on how best to be involved in assessment of research proposals and ways of facilitating the public's involvement in basic science, which included conducting a survey to elicit the views of MRC units about the value and appropriateness of such involvement. Two AGPI members were invited to be participating members of the strategic subgroup of the MRC's Council. In October 2004, 16 new members were recruited to form an extended public involvement network designed to provide a broader range of experience and greater opportunity to be involved at a regional level. The AGPI's role in 2005 will be developed to integrate their perspective within a wider programme of public consultation.

Communicating the work of the MRC

During the year the Corporate Communications Group led a comprehensive programme of activities to promote the work of the MRC, with particular focus on the achievements of MRC scientists. Our activities included an audit of the MRC's reputation among external stakeholders, a major project which we completed in early 2005. The results of this survey of our various external audiences, including the general public, will help to shape the MRC's business during 2005/06 and beyond.

Media

The MRC press office continued to receive a high level of interest from journalists with about 4,000 media enquiries during the year. By proactively publicising the work of the MRC, the team gained extensive coverage in broadcast and print media with both scientific and lay press covering many MRC stories.

In order to target the media more effectively and rapidly and to offer MRC scientists more variety when promoting their work, the press team introduced new ways of working to complement press release activity. These included electronic bulletins, news flashes, offers of exclusive news stories to high-profile publications and programmes, and MRC web news stories.

Topics that attracted wide media attention included a study that provided a comprehensive assessment of the measles-mumps-rubella (MMR) vaccine and autism; the opening of the MRC-funded UK Stem Cell Bank; and the news that a widely available antibiotic drug can cut AIDSrelated deaths in children after infancy by 43 per cent.

Print and web communications

During the year the publications team produced more than 50 publications and events' support materials, and worked with a range of MRC head office groups on their print and online communications needs.

The MRC Annual Review 2003/04, our leading public-facing publication, showcased a wide range of MRC-funded scientific achievements and illustrated the two-way process by which such achievements are translated into healthcare benefits. In February 2005 we launched *Ageing and Health*, the first in a new series of booklets aimed at the general public and non-scientific professionals. Entitled MRC Research for Lifelong Health, the series is designed to provide an accessible, engaging overview of MRC-funded research in specific areas.

Key examples of publications aimed at scientific and government audiences included the MRC Strategic Plan 2004–2007, a review of research into assisted human reproduction, three MRC ethics guides, and a funding information leaflet for clinicians. In addition to *MRC Network*, a quarterly newsletter for the scientific community, the team produced newsletters for the Learning and Development Group, the Centre for Best Practice for Animals in Research (now the National Centre for the 3Rs), and an annual newsletter for clinical researchers. We also produced publications to inform MRC staff about flexible working arrangements, training opportunities for part-time staff, and a new Career Development Fellows scheme.

During the second half of 2004/05 the web team has been working on the initial stages of a comprehensive redevelopment of the MRC corporate website. Other web projects included editorial management of the International Stem Cell Forum site that the team launched in 2003/04, and advising on development of the EU Clinical Trials Directive 'route map' website.

Parliamentary

The MRC submitted evidence to a number of parliamentary inquiries during the year.

House of Commons Science and Technology Select Committee inquiries:

- *The Use of Science in UK International Development Policy* – Mr Nick Winterton, MRC Executive Director, appeared before the committee in June 2004.
- *Scientific Publications: Free for All?* – the MRC contributed to RCUK's written evidence to the committee which was published in July 2004.
- *Human Reproductive Technologies and the Law* – the MRC contributed to RCUK's written evidence in May 2004. Professor Catherine Peckham, Chair of the MRC/Human Fertilisation and Embryology Authority Working Group on Assisted Reproduction and Dr Robin Lovell-Badge, MRC National Institute for Medical Research, presented oral evidence to the committee in November 2004.
- *The Future of the NIMR* – the MRC submitted written evidence to the committee in November 2004. Sir Anthony Cleaver, MRC Chairman; Professor Colin Blakemore, MRC Chief Executive; and Professor John Savill, MRC Council member, presented oral evidence to the committee in December 2004. The committee also heard oral evidence from Sir John Skehel, Director of the NIMR; Dr Robin Lovell-Badge and Dr Steve Gamblin, NIMR Task Force representatives; Professor Nancy Rothwell and Professor Alan North, MRC Forward Investment Strategy Sub-Committee; and NIMR Task Force members Professor Stephen Tomlinson, Professor Kay Davies, Professor Richard Flavell and Sir Paul Nurse.
- *Strategic Science Provision in English Universities* – the MRC contributed to the RCUK's written evidence in January 2005.

Other Parliamentary Select Committees to which the MRC gave evidence:

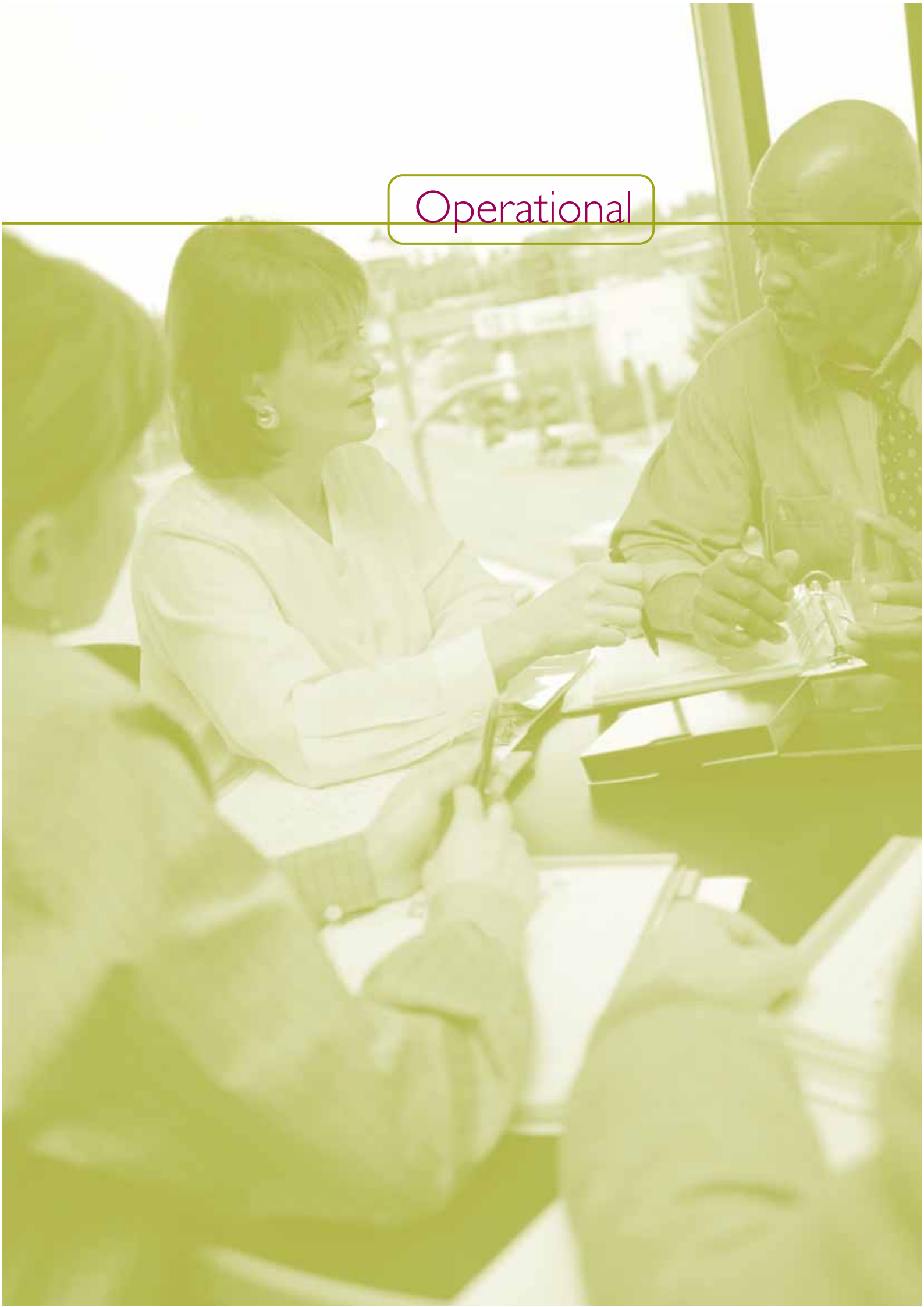
- *House of Commons Health Select Committee Inquiry into the Influence of the Pharmaceutical Industry* – the MRC contributed to the RCUK's written evidence in August 2004 and Dr Roberto Solari, Chief Executive of MRCT, presented oral evidence to the committee in December 2004.
- *House of Lords Science and Technology Select Committee Inquiry to Examine the Scientific Aspects of Ageing* – the MRC contributed to the RCUK's written evidence in October 2004 and Dr Diana Dunstan, Director of Research Management, appeared before the committee in February 2005.

Transcripts of the evidence received by the committees and their published reports are available on the committees' sections of www.parliament.uk.

The MRC Knowledge Management Group has dealt with a significant number of parliamentary questions and enquiries for MPs, as well as providing information to the DoH, the OST and the Scottish Executive for ministerial briefing requests during the year.

See section 8 of the MRC Operating Report 2004/05 for progress against 'Science in Society' targets in the MRC Operating Plan 2004/05.

Operational



Operational

The MRC's strategic objectives for its operation:

- To provide leadership in the governance of research and operate according to rigorous principles.
- To promote good practice, and strive for improvements in effective organisation, including appropriate methods for the evaluation of all aspects of performance.

Government Science Budget operational objectives:

- To complete work on implementation of the recommendations of the 2001 quinquennial reviews.
- To meet the Government's requirements and targets concerning freedom of information, e-business (including electronic records management), the modernisation of public services, and the promotion of social and gender equality of opportunity.
- To have established the systems to support a coordinated performance management system for the Science Budget and the Research Councils (RCs) in time for the next spending review.

The MRC contributed to these objectives through joint working with the other RCs under the auspices of Research Councils UK (RCUK), and by pursuing a number of internal operational objectives.

Good research practice and ethics

Data-sharing and preservation – population-based research and clinical trials

The MRC Data Sharing Policy requires investigators to make explicit provision for preservation and sharing of data in the planning and execution of their research. To support implementation of the policy, the MRC engages with the research community and other stakeholders as follows:

- A Joint Data Standards Study that is examining practices across the life sciences in the areas of incentives, standards development and implementation, barriers and funding models. The focus is on large-scale resources. The study was initiated by the Bioinformatics Funders' Forum and sponsored by the MRC in partnership with the Biotechnology and Biological Sciences Research Council (BBSRC), the Natural Environment Research Council, the Wellcome Trust, the Joint Information Systems Committee for the Support of Research and the Department of Trade and Industry. The study findings will be reported in July 2005.
- Development of good practice guides on data curation and preservation, prospective data working management and data-sharing strategies. The MRC is with data curation experts to develop practical advice for our population-based research communities, to be delivered by November 2005.
- Managing challenges of consent and confidentiality in medical research using personal data. Building on the MRC's existing guidance, this project will provide (i) a web-based route map through the current ethical, regulatory and legal processes, supported by principles of good practice and illustrated with informative, practical exemplars; and (ii) a summary of unresolved barriers to responsible sharing of research data for new, high-quality research that benefits the health of the public.

The study will be completed in late 2005.

Implementing the EU Clinical Trials Directive

In May 2004, the EU Clinical Trials Directive became law in the UK. Following an MRC-led impact assessment of the draft UK implementing regulations, the Department of Health and the MRC established a joint project to clarify the regulations and how they could best support academic-led clinical trials of medicines.

- The joint project team worked closely with the Medicines and Healthcare Products Regulatory Agency and the academic trials and research management communities to clarify uncertainties and document best practice. The outputs of the joint project were brought together in the Clinical Trials Tool Kit (www.ct-toolkit.ac.uk), a web-based system of user-friendly route maps. The site went live in October 2004, and by the end of March 2005 had been visited by 18,000 users.

Managing research governance standards

In 2004 the MRC set up a project to help MRC research establishments to implement the legislative and good practice requirements that govern research involving people. This involved a network of unit research governance representatives, who focused on the following priority areas: governance and management of human tissues and biological samples; clinical research sponsorship and institutional agreements; risk assessment; and training.

The aim of the project is to provide a shared resource of good practice for use across the MRC, which will enable MRC unit directors to confirm confidently that their research is conducted according to the required standards.

National Centre for the Replacement, Refinement and Reduction of Animals in Research (NC3Rs)

The MRC is committed to developing and disseminating the principles of the 3Rs: the replacement of animals with humane alternatives, the reduction in the numbers of animals used, and the refinement of husbandry and procedures to minimise any pain and suffering the animals may experience and to improve animal welfare. In May 2004, the MRC Centre for Best Practice for Animals in Research published the following guidance for those working with primates: *Best Practice in the Accommodation and Care of Primates Used in Scientific Procedures*, and *Key Considerations in the Breeding of Macaques and Marmosets for Scientific Purposes (a joint MRC/LASA statement)*.

Also in May, the Science Minister announced that the centre would be expanded to form the core of the National Centre for the Replacement, Refinement and Reduction of Animals in Research (NC3Rs). Launched in September 2004, the NC3Rs is independent from the MRC. However, the NC3Rs is part-funded by the MRC, to enable it to provide policy advice to us and to be our funding route for research on the 3Rs. Other funders include: the BBSRC, the Home Office, the Association of the British Pharmaceutical Industry and the Wellcome Trust. The MRC made £600k available to the centre in 2004/05.

The NC3Rs has a non-executive board, chaired by Lord Turnberg of Cheadle, comprised of experts across the spectrum of animal research, care and welfare and in vitro technologies. The board is responsible for the development of the NC3Rs' strategy and work plan and for ensuring that the NC3Rs meets the objectives set out in its mission statement. The centre's mission is to advance and promote the 3Rs in research and testing using animals licensed under the Animals (Scientific Procedures) Act 1986.

In September 2004 the NC3Rs announced a new funding scheme for research that advances knowledge in the 3Rs, with a budget of £500k for 2005/06. During 2004/05, the centre has been developing a new website providing comprehensive scientific resources on the 3Rs, which will be launched in July 2005.

Further information on the NC3Rs is available at www.nc3rs.org.uk.

MRC ethics and trials guidance

2004/05 additions to MRC ethics and trials guidance included: *Medical Research Involving Children*, and *Research Involving Human Participants in Developing Societies*. Both these documents are available at www.mrc.ac.uk.

Ethics of research overseas

The MRC was involved in preparations for the annual meeting of the Global Forum on Bioethics in Research, which took place in March 2005 in Malawi. With the topic 'What happens when the research is over?', this year's meeting looked at the challenges involved in translating the results of clinical trials into clinical practice in the region where the trial was undertaken.

In collaboration with four African countries, the MRC joined with INSERM, the World Health Organization, and the Department of Parasitology of the Eberhard Karls University of Tübingen (Germany) to develop a project to foster medical research ethics committees for reviewing clinical research in Africa. The initiative – Networking for Ethics on Biomedical Research in Africa (NEBRA) – has been funded by the European Community within its 6th Framework Programme. NEBRA intends to promote the integration of these African committees in the international debate on ethics.

Human Tissue and Mental Capacity Bills

During the year, the MRC continued to raise concerns with the DoH about the implications of the draft Human Tissue Bill for medical research. Working with the Academy of Medical Sciences, the Association of Medical Research Charities, the Wellcome Trust and Cancer Research UK, we briefed interested Members of Parliament and Lords about these concerns, many of which were taken account of during the Bill's passage through Parliament and included in the Human Tissue Act that was passed in November 2004. In response to the new requirements of the Act, the MRC will be issuing additional guidance to researchers on the use of human tissue in research during 2005.

In late 2004 the MRC, the Academy of Medical Sciences, the Wellcome Trust and the Royal College of Physicians worked together on a parliamentary briefing on the implications for clinical research of the Mental Capacity Bill, which was passed in April 2005.

MRC Committee on the Ethics of Research Involving Human Participants or Tissues and Personal Information

This committee was established during 2004 and is chaired by MRC Council member Professor Genevra Richardson. During the year it looked at the scientific community's concerns about the impact of excessive bureaucracy and regulation on research involving patients. As part of this exercise, the committee produced a draft MRC position statement on ethics and regulation which was considered by the MRC's Council at its public meeting in February 2005. Another topic it considered during 2004/05 was neuroethics – the ethical and social issues raised by new developments in neurosciences. A one-day workshop on the subject was held in January 2005 and the meeting report was published in April 2005.

Effective business practice

RCUK administration strategy

At the end of 2004/05 around 20 projects from the RCUK Research Administration Programme were in progress. Prioritised on the basis of external stakeholder benefit, all the programmes are scheduled to be fully delivered by the end of 2008, at which point the RCs will have implemented a common research administration system for processing grants, studentships and fellowships. During the year the MRC participated in RC working groups on a joint electronic submission framework and adopted new joint core grant terms and conditions.

Administration efficiency

In response to the Lyons Review, the MRC submitted a proposal to the Office of Science and Technology in January 2004 outlining future plans for the size and location of MRC head office. Our aim was a reduction of around 30 per cent in the number of posts based in London. Prompted by the Gershon Review and by our investment in new financial management systems (see below), the MRC initiated a new project in August 2004 to take a radical look at how to deliver administrative support functions throughout the MRC, including for our 32 research institutes and units.

Work done so far, which has focused on the priority areas of finance, human resources and procurement, indicates that reorganisation will enable the MRC to achieve better working practices while at the same time generating cash savings in administration costs. Our approach to reorganisation and relocation is the same as that of the Government – to relocate service delivery and routine processing functions and leave national policy-making and influencing work in London. The MRC's Council approved a business case in May 2005, which included a proposal to establish an MRC-wide service centre in Swindon to deliver the majority of transactional processes.

Investment in information systems

Auris partnership: the partnership between LogicaCMG and the MRC has been in operation for a year and is beginning to deliver new corporate information systems that are aligned to the delivery of specific business benefits defined by the MRC. LogicaCMG's remuneration is closely tied to the realisation of those benefits. The partnership's strategy is to fulfil most of the MRC's business requirements through the implementation of the SAP enterprise resource planning systems and through a corporate portal to which all staff have access. The portal went live in June 2004 and will be undergoing continuous development and introducing new services for a further year. It is anticipated that as these new services come on stream, the portal will grow into the default communication medium for all MRC staff.

The first major implementation of the SAP suite, the new financial, accounting and management information system (FAMIS), was commissioned into service in July 2004.

This system replaces all the different financial and accounting systems used by MRC establishments with a single, centrally supported service.

Electronic records management system: the MRC successfully implemented the Objective electronic records management system at its head office and at MRC Technology during November and December 2004. Four other RCs have also implemented the software, using systems based on a common file plan and metadata structure. Longer-term coordination of cross-Council records management has been transferred to the Joint Research Councils' Information Management Group.

Audit

In addition to fulfilling its remit with respect to issues of corporate governance, during 2004/05 the Audit Committee:

- Approved the rolling programme of compliance and systems audits performed by the RCs Internal Audit Service and reviewed the audit reports.
- Oversaw the continuing use of the Directors' Annual Statement of Internal Control across MRC establishments.
- Monitored business critical projects and reviewed reports from the MRC's management.
- Continued to monitor the risk-management practices within the MRC, in line with Treasury requirements.

Risk management

As a non-departmental public body, the MRC is required to set a policy and framework for the management of risk so that the Chief Executive and Accounting Officer is able to give assurance on the system of internal control that supports the achievement of the MRC's objectives. In July 2001 the MRC's Council approved a risk-management policy and structure which has been implemented to support the statement of internal control for 2004/05.

The head office risk register that was completed in July 2003 was refined further during 2004/05 by a head office steering group that started linking risks to the MRC's strategic objectives, to ensure that the register is fully embedded in the organisation and used in day-to-day management.

Freedom of Information

The MRC's Freedom of Information (FoI) project board coordinated systems across the MRC and produced staff guidance in preparation for full implementation of the FoI legislation on 1 January 2005. Between 1 January and 31 March 2005, the MRC received 34 requests for information which were dealt with under the FoI Act. Twenty-four had been answered within the required 20-day timeframe by 31 March 2005; the subjects of these requests were: specific disease areas (6), the MRC's decision-making processes (3), human studies (3), and general enquiries (12).

Environmental policy

The MRC is committed to continuous improvement of its environmental performance. MRC units must meet all relevant current and forthcoming statutory regulations and official codes of practice, and must specify that contractors do the same when working on MRC premises. Each unit is required to develop its own environmental policy, based on the MRC's central policy but adapted according to its local circumstances, and to report progress regularly.

As part of its work to achieve optimum environmental performance, the MRC continues to educate, train and motivate its staff and contractors to work in an environmentally responsible way and to play a full part in developing new initiatives. We also aim to cooperate with other bodies in the public and private sectors to develop and promote environmentally responsible practices.

In July 2004 the MRC's Council reviewed our progress in meeting the MRC's environmental management strategy. The Council encouraged continuing efforts to address the need to reduce any possible negative impact of MRC premises on the environment, by reducing the consumption of power wherever possible (including implementation of 'turn off ' policies) and by employing modern laboratory design methods in new premises.

Health and safety

During 2004/05 a major focus for the health and safety section was the ergonomics of laboratory and office work, following its investigation into the prevalence of upper-limb disorder in laboratory staff that was reported on last year. The section input into plans for new construction projects and examined workplace arrangements to identify the improvements needed. Training activities in this area included a seminar on aspects of laboratory design in conjunction with Lilly Research and the Institute of Safety in Technology and Research, and a seminar for unit safety coordinators on ergonomics and the management of upper-limb disorder.

We also published guidance on ergonomics for laboratory workers.

The health and safety section published a corporate policy and guidance on stress management. To help the MRC to manage potential stress factors effectively, we invested in a specialist software programme to refine our analysis of staff questionnaires.

The MRC's policy and guidance on research continuity planning was revised to make it more practically orientated. Each member of the corporate health, safety and security team was trained in continuity planning during the year, and this training will be cascaded to unit representatives during 2005.

A web-based accident recording system was launched in April 2004. This new system allows research units to report accident and occupational ill-health data locally whilst giving the corporate health and safety section the ability to analyse the data in detail across the MRC.

Scientific misconduct

The MRC is required to record incidence of scientific misconduct. As was the case in 2003/04, no new instances were reported among MRC researchers in 2004/05.

Register of members' interests

When the MRC's Council and board members are appointed, they are required to declare any private, professional or commercial interests that might conceivably conflict with the MRC's interests, or which might be perceived by others as creating a conflict of interest. Members are also responsible for notifying the MRC head office of changes in their other interests, as these occur, during the course of the year. The MRC publishes a central register of its Council members' interests, and separate registers for each of the research boards, at www.mrc.ac.uk.

Standards of service

The MRC monitors its standards of service against a list of key performance areas, including regularly reviewing standards and identifying additional measures where necessary. We report on our performance against these targets in the Annual Report and at www.mrc.ac.uk.

The MRC undertakes to:

- Abide by equal opportunities and anti-discrimination legislation.
- Ensure that procedures exist for consulting users proactively, e.g. partnership agreements with the Health Departments and other government departments, the work of our Advisory Group on Public Involvement, the electronic application and assessment (EAA) system, roadshows in universities, etc.
- Provide contact details on all external documents.
- Uphold high standards of integrity in all areas of our operations.
- Operate a complaints procedure, including names of contacts to which complaints should be directed.
- Maintain an up-to-date website.

See sections 9 and 10 of the MRC Operating Report 2004/05 for progress against 'Leadership and management of research governance' and 'Operational' targets in the MRC Operating Plan 2004/05.

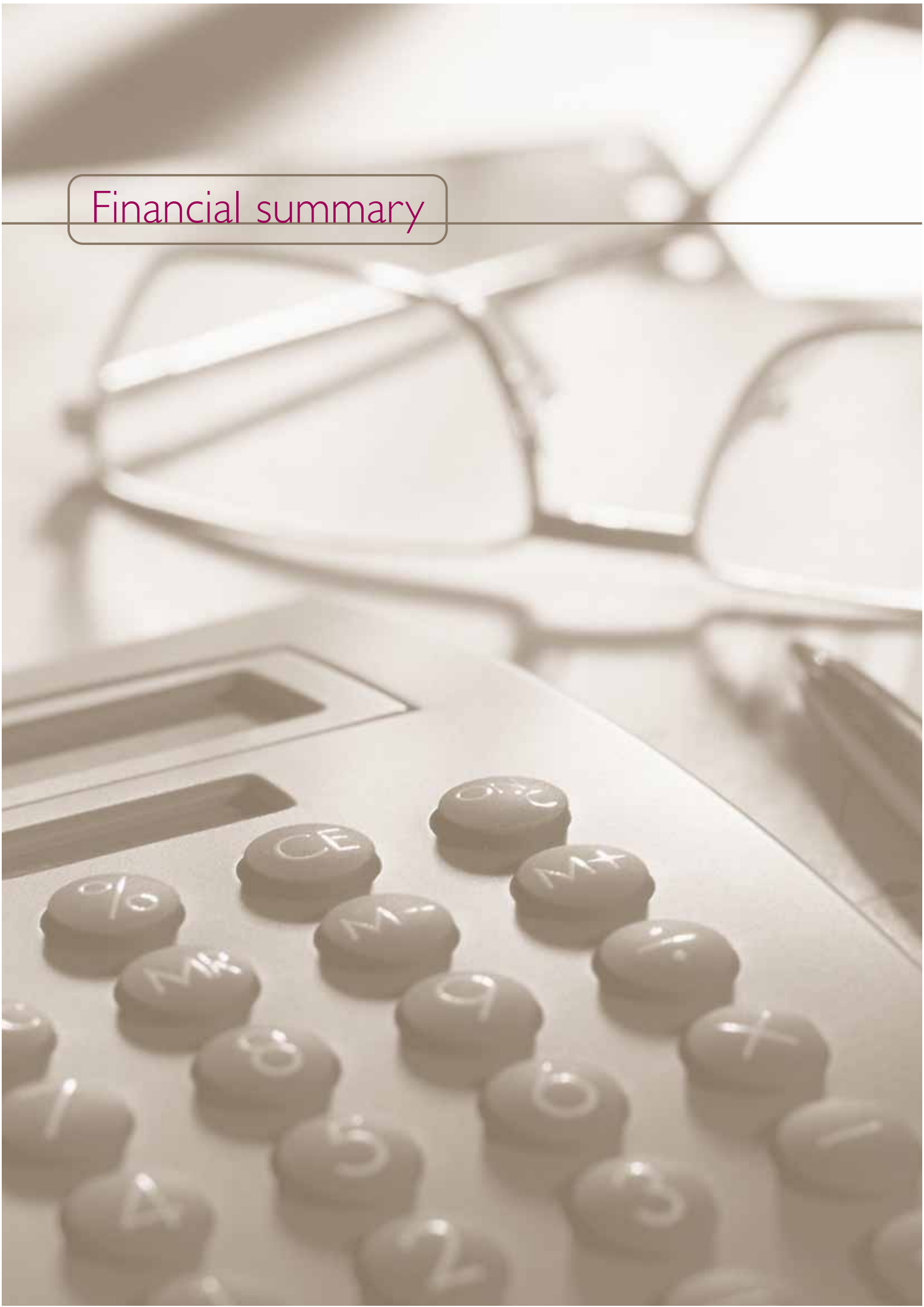
Standards of service

Area and target	Achievement in 2004/05
Grant applications	
Receipt of all grant applications will be acknowledged within 15 working days and applicants given an indication of the timetable for consideration	100% through the electronic application and assessment system
Grant applications will be considered by the MRC's peer review process within 26 weeks of the submission date	96% considered within 26 weeks
Feedback will be provided to grant applicants within 7 working days of a decision being made	100% within 7 working days
General correspondence	
Replies to general correspondence from members of the public will be sent within 20 working days[1]	100%[2]
Payment of invoices	
Payment of bills will be within 30 days of presentation	98% of invoices paid within supplier terms

[1] The deadline stated by the Freedom of Information Act 2000.

[2] This figure relates to requests for information received through the general corporate e-mail account during a 3-month sample period from 1 January to 31 March 2005.

Financial summary



Financial summary

A summary of our financial results in 2004/05 and the preceding two years is shown in the Resource and Capital tables below. The results in the Annual Account are adjusted to show a comparison of performance against budget; a reconciliation statement is provided to make these adjustments clear. Income and expenditure relating to commercial activities are included for comparability and are not subject to Departmental Expenditure Limit control. In accordance with government accounting, our financial statements are prepared on an accruals basis, so that expenditure is matched to the period when the services bought with it were provided.

Resource

Financial year	2002/03	2003/04	2004/05
	£000	£000	£000
Incoming resources			
DEL[1]	349,191	406,589	427,105
External income	77,183	55,252	53,430
Underspend (overspend) brought forward		23,028	37,909
Total income	426,374	484,869	518,444
Outgoing resources			
Pay and operating costs	198,831	225,084	223,503
Depreciation	-	23,898	16,954
Cost of capital	-	6,515	6,599
Provision movement	-	3,442	4,048
Research grants	178,861	171,200	171,489[2]
Capital grants to private sector	16,107	9,922	16,505
International subscriptions	9,547	6,899	8,828
Total expenditure	403,346	446,960	447,926
Underspend (overspend) carried forward – cash and non-cash	23,028	37,909	70,518
Cash	*23,028*	*31,099*	*50,830*
Non-cash[3]	-	*6,810*	*19,688*

[1] *Departmental Expenditure Limit (DEL) is the primary control of resource accounting and budgeting, replacing grant-in-aid. It includes an amount for EU DEL which acts as an expenditure control on EU-funded activities.*

[2] *This figure includes spend on all Research Career Awards (intramural and extramural) – £50.4m.*

[3] *This non-cash underspend comprises depreciation, cost of capital, movement of provision.*

Capital

	2002/03 £000	2003/04 £000	2004/05 £000
Capital DEL	28,036	24,057	28,034
Underspend (overspend) brought forward	-	7,669	5,305
Expenditure	20,367	26,421	28,437
Underspend (overspend) carried forward	7,669	5,305	4,902

Commercial Fund

	2002/03 £000	2003/04 £000	2004/05 £000
Income	15,118	15,043	28,516
Surplus (deficit) brought forward	12,619	20,497	27,911
Expenditure	7,240	7,629	9,376
Surplus (deficit) carried forward	20,497	27,911	47,051

Review of the year

The MRC is required by the Department of Trade and Industry (DTI) and the Office of Science and Technology to control its budgets within a Departmental Expenditure Limit (DEL) under the Resource Accounting and Budgeting regime. Results are those after having adjusted for the Government's PES database (Public Expenditure Survey). The result against DEL for 2004/05 was an underspend of £32.2m [£32.6m resource, (£0.4m) capital]. This underspend stemmed from grant-funded projects starting more slowly than forecast, often in the year after the money was awarded, and other items of expenditure, originally planned for 2004/05, having been deferred to 2005/06. Since this cash has already been allocated, these same funds could not have been made available in 2004/05 for other awards. This leaves a balance of £70.5m resource and £4.9m capital available to carry forward for use in later years. The small overspend on capital is offset against the carry forward from the previous year. Further commentary on performance during the year is given in the Annual Accounts.

Accounting for grant-in-aid

Grant-in-aid income is recognised when the cash is received. Expenditure is recognised on an accruals basis (i.e. when the recipient has fulfilled its obligations, such as carried out a period of research). Cash income is not drawn down until the cash expenditure is due to be paid. This means that there is an inherent, internal inconsistency in the accounts of non-departmental public bodies such as the MRC: expenditure can be recognised in the accounts before the related income is received.

The MRC's deficit for 2004/05

The income and expenditure account shown in the Annual Account records a deficit for the financial year of £23.2m. For the purposes of the statutory accounts the MRC is funded by cash grant-in-aid, and the grant-in-aid income in the accounts excludes non-cash movements, which are included in the OST budget. Non-cash items, such as depreciation and cost of capital, are charged to expenditure without a corresponding amount in income. This technicality within the government accounting systems accounts for the deficit (see above).

The balance sheet at 31 March 2005 shows provisions for liabilities and charges of £8.7m. This reflects the inclusion of liabilities falling due in future years which, to the extent that they are not to be met from the MRC's other sources of income, may only be met by future grant-in-aid from the DTI, the MRC's sponsoring department. This is because, under the normal conventions applying to parliamentary control over income and expenditure, such grants may not be issued in advance of need.

Grant-in-aid for 2004/05, taking into account the amounts required to meet the MRC's liabilities falling due in that year, has already been included in the department's estimates for that year, which have been approved by Parliament.

The figures shown in the financial summary tables are those after adjusting for the differences between statutory presentation and those scoring under the PES. A reconciliation of the finance tables is shown below.

Reconciliation of finance tables to Annual Account

	Notes	2004/05 £000
External income		
Contributions from other government departments	3	21,002
Contributions and grants from other bodies	4	23,381
Other income	5	9,047
		53,430
Pay and operating costs		
Staff costs	7	151,872
Less FRS17 current service costs	7e	12,990
Less increase in provision	21	4,048
Plus release of provisions	21	2,884
Other operating costs	8	85,785
		223,503
Depreciation		16,954
Cost of capital		
Cost of capital	1j	10,562
Less adjustment for Commercial Fund		3,963
		6,599
Provision movement		
Amount provided in year	21	3,807
Unwinding of discount	21	241
		4,048
Research grants		
Research grants	9	121,964
Less capital grants to private sector		15,429
Other research	10	14,560
Postgraduate training awards	11	50,394
		171,489

Reconciliation of finance tables to Annual Account *(continued)*

	Notes	2004/05 £000
International subscriptions		
International subscriptions		8,828
Plus capital grants to private sector		1,078
	12	9,906
Capital grants to private sector		
Research grants		15,429
International subscriptions		1,078
		16,505
Capital expenditure		
Fixed additions	16	29,002
Less donated asset	22	538
Less net book value of disposals	16	1,771
Plus loss on disposal tangible fixed assets	1 & E	1,744
		28,437
Commercial activities		
Income	13	28,516
Expenditure	13	9,376

Annual Accounts 2004/05

Details of current activities are to be found in the Annual Report.

Financial results for the year

- The income and expenditure account records a deficit of £23.2m.
- The parliamentary grant-in-aid totalled £380.9m.
- Total income excluding grant-in-aid amounted to £81.9m, staff costs totalled £151.9m, other operating costs excluding depreciation totalled £85.8m and expenditure on research grants totalled £122m.
- Total asset values increased by £64.9m, whilst creditors increased by £18.4m.
- Reserves, excluding the general reserve, showed a net increase of £9.6m.
- Total government funds at 31 March 2005 stood at £387.9m (Note 22).
- Amounts payable to the Consolidated Fund during the year were £400k (2003/04 = £235k) (Note 14).

Creditor payment policy

The MRC observes The Confederation of British Industry's Code of Practice. It adheres to the principles of the Prompt Payers Code, and makes every effort to comply with the agreed terms of payment of creditors' invoices, endeavouring to settle invoices within 30 days of receiving them or earlier if supplier terms dictate. In 2004/05 the MRC paid 98 per cent (2003/04 = 77%) of invoices within supplier terms.

Audit Committee

An MRC Audit Committee, chaired by Mr Derek Flint (MRC Council member), meets four times a year to review internal and external audit matters and the MRC's accounts.

Auditors

The MRC's accounts are audited by the Comptroller and Auditor General under the terms of paragraph 3(3) of Schedule 1 of the Science and Technology Act 1965. The audit fee for 2004/05 was £48k.

Colin Blakemore

Chief Executive and Accounting Officer MRC

12 July 2005

Statement of the MRC's and Chief Executive's responsibilities with respect to the financial statements

Under paragraph 3 of Schedule 1 to the Science and Technology Act 1965 the MRC is required to prepare a statement of accounts for each financial year in the form and on the basis directed by the Secretary of State for Trade and Industry, with the consent of the Treasury. The accounts are prepared on an accruals basis and must show a true and fair view of the MRC's state of affairs at the year-end and of its income and expenditure and cash flows for the financial year.

In preparing the accounts the MRC is required to:

- Observe the accounts direction issued by the Secretary of State for Trade and Industry, including the relevant accounting and disclosure requirements, and apply suitable accounting policies on a consistent basis.
- Make judgements and estimates on a reasonable basis.
- State whether applicable accounting standards have been followed, and disclose and explain any material departures in the financial statements.
- Prepare the financial statements on the going concern basis, unless it is inappropriate to presume that the MRC will continue in operation.

The Secretary of State for Trade and Industry has appointed the senior full-time official, the Chief Executive, as the Accounting Officer for the MRC. His relevant responsibilities as Accounting Officer, including his responsibility for the propriety and regularity of the public finances and for the keeping of proper records, are set out in the Non-Departmental Public Bodies' Accounting Officers' Memorandum, issued by the Treasury and published in *Government Accounting*.

Statement on internal control

1. Scope of responsibility

As Accounting Officer, I have responsibility for maintaining a sound system of internal control that supports the achievement of the MRC's policies, aims and objectives, set by the MRC's Council, whilst safeguarding the public funds and assets for which I am personally responsible, in accordance with the responsibilities assigned to me in *Government Accounting*.

The Department of Trade and Industry Accounting Officer has designated me as the Accounting Officer of the MRC, responsible for the effective, safe and efficient operation of the MRC in accordance with the Management Statement.

2. The purpose of the system of internal control

The system of internal control is designed to manage risk to a reasonable level rather than to eliminate all risk of failure to achieve policies, aims and objectives; it can therefore only provide reasonable and not absolute assurance of effectiveness. The system of internal control is based on an ongoing process designed to identify and prioritise the risks to the achievement of the MRC's policies, aims and objectives, to evaluate the likelihood of those risks being realised and the impact should they be realised, and to manage them efficiently, effectively and economically. The system of internal control has been in place for the year ended 31st March 2005 and up to the date of approval of the Annual Report and Accounts and accords with Treasury guidance. However, I recognise that a continued period of refinement during the year ended 31st March 2006 will be required to ensure that the process is fully embedded at the MRC.

3. Capacity to handle risk

Following consultation with the MRC's Executive Board and Audit Committee, and the Research Councils Internal Audit Service (RCIAS), the risk management policy originally developed and agreed by the MRC's Council in July 2001 was revised in March 2003 to reflect the full risk management framework which includes delegations, procedures and processes we have put in place to give effect to risk management across the MRC.

We aim to ensure that staff are trained or equipped to manage risk in a way appropriate to their authority and duties. We seek to ensure that all MRC staff understands the range and relative priority of risks they have to manage by:

- Setting appropriate objectives for staff in line with the MRC's policy on risk.
- Assigning ownership of key risks to people with the authority and responsibility to manage them.
- Identifying and in consultation with directors, assigning resources to the range of risks to achieve best value for money.
- Ensuring that the system of control is evidenced to support the corporate governance statement on internal control.
- Identifying in good time the risks that generate actual failures of control.
- Strengthening project management through a programme of targeted training, by providing guidance and induction in understanding risk and project management, in association with corporate objectives.

Embedding risk management across MRC staff and ensuring compliance with best practice is a continuing process.

4. The risk and control framework

Risk management and internal control are considered on a regular basis by the MRC's Executive Board and Audit Committee during the year. Risk management is an essential item in the corporate planning and decision making processes of the MRC and its institutes and units. Progress on the risk management assessment framework is regularly considered at meetings of the Risk Management Steering Group.

The MRC's Executive Board and Audit Committee will review the risk management framework throughout 2005/06. They will receive reports on the business critical projects and review the risk register. The standardisation and development of the management of business critical projects is to be explicitly continued. The process for mapping risks to corporate objectives which was started in 2004/05 will be concluded in 2005/06.

There is also an annual review of external risks using dipstick testing procedures which are operated in conjunction with other Research Councils. Dipstick testing is an important element of the framework to review expenditure and systems which support Research Council projects at universities and other research bodies. Although the programme of visits was scaled down in 2004/05 due to the commitment involved in the implementation of dual support reforms, a positive level of overall assurance was obtained.

5. Review of effectiveness

As Accounting Officer, I have responsibility for the effectiveness of the system of internal control. My review of its effectiveness is informed by the work of the internal auditors, the Audit Committee, which oversees the work of the internal auditors, and the MRC's risk management processes, Executive Board and research directors – who have responsibility for developing and maintaining the internal control framework – and comments made by the external auditors in their management letter and other reports. The Executive Board and the Audit Committee have advised me about the implications of the outcome of my review of the effectiveness of the system of internal control, and a plan is in place to address weaknesses and ensure continuous improvement of the system. The MRC has established the following procedures and processes to achieve this:

- The MRC's Council and its advisory committees: set risk policy and framework and review, which includes independent reviews of the quality and value for money of the MRC's scientific portfolio through peer review.
- The work of the MRC Audit Committee in accordance with Treasury guidelines, whose terms of reference includes to "monitor and advise on appropriate standards for risk management, and internal control."
- The role of the Executive Director, who is accountable and responsible to the Chief Executive for the organisation's operational risk management practices.
- The existence of an Executive Board comprising the Chief Executive, the Executive Director and the directors of the major business functions with meetings every week, whose responsibilities *in relation to risk* include:
    - Identification of risks and regular assessment of the sensitivity of the MRC risk profile and reporting on the risk profiles to the MRC Audit Committee twice a year.
    - Establishing project boards for the management of key projects.
    - Reviewing progress reports on individual projects.
    - Assigning responsibility for a particular risk area where it is not pervasive across the board.
    - Initiating action plans for implementing decisions about identified risks.
    - Reviewing performance in the management of risks.
    - Review and submission of business critical projects analysis to each meeting of the MRC Audit Committee.
    - Regular reviews of MRC's health and safety arrangements.
    - Review of targets set to measure performance across operational areas.
    - Regular reviews of periodic and annual financial reports which indicate financial performance against targets.
- The roles of the directors of major business functions, heads of sections (Band 2) at Head Office, directors of research and senior unit administrators and heads of departments/divisions/groups and principal investigators who are responsible for assessing, prioritising, and managing operational risks within their area of responsibility and documenting such risks in their risk registers.

- Submission of directors' Annual Statement of Internal Control and implementation of appropriate follow-up action, particularly where risks or weak controls are highlighted.
- The Chief Executive holds regular stewardship reviews with directors of the major business functions and directors of research, which include a review of the risk management approach as it relates to ongoing scientific and operational activity and future plans.

The MRC's internal audit is provided by RCIAS, which operates to Government Internal Audit Standards. The work of the internal audit unit is informed by an analysis of the risk to which the MRC is exposed. Annual internal audit plans are based on this analysis, together with comments from the MRC Audit Committee, who are asked to consider whether the planned activity addresses the MRC's current risks, and whether there are any other areas which require internal audit attention. The analysis of risk and the internal audit plans are endorsed by the MRC Audit Committee and approved by me. At least annually, the Head of Internal Audit at RCIAS provides me with a report on internal audit activity in the MRC. The report includes the Head of Internal Audit's independent opinion on the adequacy and effectiveness of the MRC's system of internal control.

6. Control issues

The Head of Internal Audit has given a positive reasonable assurance concerning the adequacy of the risk management, control and governance systems established by management. Whilst giving this assurance, a number of particular areas require further development: the governance processes between head office and MRC units, better budgeting and forecasting procedures, clearer mapping of risks to corporate objectives, further refinement and utilisation of the FAMIS system and the overhaul of the MRC's procurement processes. Work in all these areas was initiated during 2004/05. Aspects of change management, staff training, communication, performance management and project management were identified as areas that would also benefit from closer attention in order to facilitate the implementation of some of the MRC's major initiatives.

The MRC will continue to work with the Head of Internal Audit and his staff to ensure concerns are addressed. Progress will be ongoing during 2005/06.

As a result of the new FAMIS system, the MRC is now able to produce resource compliant accounts and the timetable for production of year end accounts has been significantly shortened. Some problems were encountered with management accounting, especially in the areas of data quality, reporting and training. These areas are currently being addressed, and most of the underlying problems have now been resolved.

Colin Blakemore

Chief Executive and Accounting Officer MRC

12 July 2005

The Medical Research Council

The certificate and report of the Comptroller and Auditor General to the Houses of Parliament

I certify that I have audited the financial statements on pages 52 to 78 under the Science and Technology Act 1965 Act. These financial statements have been prepared under the historical cost convention as modified by the revaluation of certain fixed assets and the accounting policies set out on pages 56 to 57.

Respective responsibilities of the MRC, the Chief Executive and Auditor

As described on page 46, the MRC and Chief Executive are responsible for the preparation of the financial statements in accordance with the Science and Technology Act 1965 and Secretary of State for Trade and Industry directions made thereunder and for ensuring the regularity of financial transactions. The MRC and Chief Executive are also responsible for the preparation of the other contents of the Annual Report. My responsibilities, as independent auditor, are established by statute and I have regard to the standards and guidance issued by the Auditing Practices Board and the ethical guidance applicable to the auditing profession.

I report my opinion as to whether the financial statements give a true and fair view and are properly prepared in accordance with the Science and Technology Act 1965 and Secretary of State for Trade and Industry directions made thereunder, and whether in all material respects the expenditure and income have been applied to the purposes intended by Parliament and the financial transactions conform to the authorities which govern them. I also report if, in my opinion, the Foreword is not consistent with the financial statements, if the MRC has not kept proper accounting records, or if I have not received all the information and explanations I require for my audit.

I read the other information contained in the Annual Report and consider whether it is consistent with the audited financial statements. I consider the implications for my certificate if I become aware of any apparent misstatements or material inconsistencies with the financial statements.

I review whether the statement on pages 47 to 49 reflects the MRC's compliance with Treasury's guidance on the Statement on Internal Control. I report if it does not meet the requirements specified by Treasury, or if the statement is misleading or inconsistent with other information I am aware of from my audit of the financial statements. I am not required to consider, nor have I considered whether the Accounting Officer's Statement on Internal Control covers all risks and controls. I am also not required to form an opinion on the effectiveness of the MRC's corporate governance procedures or its risk and control procedures.

Basis of audit opinion

I conducted my audit in accordance with United Kingdom Auditing Standards issued by the Auditing Practices Board. An audit includes examination, on a test basis, of evidence relevant to the amounts, disclosures and regularity of financial transactions included in the financial statements. It also includes an assessment of the significant estimates and judgements made by the MRC and Chief Executive in the preparation of the financial statements, and of whether the accounting policies are appropriate to the MRC's circumstances, consistently applied and adequately disclosed.

I planned and performed my audit so as to obtain all the information and explanations which I considered necessary in order to provide me with sufficient evidence to give reasonable assurance that the financial statements are free from material misstatement, whether caused by error, or by fraud or other irregularity and that, in all material respects, the expenditure and income have been applied to the purposes intended by Parliament and the financial transactions conform to the authorities which govern them. In forming my opinion I have also evaluated the overall adequacy of the presentation of information in the financial statements.

Opinion

In my opinion:

- the financial statements give a true and fair view of the state of affairs of the Medical Research Council at 31 March 2005 and of the deficit, total recognised gains and losses and cash flows for the year then ended and have been properly prepared in accordance with the Science and Technology Act 1965 and directions made thereunder by the Secretary of State for Trade and Industry; and
- in all material respects the expenditure and income have been applied to the purposes intended by Parliament and the financial transactions conform to the authorities which govern them.

I have no observations to make on these financial statements.

John Bourn

Comptroller and Auditor General

14 July 2005

National Audit Office

157-197 Buckingham Palace Road

Victoria, London SW1W 9SP

Income and expenditure account

for the year ended 31 March 2005

	Notes	2004/05 £000	2003/04 £000
Income			
Parliamentary grant-in-aid	2	352,455	383,461
Release of deferred income	22	14,273	21,729
Contribution for licence fees	2	98	98
Contributions from other government departments	3	21,002	31,313
Contributions and grants from other bodies	4	23,381	21,393
Commercial activities	13	28,516	15,043
Other income	5	9,047	10,367
Total income		**448,772**	**483,404**
Expenditure			
Staff costs	7	151,872	139,573
Other operating costs	8	85,785	97,903
Research grants	9	121,964	125,314
Other research	10	14,560	7,980
Postgraduate/training awards	11	50,394	52,255
International subscriptions	12	9,906	7,788
Commercial activities	13	9,376	7,629
Amortisation of intangible fixed assets	15	10,511	6,915
Depreciation of tangible fixed assets	16	16,954	18,179
Impairment of tangible fixed assets	16	-	5,719
Total expenditure		**(471,322)**	**(469,255)**
(Deficit)/surplus on operations		(22,550)	14,149
Interest receivable	6	407	253
Notional cost of capital	1j	(10,562)	(9,393)
Amounts payable to the Office of Science and Technology	14	(400)	(235)
Other finance income	7e	11,890	6,823
Unwinding of discount on provisions	21	(241)	(246)
Loss on disposal of tangible fixed assets		(1,744)	(1,518)
(Deficit)/surplus for the financial year		(23,200)	9,833
Reversal of notional cost of capital		10,562	9,393
Accumulated surplus on general reserve brought forward	22	38,955	9,077
Transfer from reserves on depreciation and amortisation	22	14,151	10,285
Transfer between reserves on disposal of fixed assets	22	822	367
Transfer to pension reserve	22	(7,233)	-
Accumulated surplus on general reserve carried forward		**34,057**	**38,955**

All activities are regarded as continuing.

The notes at pages 56 to 78 form part of these Accounts.

Balance sheet

as at 31 March 2005

	Notes	2004/05 £000	2003/04 £000
Fixed assets			
Intangible assets	15	110,255	84,740
Tangible assets	16	215,391	200,375
Investments	17	5,990	4,651
		331,636	**289,766**
Current assets			
Stocks	18	2,543	2,357
Debtors	19	33,525	24,443
Cash at bank and in hand		58,566	44,819
		94,634	71,619
Creditors	20	(51,784)	(33,368)
Net current assets		**42,850**	**38,251**
Total assets less current liabilities		**374,486**	**328,017**
Provisions for liabilities and charges	21	(8,793)	(7,629)
Net assets excluding pension asset		365,693	320,388
Pension asset	7e	22,230	62,788
Net assets		**387,923**	**383,176**
Capital and reserves			
Deferred grant-in-aid account	22	149,792	135,538
Revaluation reserve	22	65,218	63,429
Capital land reserve	22	5,896	6,059
Intellectual property reserve	22	110,255	84,740
Donated asset reserve	22	475	-
		331,636	289,766
Accumulated surplus on general reserve excluding pension reserve	22	34,057	38,955
Pension reserve	22	22,230	54,455
Accumulated surplus on general reserve including pension reserve		56,287	93,410
Government funds	22	**387,923**	**383,176**

The notes at pages 56 to 78 form part of these Accounts.

Colin Blakemore

Chief Executive and Accounting Officer MRC

12 July 2005

Cash flow statement

for year ended 31 March 2005

	Notes	2004/05 £000	2004/05 £000	2003/04 £000
Net cash inflow from operating activities	23		**13,712**	**9,743**
Returns on investments and servicing of finance				
Interest received	6	407		253
Payments to the Office of Science and Technology	14	(400)		(235)
Net cash inflow from returns on investments and servicing of finance			7	18
			13,719	9,761
Capital expenditure				
Payments to acquire tangible fixed assets and investments		(29,002)		(26,471)
Capital income				
Receipts from sale of tangible fixed assets		28		50
Net cash outflow from capital expenditure			(28,974)	(26,421)
Net cash outflow before financing			(15,255)	(16,660)
Financing				
Capital grant-in-aid received	22		28,464	26,471
Other capital funding received	22		538	-
Net cash inflow from financing			29,002	26,471
Increase in cash	24		**13,747**	**9,811**

The notes at pages 56 to 78 form part of these Accounts.

Statement of total recognised gains and losses

for the year ended 31 March 2005

	2004/05 £000	2003/04 £000
(Deficit)/surplus for the year	(23,200)	9,833
Reversal of notional cost of capital	10,562	9,393
Gains on revaluation of fixed assets	42,114	9,020
Actuarial (loss)/gain in pension scheme	(39,458)	58,008
Total recognised (losses) and gains for the year	(9,982)	86,254

Analysis of actuarial (loss)/gain recognised in the statement of total recognised gains and losses

	2004/05 £000	2003/04 £000
Actual return less expected return on pension scheme assets	13,226	78,378
Experience gains and losses arising on the scheme liabilities	5,988	9,429
Changes in assumptions underlying the present value of liabilities	(58,672)	(29,799)
Actuarial (loss)/gain recognised in statement above	(39,458)	58,008

The notes at pages 56 to 78 form part of these Accounts.

Notes to the Accounts

1. Accounting policies

a. Basis of accounting

The accounts have been prepared in accordance with a direction given by the Secretary of State for Trade and Industry, with the approval of the Treasury, in pursuance of Section 2(2) of the Science and Technology Act 1965.

The accounts have been prepared under the historical cost convention, modified to include the revaluation of tangible and intangible fixed assets and investments, and the valuation of stock to reflect current costs. Without limiting the information given, the accounts meet the accounting and disclosure requirements of the Companies Act 1985 and accounting standards issued or adopted by the Accounting Standards Board so far as these requirements are appropriate. The Accounts Direction exempts the MRC from the requirement to produce a note of historical cost profits, assets and losses.

b. Tangible fixed assets and depreciation

Expenditure on fixed assets includes the purchase of land, buildings and equipment costing £3,000 or more. Tangible fixed assets are included at cost or at valuation. Equipment, excluding computers and software, is revalued annually using appropriate indices. Land and buildings are professionally revalued every five years and in the intervening period relevant indices are used. (Buy-back lease arrangements are valued every five years only.) The basis of valuation for land and buildings is open market value for existing use where this can be established. However, because of the specialised nature of the MRC's properties, most valuations are on a depreciated replacement cost basis. Any surplus or temporary deficit on revaluation is taken to a revaluation reserve. Any permanent impairments in value are charged to the income and expenditure account in the year in which they arise.

Increased depreciation charges arising from revaluations are matched by transfers from the revaluation reserve to the general reserve. On disposal of a revalued asset, the resulting element of the revaluation reserve that is realised is transferred directly to the general reserve.

Provision is made for depreciation on all tangible fixed assets at rates calculated to write off each asset evenly to its residual value over its expected useful life, as follows:

Freehold land	Not depreciated
Leasehold land	Not depreciated
Freehold buildings	Up to 60 years
Leasehold buildings	Up to 60 years (subject to length of the lease)
Leasehold buildings (buy-back)	Up to 60 years
Major facilities (items costing over £50,000)	11 years
Other scientific equipment	5 to 15 years
Computers and software	3 years
Engineering, office and catering equipment	8 years
Motor vehicles	5 years
Assets under construction	Not depreciated until brought into use

Fixed assets originally valued at or costing £25,000 or more, which have been fully depreciated resulting in nil net book values and are still in productive use at the MRC's establishments, are revalued to determine their continuing worth.

c. Intangible fixed assets and amortisation

The values of patents, licences and royalties held by the MRC are capitalised as intangible fixed assets based on their expected income streams. Income from these patents, licences and royalties is generated from agreements between the MRC and companies engaged in the commercial exploitation of MRC inventions and research. The values of these intangible fixed assets are amortised over the period these agreements are in force. For most cases this is between seven and 15 years, and such assets are not capitalised until the income stream is reasonably certain. Income streams are reviewed each year. Any surplus or temporary deficit on valuations following such reviews is taken to a revaluation reserve.

d. Ownership of equipment purchased with MRC research grants

Equipment purchased by an institution with research grant funds supplied by the MRC belongs to the

institution and is not included in MRC's tangible fixed assets. Through the Conditions of Grant applied to funded institutions, the MRC reserves the right to determine the disposal of such equipment and of the proceeds of any sale.

e. Grant-in-aid

Grant-in-aid for revenue purposes is credited to income in the year to which it is received. Grant-in-aid applied for the purchase of land is credited to the capital land reserve account and that applied to the purchase of tangible fixed assets is credited to the deferred grant-in-aid account and released to the income and expenditure account over the estimated operational lives of the related assets.

f. Other income

Other income is shown net of trade discount, value added tax and other taxes.

g. Investments

Listed investments are shown at market value. Unlisted investments are shown at cost. Any surplus or temporary deficit on revaluation is taken to a revaluation reserve. Any permanent impairment in value is charged to the income and expenditure account in the year in which they arise.

h. Stocks

Livestock and consumable stores are included in the balance sheet at cost.

i. Research and development

As a research organisation, all MRC's research and development expenditure is charged to the income and expenditure account when it is incurred.

j. Notional costs

In line with HM Treasury requirements, a notional interest charge is included in the accounts to reflect a charge for the use of capital in the business in the year, as the MRC has no specific interest bearing debt. In accordance with Treasury guidance, the calculation is based on a 3.5 per cent rate of return on average net assets employed. Notional cost of capital charged during the period of the Account was £10,562,000 (2003/04 = £9,393,000).

k. Foreign currencies

Assets and liabilities denominated in foreign currencies are translated at the rates of exchange ruling at the balance sheet date. Transactions in foreign currencies are recorded at the rate ruling at the time of the transaction. All exchange differences are taken to the income and expenditure account.

l. Value added tax (VAT)

As the MRC is partially exempt for VAT purposes, all expenditure and fixed asset purchases are shown inclusive of VAT where applicable. Residual input tax reclaimable by the application of the partial exemption formula is taken to the income and expenditure account as negative expenditure.

m. Pension costs

Employer superannuation costs are based on an actuarially derived contribution rate. See note 7e.

n. Early retirement costs

Compensation payments are provided for in the income and expenditure account. Obligations relating to those former members of staff aged 50 or over are provided for until their normal date of retirement.

Unwinding of discount: the provision for early retirement costs is discounted at the MRC's notional cost of capital. The unwinding of the discount has been debited to the income and expenditure account.

o. Operating leases

Operating lease charges are recognised in the income and expenditure account in the year to which they relate. At 31 March 2005, the MRC had annual commitments of £1.5m for IT equipment under operating leases expiring in more than five years.

2. Parliamentary grant-in-aid and contribution to licence fees

The grant, and contributions in respect of (Animal) Licence Fees of £98,000 (2003/04 = £98,000), are provided by the Department of Trade and Industry (DTI) for the financial year 2004/05. The parliamentary grant-in-aid for 2004/05 was £380,919,349. The total allocation for the year was £414,919,349 but £34,000,000 was not called down.

	2004/05 £000	2003/04 £000
Grant allocation for recurrent expenditure	342,235	372,375
Grant allocation for capital expenditure	38,684	37,557
	380,919	409,932
Transferred to deferred grant-in-aid account for purchase of fixed tangible assets (note 22)	(28,464)	(26,471)
Credited to income and expenditure account	352,455	383,461

3. Contributions from other government departments

	2004/05 £000	2003/04 £000
Department of Health	14,439	14,320
Department for International Development	3,593	5,929
Ministry of Defence	621	504
NHS Executive	103	421
Joint Infrastructure Fund	-	6,645
Department of Trade and Industry	86	512
Foods Standards Agency	1,009	1,188
Scottish Home and Health Departments	271	722
Other	880	1,072
Total	**21,002**	**31,313**

4. Contributions and grants from other bodies

	2004/05 £000	2003/04 £000
Research Councils	4,041	2,701
Charities	6,983	6,260
Collaboration with industry	1,720	2,285
European Commission	3,451	2,501
World Health Organization	181	1,036
Human Frontiers Science Program	435	624
Health Authorities and NHS Trusts	1,213	1,065
Universities	2,094	3,519
Other sources	3,263	1,402
Total	23,381	21,393

5. Other income

	2004/05 £000	2003/04 £000
Sales and other income	9,047	10,367

The MRC's sales income is derived from laboratory and library services and proceeds from sales of radioisotopes, and other items.

6. Interest receivable

	2004/05 £000	2003/04 £000
Interest earned on the MRC's Euro and other accounts	23	18
Interest earned on the MRC's Sterling bank balances	384	235
Total	407	253

7. Staff costs

	2004/05 £000	2003/04 £000
Employee costs (note 7c)	147,576	135,892
Non-permanent staff	4,054	2,644
Remuneration to the MRC's Council and committee members (note 7d)	221	193
Early retirement costs (note 21)	1,794	3,141
Gross staff costs	153,645	141,870
Less commercial activities (note 13)	(1,773)	(2,297)
Staff costs for general activities	151,872	139,573

7a. Remuneration of senior employees

Chief Executive

The Chief Executive is an ordinary member of the MRC's pension scheme. His entitlements under his conditions of service are the same as those for other members of staff and should his contract be terminated early, he would be entitled to compensation under the terms of the MRC early retirement and severance compensation scheme. Professor Colin Blakemore's total emoluments were £118,800 including a performance related bonus of £8,800. His fixed-term appointment will expire on 30 September 2007.

As a result of the latest actuarial valuation of the MRC's pension scheme, there has been no employer's pension contribution in the year. See note 7e.

Senior managers

The salary and pension entitlements of members of the Executive Board were as follows:

	Chief Executive	Executive Director	Director of Human Resources Group	Director of Research Management Group	Director of Corporate Affairs Group	Head of NIMR Task Force	Director of Finance Group
	Prof C Blakemore*	Mr N H Winterton	Mrs E Sideris*	Dr D R Dunstan *	Mrs J M Lee	Dr D L Smith **	Mr N W R Watts*
Age	60	57	51	62	56	57	46
Salary, including performance related pay, at 31 March 2005	£118,800	£106,127	£84,559	£101,622	£76,630	£106,297	£78,354
Real increase in pension at age 60	£0-2,500	£2,501-5,000	£0-2,500	£2,501-5,000	£0-2,500	£2,501-5,000	£0,-2,500
Total accrued pension at age 60 at 31 March 2005	£0-2,500	£42,501-45,000	£2,501-5,000	£35,001-37,500	£27,501-30,000	£35,501-37,500	£0-2,500
Cash equivalent transfer value at 1st April 2004	£9,000	£684,000	£19,000	£476,000	£434,000	£523,000	-
Cash equivalent transfer value at 31st March 2005	£26,000	£770,000	£32,000	£552,000	£473,000	£620,000	£9,000

* *Real increase in pension at age 65.*

** *On 30 November 2004, Dr Smith retired from his position as Head of the MRC Task Force on the National Institute of Medical Research, and Dr Smith's figures are calculated as at that date.*

With the exception of Professor Blakemore's bonus above, no director received any bonus payments or benefits in kind. As a result of the latest actuarial valuation of the MRC's pension scheme, there has been no employer's pension contribution in the year. See note 7e.

7b Staff numbers

The average number of employees during the year was made up as follows:

	2004/05	2003/04
Job functions		
Science	1,233	1,201
Research project support	1,085	1,051
Management administration and policy	566	570
Technical services	443	438
Infrastructure	165	169
Locally employed staff (overseas)	933	1,044
Total	4,425	4,473

7c Employee costs

	2004/05 £000	2003/04 £000
Salaries and wages	124,145	116,538
Social security costs	10,415	9,462
Other pension costs (note 7e)	13,016	9,892
Total	147,576	135,892

7d Remuneration to the MRC's Council and committee members

	2004/05 £000	2003/04 £000
Fees and honoraria	215	186
Social security costs	6	7
Total	221	193

MRC Council Chairman

The position of MRC Council Chairman is non-pensionable and there is no entitlement to compensation for loss of office. His total emoluments were an honorarium of £14,550 (2003/04 = £14,225). His fixed-term appointment will end on 30 September 2006.

In addition, the following MRC board chairmen and Council members received honoraria falling within the following ranges:

	2004/05 Number	2003/04 Number
£5,001-10,000	11	11
Over £10,000	1	1

7e Other pension costs

Total pension costs	2004/05 £000	2003/04 £000
Current service costs (net of employee contributions relating to MRCPS)	12,990	9,862
Other schemes	26	30
Total	13,016	9,892

MRCPS

The MRC operates a funded pension scheme (MRCPS) providing benefits based on service and final pensionable pay at a normal retirement age of 65. The scheme is a defined benefit scheme that prepares its own scheme statements. Benefits accrue at the rate of 1/80th of pensionable salary for each year of service. In addition a lump sum equivalent to three years' pension is payable on retirement. Members pay contributions of six per cent pensionable earnings in the principal section. In addition to the principal section, the supplementary benefits section exists to provide additional benefits in the event of ill-health retirement or death-in-service. It is solely funded by members' contributions.

The required MRCPS contribution rate is assessed every three years in accordance with advice of the Government Actuary; the present MRCPS employers' contribution rate is zero per cent. The latest actuarial assessment of the MRCPS was as at 31 December 2004 at which the market value of the assets of the MRCPS was £758m (1998 = £591m). The actuarial value of the assets was sufficient to cover 117 per cent of the benefits that had accrued to members after allowing for expected future increases in earnings. On a minimum funding requirement basis, the scheme is more than 120 per cent funded.

FRS17: the valuation used for FRS17 disclosures has been based on the data for the most recent actuarial valuations as at 31 December 2004, updated to take account of the requirements of FRS17 in order to assess the liabilities of the scheme at 31 March 2005.

Financial assumptions used to calculate scheme liabilities

	2004/05	2003/04
	%	%
Rate of increase on pensionable salaries	4.30	4.30
Rate of increase on pension payments	2.80	2.80
Discount rate	5.40	5.40
Inflation rate	2.80	2.80
Expected return on equities	7.25	7.36
Expected return on bonds	4.63	4.69
Expected return on overall fund	6.90	7.10

The assets and liabilities in the scheme

	2004/05	2003/04
	Market Value	Market Value
	£000	£000
Assets		
Equities and property	544,794	511,587
Bonds and cash	74,205	55,086
	618,999	566,673
Actuarial value of liability	(596,769)	(503,885)
Surplus in scheme	22,230	62,788

The movements in the scheme surplus

	2004/05	2003/04
	£000	£000
Surplus at beginning of year	62,788	7,819
Current service cost (including employee contributions)	(19,341)	(15,110)
Employee contributions	6,351	5,248
Current service costs net of employee contributions	(12,990)	(9,862)
Other financial income	11,890	6,823
Actuarial (loss)/gain	(39,458)	58,008
Surplus at end of year	22,230	62,788

Other finance income

	2004/05	2003/04
	£000	£000
Expected return on pension scheme assets	39,100	31,090
Interest on pension scheme liabilities	(27,210)	(24,267)
Net return	11,890	6,823

Other schemes

The total superannuation contributions paid by the MRC in 2004/05 were £25,822 (2003/04 = £30,293). These amounts represent employers' contributions at five per cent and 10 per cent for a small number of long-serving members of the National Health Service Superannuation Scheme (NHSS) and Federated Superannuation Scheme of Universities (FSSU) respectively.

The NHSS is a multi employer unfunded scheme, and the MRC is unable to identify its share of the underlying assets and liabilities on a consistent and reasonable basis for inclusion in its financial statements.

The FSSU is a multi employer funded scheme, where the benefits are secured by assurance policies. Due to the conditions of the annuity market, the MRC do not consider any surplus/deficits accruing to the employer to be material.

8. Other operating costs

	2004/05	2003/04
	£000	£000
Rent and rates	4,311	5,082
General maintenance, cleaning, heating and lighting	6,600	6,054
Maintenance of buildings	6,925	5,671
Office supplies, printing and stationery	2,959	4,766
Laboratory supplies	25,878	34,918
Management consultancy and other professional fees	10,337	7,828
Postage and telephone	2,187	2,075
Audit fee	48	45
Travel, subsistence and hospitality	6,249	7,417
Computing	3,511	7,725
Equipment servicing	4,988	4,467
Minor equipment	2,093	6,007
Miscellaneous	8,891	4,728
Transport costs	582	661
Exchange rate (gains)/losses	(166)	441
Bad debts charge	392	18
Total	85,785	97,903

9. Research grants

During the year new grant schemes were introduced which in some instances replaced existing schemes. The 2003/04 figures have been reclassified accordingly. Grant schemes now closed have been included in Other.

	2004/05 £000	2003/04 £000
Research Grants	80,863	85,762
Centre Grants	3,493	-
Collaboration Grants	14,431	17,959
Discipline Hopping Awards	1,004	-
Link Award	641	-
New Investigator Award	125	-
Trial Grant	6,641	-
Other	14,766	21,593
Total	121,964	125,314

10. Other research

	2004/05 £000	2003/04 £000
Contributions to special research programmes	14,560	7,980

11. Postgraduate/training awards

	2004/05 £000	2003/04 £000
Research studentships/advanced course studentships	21,820	20,583
Post-doctoral fellowships	28,574	31,672
Total	50,394	52,255

12. International subscriptions

	2004/05 £000	2003/04 £000
International Agency for Research on Cancer	680	561
European Molecular Biology Conference	1,290	347
European Molecular Biology Laboratory	7,178	5,927
Human Frontier Science Program	758	953
Total	9,906	7,788

13. Commercial activities

	2004/05 £000	2003/04 £000
Income during the year	28,516	15,043
Expenditure during the year:		
Staff costs (note 7)	1,773	2,297
Other expenditure	7,603	5,332
	(9,376)	(7,629)
Net income for the year	19,140	7,414

The MRC requires a financial return from successful commercial exploitation of original MRC research. Such income arises from royalties, equity stakes and other forms of receipts as a result of licensing agreements of MRC inventions and know-how.

Income and expenditure relating to commercial activities is credited and charged to the income and expenditure account and its cumulative balance represented within the general reserve on the balance sheet. The cash surplus on such activities as at 31 March 2005 was £41,552,000 (2003/04 = £28,604,000).

14. Amounts payable to the Office of Science and Technology

	2004/05 £000	2003/04 £000
Other non-operating income (note 6)	384	235
Unspent animal licence fee contribution	16	-
Surrendered to Office of Science and Technology	400	235

The MRC's non-operating income, together with any underspend for licence fees payable under the Animal Licences Act 1986 are surrendered to the consolidated fund through the Office of Science and Technology.

15. Intangible fixed assets

Intangible fixed assets include patents and licences generated by MRC research.

At valuations	2004/05 £000
Net book value as at 1 April 2004	84,740
Additions	25,774
Revaluations*	10,252
Charge for the year	(10,511)
Net book value as at 31 March 2005	110,255

During the year net asset values were increased by the addition of two new patent holdings.

* *Future legal proceedings may result in an increase in value of the intangible assets. A number of uncertainties remain to be resolved at the balance sheet date.*

16. Tangible fixed assets

	Land and buildings*	Assets under construction	Equipment and vehicles	Total
	£000	£000	£000	£000
Cost or valuation				
At 1 April 2004	287,701	1,590	144,043	433,334
Reclassification	-	-	(263)	(263)
	287,701	1,590	143,780	433,071
Additions	5,576	13,069	10,357	29,002
Reclassification	-	(523)	523	-
Disposals	(3,317)	(69)	(4,341)	(7,727)
Revaluation	10,917	-	9,666	20,583
At 31 March 2005	300,877	14,067	159,985	474,929
Depreciation				
At 1 April 2004	137,966	-	94,993	232,959
Reclassification	-	-	(257)	(257)
	137,966	-	94,736	232,702
Provided during the year	5,090	-	11,864	16,954
Disposals	(1,860)	-	(4,096)	(5,956)
Revaluation	6,313	-	9,525	15,838
At 31 March 2005	147,509	-	112,029	259,538
Net book value				
As at 31 March 2005	153,368	14,067	47,956	215,391
As at 1 April 2004	149,735	1,590	49,050	200,375
At historical cost	171,603	14,067	134,830	320,500
Depreciation	(54,856)	-	(90,027)	(144,883)
Net book value	116,747	14,067	44,803	175,617

* *Tangible fixed assets include £17,556,109 in respect of land and buildings, which is not depreciated.*

The net book value of land and buildings comprises:

	2004/05 £000	2003/04 £000
Freehold	39,788	31,006
Long leasehold	98,976	102,012
Short leasehold	14,604	16,717
	153,368	149,735

Land and buildings were valued using relevant indices to establish valuations at 31 March 2005 and in accordance with SAVP and RICS guidance notes.

The last professional revaluation of land and buildings in the UK was performed by Powis Hughes and Associates, Chartered Surveyors, at 1 December 2003. Professional revaluations of land and buildings at the MRC's Laboratories in The Gambia and Uganda were performed locally by Sphinx Associates, Chartered Quantity Surveyors in association with BB Barry Consultancy Service (Land Economist) at 31 October 2003, and BBL (U) Chartered Quantity Surveyors in December 2003 respectively. Additional depreciation on revaluation of land and buildings during the year was £2,661,050.

17. Fixed asset investments and non-consolidated subsidiary companies and joint ventures

	Subsidiary companies £000	Joint ventures £000	Other investments £000	Total investments £000
Valuation as at 1 April 2004	-	227	4,424	4,651
Additions	-	-	506	506
Revaluation	-	-	833*	833
Valuation as at 31 March 2005	-	227	5,763	5,990

* *Represented by increases in value of £1,351k and decreases in value of £518k.*

Subsidiary companies

MRC Technology

MRC Technology Ltd (MRCT) is a company limited by guarantee and a registered charity which was set up to provide a laboratory-base for project management of applied research funded by industrial partners, and offer infrastructure to 'spin-out' companies. Since April 2000 it has also managed the exploitation of MRC intellectual property under a service agreement with the MRC.

MRCT is a separate legal entity that prepares its own accounts under a different format. Due to its charitable status, the risks and rewards of MRCT do not lie with the MRC and the MRC cannot exercise control over its decisions. MRCT has therefore been excluded from consolidation.

For the year ended 31 March 2005 the accounts of MRCT revealed a total loss for the year of £2,521,800 (2004 = £2,489,583 loss) and net assets of £5,573,234 (2004 = £5,768,488).

During the year ended 31 March 2005 the MRC provided goods and services to MRCT to a value of

£3,625,130 (2003/04 =£2,717,520). These goods and services were costed on the same basis on which they would be provided between departments within the MRC. As at 31 March 2005, the MRC was owed £1,804,399 (2003/04 = £722,065). There were no outstanding balances owing to MRCT.

MVM Limited

MVM Limited are venture capital fund managers. The MRC holds 100% of the ordinary shares valued at £117,578. The accounts of MVM Limited have not been consolidated into these financial statements on the basis that the amounts involved are not material to the MRC.

MVM Limited manages the UK Medical Ventures Fund and the International Life Sciences Fund. Both funds were formed to establish and invest in new companies to exploit biotechnologies, the primary source of technologies originating from the MRC's intramural research programme.

The funds are structured as a limited partnership and each fund has its own general partner (GP). MVM (GP) (2) Ltd was set up as GP of the International Life Sciences Fund, leaving MVM (GP) Ltd, as the UK Medical Ventures Fund. Both GPs are wholly owned subsidiaries of MVM Limited. The GP has unlimited liability for any unsatisfied obligations of the partnership, and is entitled to a priority profit share. Until such time as the funds have income and capital from which to make a payment of priority profit share, the partnership agreement allows the GP to draw loans on funds' cash assets, on an interest free basis, in respect of its prospective entitlement to priority profit share. In the year to 31 March 2005 the cumulative priority profit share due to both GPs was £10,080,594 of which £9,865,094 had been drawn down. The partnership agreement provides that on termination of the partnership, if insufficient profits have been earned by the fund to provide the GP with sufficient profits to cover its drawings, that the outstanding drawings shall be waived by the partnership.

Both funds have carried interest partners (CIP), MVM (CIP) Limited and MVM (CIP) (2) Limited, each entitled to a carrier interest of 20 per cent of the profits of the partnership, once investors have received back their investment and a return thereon. The CIPs are wholly owned subsidiaries of MVM Limited.

Separately, the MRC is entitled to a further five per cent carried interest of the profits of the partnership.

In the year to 31 March 2005 MVM Limited received management fees from MVM (GPs) of £2,213,990 (2004 = £2,110,001).

Joint Ventures

Hammersmith Imanet Limited

The MRC holds 25 per cent of the ordinary shares of the company whose capital and reserves were valued at £1,012,549 at 31 December 2004. The profit and loss account for the period then ended recorded a profit of £109,729 (2003/04 = £98,013 loss). This joint venture with Amersham plc contains a number of agreements on scanning services and a research award.

Scanning services: Hammersmith Imanet Limited provides scanning services to the MRC. In consideration for this service the MRC agrees to pay £2,232,500 (including VAT) per year for a contract period from February 2001 to December 2005. During the year to 31 March 2005 this amounted to £2,232,500 (2003/04 = £2,232,500).

Research award: The MRC approved an award as a special contribution. This was a cash limited award of £1m per year from February 2001 to December 2005. During the year to 31 March 2005 this amounted to £1,000,000 (2003/04 = £1,000,000).

The investment in Hammersmith Imanet Limited is shown at cost (the net value of assets transferred after deduction of cash proceeds), revalued to reflect the MRC's share of the company's net assets at 31 March 2005. The MRC's share of Hammersmith Imanet Limited's results has not been included in the accounts in accordance with FRS9 on the grounds of materiality.

Other investments

Description of holding	Number of shares held	Class held (%)	Purchase price (£)	Market value at 31 March 2005 £000
Quoted				
Biofocus plc	266,307	1.64	-	256
Cambridge Antibody Technology plc	660,000	1.28	100	4,364
M L Laboratories plc	204,190	0.09	-	40
Natus Medical Inc	7,066	0.04	-	30
Sangamo Biosciences Inc	165,255	0.66	-	351
Amylin Pharmaceuticals Inc	20,000 (warrants)	-	-	-
Vernalis plc	310,392	0.22	-	216
Ardana Ltd	416,460	0.75	-	506
				5,763
Private unquoted				
ASM Scientific Ltd	27,000			
Avidis S.A.	594			
D-Gen Ltd	13,162			
Domantis Ltd	2,500,000			
Iclectus Ltd	6,400			
Oxxon Therapeutics Ltd	10,332			
Senexis Ltd	10			
TopoTargets A/S	9,493			

At the close of business on 31 March 2005 the price per share of MRC's shareholdings listed on the London stock exchange, the AIM and the Nasdaq were as follows:

Ardana Ltd	121.5p
Biofocus plc	96p
Cambridge Antibody Technology plc	661p
M L Laboratories plc	19.75p
Vernalis plc	69.5p
Natus Medical Inc*	$8.17
Sangamo Biosciences Inc*	$4.08

* *The share prices of the two listed US companies, were converted at a rate of US $1.9182 = £1.00*

These companies represent the MRC's interest in enterprises engaged in the commercial development of MRC inventions and know-how. These equity positions were received in return for company access to MRC intellectual property. The MRC also has the option to purchase shares in Amylin Pharmaceuticals Inc at any time up to 8 May 2007.

18. Stock

	2004/05 £000	2003/04 £000
Consumable stores and livestock	2,543	2,357

19. Debtors: amounts falling due within one year

	2004/05		2003/04	
	£000	£000	£000	£000
Trade debtors	8,520		5,989	
Less provision for bad debts	(308)	8,212	(277)	5,712
Other debtors		2,944		3,132
Accrued income		17,576		10,484
Prepayments		4,793		5,115
		33,525		24,443

Intra-government balances

During the year, the MRC had debtor balances with other government bodies totalling £2,006k comprising the following: Government Agencies: £1,839k, Local Authorities: £58k, NHS Trusts and Hospitals: £109k.

20. Creditors: amounts falling due within one year

	2004/05	2003/04
	£000	£000
Trade creditors	11,714	2,188
Accruals	26,993	20,450
Taxation and social security	3,360	3,840
Income received in advance	7,752	5,059
Others	1,965	1,831
	51,784	33,368

Intra-government balances

During the year, the MRC had creditor balances with other government bodies totalling £79k.

21. Provisions for liabilities and charges

	Early retirement compensation scheme	Redundancy costs	Other costs	Total provisions
	£000	£000	£000	£000
At 1 April 2004	7,574	-	55	7,629
Amount provided in year	1,794	1,930	83	3,807
Unwinding of discount	241	-	-	241
Amount expended in year	(2,829)	-	(55)	(2,884)
Balance at 31 March 2005	6,780*	1,930	83	8,793

* *This figure represents the MRC's liability for annual compensation payments up to the year 2018.*

Early retirement compensation scheme

There are two categories of early retirement: compulsory and flexible. Both are applicable to all members of staff but different terms apply depending on whether the staff member is under or over age 50.

Aged 50 or over

Annual compensation payments are made, equivalent to enhanced pension benefits, from the date of early retirement to normal retirement date. In the case of compulsory retirement only, there is also a lump sum compensation payment of up to six months salary.

Aged under 50

Compensation takes the form of a lump sum payment based on age, length of service, and final salary; payment levels are higher in the case of compulsory retirement.

Methods of early retirement

Compulsory retirement is imposed where a redundancy situation is identified following either a management review of support services or quinquennial peer review of the science, and redeployment to other MRC work is not possible.

Flexible early retirement is voluntary and is available at the invitation of management on grounds of limited efficiency or structure.

Redundancy costs

A provision has been made during the year for the closure of two research units.

Other costs

These include legal and estate obligations, £43k relating to an employee compensation claim and £40k for a backdated rates claim at one research unit.

22. Capital and reserves

	Deferred grant-in-aid	Revaluation reserve	Capital land reserve	Intellectual property reserve	Donated Asset Reserve	Pension reserve	General reserve	Total government funds
	£000	£000	£000	£000	£000	£000	£000	£000
At 1 April 2004	135,538	63,429	6,059	84,740	-	54,455	38,955	383,176
Capital grant-in-aid and other capital funding received	28,464	-	-	-	538	-	-	29,002
Released to income and expenditure account	(14,210)	-	-	-	(63)	-	-	(14,273)
Additions during year	-	506	-	25,774	-	-	-	26,280
Revaluation during year	-	5,582	-	10,252	-	-	-	15,834
Actuarial gain/(loss) in the pension screen	-	-	-	-	-	(39,458)	-	(39,458)
Transfer to income and expenditure account depreciation	-	(3,640)	-	(10,511)	-	-	14,151	-
Transfer to income and expenditure account disposals	-	*(659)	*(163)	-	-	-	822	-
Transfer from income and expenditure account - pensions	-	-	-	-	-	7,233	(7,233)	-
Deficit for the year	-	-	-	-	-	-	(23,200)	(23,200)
Reversal of notional cost of capital	-	-	-	-	-	-	10,562	10,562
Balance at 31 March 2005	149,792	65,218	5,896	110,255	475	22,230	34,057	387,923

* *In respect of the revalued element of disposed tangible fixed assets and investments in the year.*

23. Reconciliation of the operating (deficit)/surplus to net cash inflow from operating activities

	2004/05 £000	2003/04 £000
Operating (deficit)/surplus	(22,550)	14,149
Depreciation charge	16,954	18,179
Amortisation charge	10,511	6,915
Impairment charge	-	5,719
Other non-cash items – FRS17 pension costs	12,990	9,862
Unwinding of discount provisions	(241)	(246)
Transfer from deferred grant-in-aid account	(14,273)	(21,729)
Increase/(decrease) in provision for liabilities and charges	1,164	(118)
(Increase)/decrease in stocks	(177)	499
(Increase)/decrease in debtors	(9,082)	657
Increase/(decrease) in creditors	18,416	(24,144)
Net cash inflow from operating activities	13,712	9,743

24. Reconciliation of movement in cash to movement in net funds

	2004/05 £000	2003/04 £000
Net funds at 1 April	44,819	35,008
Increase in cash	13,747	9,811
Balance at 31 March	58,566	44,819

Balance includes £41,552,000 (2003/04 = £28,604,000) of Commercial Fund deposits.

25. Contingent liabilities

There were no contingent liabilities this year.

26. Commitments

Capital

The MRC had estimated future commitments to capital expenditure, which had been contracted but not provided for at the balance sheet date of £31,823,000 (£17,980,000 at 31 March 2004).

Research awards

Forward commitments on research awards to higher education institutes:

	£000
2005-2006	122,800
2006-2007	106,400
2007-2008	83,000

27. Related party transactions

The MRC is a non-departmental public body sponsored by the DTI. For the purposes of *Financial Reporting Standard 8*, the DTI is regarded as a related party. During the year, the MRC has had various material transactions with the DTI and other bodies for which the DTI is regarded as the parent department; namely the Economic and Social Research Council, the Engineering and Physical Sciences Research Council and the Biotechnology and Biological Sciences Research Council.

Council members act as Trustees for two registered charities collectively known as the MRC Private Funds. The Private Funds are administrated by the MRC, and therefore regarded as a related party. During the year there were material transactions between the MRC and the Private Funds. This related to income tax being reclaimed from the Inland Revenue (Charities Division) in respect of royalty income (commercial fund), banked in the Private Funds bank account and paid over to the MRC. The total amount banked on behalf of the commercial fund and paid over to MRC in 2004/05 was £275.9k. The MRC also provided free resources to the charity in respect of administration, to the value of £18.8k.

See note 17 for transactions with subsidiary and joint venture undertakings. During the year, the following material transactions with the MRC's Council, board and committee members took place in respect of awards funded by the MRC.

Name	Number of awards	Value (£)
Professor A M Carr	1	776,099
Professor B J Everitt	1	60,244
Professor B K Park	1	313,110
Professors B Williams/P Burton/P Elliott/R Collins	1	2,813,824
Professor C Pusey	3	446,929
Professor D Leach	1	1,049,541
Professor E Bullmore	2	2,970,636
Professor E Liew	1	1,519,086
Professor E Y Jones	3	1,214,660
Professor F Gotch	1	700,008
Professor G Dunn	1	265,152
Professor G Humphreys	2	735,884
Professor G Thornicroft	1	266,223
Professor H Sewell	1	12,753
Professor I N Ferrier	2	458,757
Professor J Mottram	1	695,336
Professor J Scott	1	201,924
Professor J Thornton	1	1,209,668
Professor M B Pepys	1	1,800,016
Professor M Fitzgerald	1	1,086,101
Professor M J O Wakelam	1	429,912

Name	Number of awards	Value (£)
Professor N Rothwell	1	143,504
Professor P J Harrison	2	614,948
Professor R Grencis	1	305,987
Professor T Wykes	1	181,020
Professors E Bullmore/G Dunn/T Wykes	1	2,078,248
Professor Y Mahida	1	12,753
Professor Z I Bashir	1	1,305,639

None of the above were involved in the approval of these awards. In addition, the MRC made the following aggregate awards in respect of MRC funded awards to institutions where the MRC's Council, board and committee members are also senior members of staff.

Related party	Institution	Number of awards	Aggregate amount (£)
Professor J Scott Professor G Thornicroft Professor T Wykes	Institute of Psychiatry	10	7,452,004
Professor S L Johnston Professor M Dallman	Imperial College of Science Technology & Medicine	12	3,155,503
Professor M Newell Professor C Dezateux	Institute of Child Health (London)	4	836,378
Professor S Amiel Professor M Yianneskis	King's College London	2	199,820
Professor P Garner	Liverpool School of Tropical Medicine	2	844,126
Professor D Elbourne Professor H M Dockrell	London School of Hygiene and Tropical Medicine	4	1,235,787
Professor G Richardson	Queen Mary and Westfield College	3	1,223,552
Professor T K Attwood Professor G Dunn Professor N Rothwell Professor R Grencis Professor A J Silman Professor S G Oliver Professor K Luker Professor R A North Professor C M Kielty Professor H Waterman Dr S Hubbard	University of Manchester	14	8,769,704

Related party	Institution	Number of awards	Aggregate amount (£)
Professor A Dolphin Professor M Fitzgerald Dr A Gibb Dr A J Bain	University College London	17	10,282,554
Dr K Cheng Professor I C M MacLennan Professor M J O Wakelam Professor E J Jenkinson Professor L J Piddock Professor G Humphreys Professor L Macaskie Professor L S Young	University of Birmingham	13	6,026,540
Professor R M Denton Dr J Brown Professor G Davey-Smith Professor J M Tavare Professor Z I Bashir Professor M J Miles Professor D Sharp Professor T Peters	University of Bristol	7	6,450,535
Professor B J Everitt Professor R Patterson Professor E Bullmore Dr S Efstathiou Professor A Cooke Professor S Bray	University of Cambridge	29	13,158,041
Dr C MacKintosh Dr M A J Chaplain Professor J Belch Professor A Burchell Professor G J Barton	University of Dundee	5	1,508,483
Professor D Leach Professor K A A Fox Professor I R Whittle	University of Edinburgh	16	10,659,312
Professor A Dominiczak Professor R M Elliot Faulty Professor E Liew Professor J Mottram Dr J M Cooper	University of Glasgow	13	6,581,497

Related party	Institution	Number of awards	Aggregate amount (£)
Professor N M Hooper Professor M R Boyett Dr J Colyer	University of Leeds	2	254,149
Professor P Burton Professor R C Trembath Professor B Williams Professor S Nahorski	University of Leicester	2	437,728
Professor O Petersen Professor B K Park Professor A Jacoby	University of Liverpool	6	2,123,040
Professor I N Ferrier Professor A Derrington Professor C Donaldson Professor H Calvert	University of Newcastle-upon-Tyne	4	1,358,762
Professor Y Mahida Professor H Sewell	University of Nottingham	11	6,808,396
Professor R Thakker Dr R F Mott Professor K E Davies Professor E Sim Professor L Cardon Professor M McCarthy Professor P J Harrison Professor E Y Jones Professor A Hill Professor J Hodgkin Professor R Collins Professor F Powrie Professor R Phillips Professor M Brady	University of Oxford	29	16,567,090
Professor R Eastell Professor J Nicholl Faulty Professor J P Nicholl Professor D Crossman	University of Sheffield	7	2,487,566
Dr P Foldiak	University of St Andrews	2	191,100
Professor P Jeggo Professor A M Carr Professor J Cohen	University of Sussex	7	3,671,356

Related party	Institution	Number of awards	Aggregate amount (£)
Professor P Morgan	University of Wales College of Medicine	2	1,001,424
Dr H Hearnshaw	University of Warwick	3	790,896
Professor N Cullum Professor E Roman	University of York	3	1,609,710

28. Financial instruments

FRS13, *Derivatives and Other Financial Instruments*, requires disclosure of the role which financial instruments have had during the period in creating or changing the risks a body faces in undertaking its activities. Because of the largely non-trading nature of its activities and the way it is financed, the MRC is not exposed to the degree of financial risk faced by businesses. Moreover, financial instruments play a much more limited role in creating or changing risk than would be typical of the listed companies to which FRS13 mainly applies. The MRC has limited powers to borrow or invest funds; financial assets and liabilities are generated by day-to-day operational activities and are not held to change the risks facing the MRC in undertaking its activities.

Liquidity risk

The MRC's net revenue resource requirements are largely funded by the grant-in-aid from its sponsor department. The capital expenditure is also financed through the grant-in-aid. The MRC is therefore not exposed to significant liquidity risks.

Interest rate risk

The MRC is not exposed to any interest rate risk.

Foreign currency risk

The MRC maintains US dollar and Euro bank accounts in order to deal with day-to-day transactions. There is a risk attached to holding foreign currency denominations but this is not considered to be material.

The MRC also holds certain balances in overseas bank accounts to help manage day-to-day business transactions of its overseas operations. At 31 March 2005, the average monthly float levels were £700,000 (2003/04 = £600,000).

29. Post balance sheet events

There have been no events since the end of the financial year which would affect the understanding of the Accounts.

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