Contents

2 Foreword
4 Introduction
6 Strategic objectives
7 Overview of research priorities
12 First-rate people
14 High-quality research
16 Partnerships
18 Research into practice
20 Commercial exploitation
22 Engaging the public
24 Leadership in research governance
26 Effective organisation
28 Financial context
Foreword from the Chairman and the Chief Executive

This strategic plan, our first in the twenty-first century, comes at a particularly exciting time for medical research. In 2003 there were world-wide celebrations of the fiftieth anniversary of the identification of the structure of DNA by MRC-funded scientists James Watson and Francis Crick. The sequencing of the human genome in 2002 and work on the identification of the genes that cause specific diseases are in direct line of descent from their achievement. And in a few years’ time, we can expect to see this ongoing work yield real improvements in the prevention and treatment of disease.

Much of the work that we propose in the following pages would not have been possible without Watson and Crick’s momentous discovery in 1953. Our new plans also build on more recent MRC achievements, particularly those that have occurred since our last strategic plan was published in 1999. These are listed in each year’s Annual Report and include two Nobel Prize-winning examples: the work of Sir John Sulston and Dr Sydney Brenner investigating genetic regulation of organ development and programmed cell death in the nematode worm, and Sir Peter Mansfield’s pioneering work on magnetic resonance imaging.

Another key achievement has been the development of the UK Biobank, which will be the world’s largest population-data resource for the study of how genes, the environment and lifestyle interact to influence health. This long-term initiative is a collaboration between the MRC, the Wellcome Trust and the Department of Health. It will gather genetic data, medical records and lifestyle information from 500,000 volunteers between 45 and 69 years old, with the ultimate aim of improving diagnostic tools, prevention strategies and treatments for common serious diseases such as diabetes, heart disease and cancer.

The MRC has also played a leading role in the development of the UK Stem Cell Initiative involving the MRC, the Department of Health, the Human Fertilisation and Embryology Authority, the Medicines and Healthcare Products Regulatory Agency, and other Research Councils and medical charities. In 2002 we led a cross-Research Council bid, requesting additional funds for stem cell research from Government. This resulted in £40m being provided across the Research Councils to take forward the UK Stem Cell Initiative. A key aspect of the initiative has been the setting-up of a national Stem Cell Bank for characterising and storing adult, fetal and embryonic stem cell lines, and making them available to academic and industrial researchers in the UK and abroad. Funded jointly by the MRC and the Biotechnology and Biological Sciences Research Council, the Bank is housed at the National Institute for Biological Standards and Control.
In 2000 we launched our affiliated company, MRC Technology, which has increased our capability for translating MRC-funded scientific discoveries into commercial products and technologies with clear healthcare benefits. The MRC’s income from exploitation of intellectual property has risen from £1.5m in 1997/98 to £15.1m in 2002/03.

Shortly before this strategic plan went to press, the Government announced the creation of the UK Clinical Research Collaboration (UKCRC). This innovative partnership will bring together the NHS, medical charities, industry and the MRC to speed up the development of new treatments, so that more patients can benefit more quickly from the latest scientific advances. Funds have already been agreed for the underpinning of this accelerated research in the NHS and we are developing plans for the MRC’s participation, something that will be of key importance in the years ahead.

The UKCRC will initially focus on the more vulnerable groups in our society. It will target diseases which are more common in later life – Alzheimer’s, stroke and diabetes – along with mental health and the need to improve the facilities for research into treatments for children. The diseases that have been highlighted fit very well with the health priorities that we have highlighted in this strategic plan (see page 7). All of them have complex causes that require a range of research approaches if they are to be tackled effectively.

A public organisation such as the MRC must continually evolve to improve its effectiveness and its responsiveness to the needs and interests of the scientific community. In early 2004 we launched major changes to our grants system following extensive consultation with universities active in medical research. These changes are designed to streamline the number of schemes, while providing more flexibility for applicants in terms of size and length of grants, and increasing support for researchers beginning their careers. We have also restructured our research boards, giving greater prominence to clinical research and introduced new mechanisms for developing strategy which will draw in contributions from a wider cross-section of the community. We look forward to a period of consolidation of these new arrangements and to continuing scientific productivity.
Introduction

The Medical Research Council (MRC) is the UK’s largest public funder of biomedical research, funded by the UK taxpayer. Our mission is to encourage and support high-quality research with the aim of improving human health. To do this effectively, we must train and develop skilled researchers, and ensure that the knowledge that we gain through our research is translated into improved quality of life and economic competitiveness for the UK. In all our activities, we increasingly promote dialogue with the public in ways that enable them to have a real say in the MRC’s work.

During 2003, the MRC published *A Vision for the Future*, following wide consultation with scientists, the public, Government and industry. Our vision takes stock of current research knowledge, and activities such as government Foresight exercises, and maps out some of the scientific and policy challenges that the MRC faces in the knowledge-based economy of the

In all our activities, we increasingly promote dialogue with the public in ways that enable them to have a real say in the MRC’s work.
future. This strategic plan builds on our vision and in particular illustrates how the MRC will apply key policies when taking forward our strategic objectives. It sets out our research priorities, and other objectives and policies, and is aimed at every audience that has an interest in the work of the MRC.

The MRC was founded in 1913 and is one of the foremost medical research organisations in the world. Throughout its history, MRC scientists have been responsible for many ground-breaking discoveries that have changed the face of modern medicine. People all over the world have benefited, and will continue to benefit, from these pioneering achievements. Since 2002 we have been a member of Research Councils UK (RCUK) – a strategic partnership that champions science, engineering and technology throughout the UK. Through RCUK, the Research Councils (RCs) work together to create a common framework for research, training and knowledge transfer, with the aim of supporting the country’s most innovative scientists and delivering the best investment for society.

The MRC strives for excellence in all its scientific endeavours, while responding to the Government’s strategic needs and forging valuable partnerships with other funders and stakeholders. In ethics and research governance, we aim for the highest possible standards whilst ensuring that regulatory requirements are set at a level that genuinely promotes best practice.

MRC key policies*
- Molecules to people
- Tailoring financial support to scientific and health needs
- Working for the public good
- Building on UK strengths
- Taking a global perspective across science and health
- Encouraging interdisciplinary approaches

* From A Vision for the Future, MRC 2003

Throughout its history, MRC scientists have been responsible for many ground-breaking discoveries that have changed the face of modern medicine.

<table>
<thead>
<tr>
<th>Major MRC achievements</th>
</tr>
</thead>
<tbody>
<tr>
<td>1916</td>
</tr>
<tr>
<td>1933</td>
</tr>
<tr>
<td>1953</td>
</tr>
<tr>
<td>1956</td>
</tr>
<tr>
<td>1973</td>
</tr>
<tr>
<td>1975</td>
</tr>
<tr>
<td>1991</td>
</tr>
<tr>
<td>1998</td>
</tr>
<tr>
<td>2001</td>
</tr>
<tr>
<td>2002</td>
</tr>
</tbody>
</table>
The MRC will continue to:

- Invest in high-quality research relating to human health.
- Attract and train first-rate people to meet scientific and broader UK labour needs.
- Fund partnerships and promote collaboration.
- Promote the translation of research into practice, including disseminating information, providing scientific advice and facilitating implementation within health service policy and practice.
- Encourage commercial exploitation for the benefit of national health and wealth.
- Engage the public in medical research, including dialogue about its implications for society and health.
- Provide leadership in the governance of research and operate according to rigorous principles.
- Promote good practice, and strive for improvements in effective organisation, including appropriate methods for the evaluation of all aspects of performance.

The MRC strives for excellence in all its scientific endeavours, while responding to the Government’s strategic needs and forging valuable partnerships with other funders and stakeholders.
Health priorities: An integrative approach

During consultations in 2003 for the MRC’s Vision for the Future, we identified a number of health priorities in which new research is especially needed and where we can expect to have an impact, both socially and economically, in the years ahead. These range from well-known and long-standing causes of death and debilitation such as cancer and heart disease, to problems that are on the increase, such as obesity, diabetes and respiratory problems including asthma. Infectious diseases continue to be a challenge, for example with the emergence of problems such as severe acute respiratory syndrome (SARS) and the ability of well-known viruses such as influenza to emerge in newly dangerous forms.

To tackle problems in these priority areas, we need to develop approaches at many levels: molecules, cells and tissues, animal models, whole organs and systems, individuals and populations. Now that the human genome has been sequenced and genes are being identified, there are exciting opportunities for multi-disciplinary approaches. Many diseases have complex causes involving the interaction between genes and environmental factors, including, for example, exposure to chemicals, physical effects such as ultra-violet radiation, socio-economic status and lifestyle factors including diet, smoking and use of alcohol. An ‘integrative’ approach will be key to understanding such interactions and is an important feature of medical research in the early twenty-first century. Some of our current initiatives and new plans are summarised below, to provide a snapshot of MRC research rather than a full survey.

Post-genomics and proteomics

The MRC will continue to make a major contribution to the joint programme with other RCs. As genes are identified, the focus is moving towards analysing the proteins that they produce and how these work in health and disease. We will continue to expand capacity for this type of research. New techniques are being developed to study the structures of individual proteins and how different protein molecules interact in space and time. Increasingly, we will be able to understand complex biological

---

Health priorities

- Cancer
- Cardiovascular disease
- Stroke
- Mental health and well-being
- Infectious disease
- Respiratory disease
- Obesity and diabetes
- The ageing population
- Clinical investigation
- Health inequalities

---

The biomedical research cycle and the challenges ahead

The biomedical research cycle

- Individual
- Animal
- Organ
- Cell
- Genome
- Environment
- Understanding health and disease
  - Prevention
  - Diagnosis
  - Treatment

Challenges ahead

- Science and policy
  - Holistic approach
  - New diagnostics
  - Translating results into clinical practice
  - Multi-disciplinary working
  - Forging partnerships
  - Training and retaining researchers
  - Engaging the public and patients
  - Building capacity in key areas, eg, public health research
mechanisms as we combine this work with comparative studies in animals and clinical research with humans. The complexity of the systems we will be studying also requires corresponding development of informatics as a discipline. The MRC will play a role in this together with other funders. The European Bioinformatics Institute in Cambridge, which we fund along with other European countries through the European Molecular Biology Laboratory, will provide an important focus here. And in the years to come, a further dimension will be added by population studies such as the UK Biobank. Using this resource, we will begin to build up a picture of how genes interact with other factors in our environment to influence health.

Clinical and translational research
While the basic science that underpins clinical research remains essential, we need to enhance both clinical research and the translation of its results into health policy and practice. The needs we have identified show that our thinking is very much in tune with that of the Academy of Medical Sciences, the Department of Trade and Industry Biosciences Innovation and Growth Team, and others who have recently provided advice to Government. To promote evidence-based medicine and healthcare, we will work closely with other research funders, industry and healthcare providers to establish the UKCRC. This clinical research collaboration will:

- Build on existing UK strengths, in particular the infrastructure of the NHS.
• Target new research investment in a way that will maximise impact on healthcare.
• Strengthen clinical research capacity through enhanced training programmes.
• Integrate existing activities with the new initiative for a coherent, effective national effort.
• Work with industry to deliver health improvements that have associated economic benefits.
• Work with patients and families to deliver high-quality clinical research.

The setting up of the UKCRC provides a framework and an added impetus for the MRC to develop and sustain the renewed commitment to clinical research that was foreseen in our vision published in 2003. We have set up a Clinical Research Advisory Group to help drive forward our role in this important partnership.

Brain sciences
Mental health and neurological disease are prime examples of areas in which the collaborative approach must be applied. Developments in the brain sciences, especially in neuro-imaging, are opening important new windows of scientific opportunity. High-resolution structural imaging of the brain in people with brain disease and mental illness, coupled with functional neuro-imaging, which gives information about dynamic brain activity, will provide the basis for major advances in our understanding of brain function in the normal and disordered system. The MRC already has a commitment to build research capacity and develop shared resources in this field, as part of a cross-Council research programme. Brain disease is also an area of high cost to the health service and one in which the integration of basic and clinical research, from cellular to systems levels, is likely to be particularly fruitful. An MRC call for proposals in 2003 highlighted two key themes: ‘Pathfinders’, aimed at high-risk, high pay-off projects and ‘Trial Platforms’, aimed at capacity building. We received a very strong response that included many excellent proposals, often in new and innovative areas, and covering a wide range of medical conditions. Those we funded included a number of applications from young investigators and studies that will bring together scientists from different disciplines. We will be making a second call in mid-2004 for awards for 2005, as well as integrating these existing initiatives into the new clinical research collaboration.
Infectious diseases
AIDS, malaria and tuberculosis will continue to have a major health impact worldwide. A variety of factors, including environmental, socio-economic and cultural, influence their epidemiology and may help the spread of infection. Growing antibiotic resistance is another threat to the control of infectious diseases. But at the same time, new opportunities now exist for tackling them. Genetic information about disease-causing organisms can be used to identify new drug targets, and advances in immunology will contribute to both vaccine research and a better understanding of disease mechanisms and other potential means of control. The MRC will encourage multi-disciplinary approaches and will maintain a strong presence in international health issues, particularly through its research units in The Gambia and Uganda and its concordat with the Department for International Development (DFID).

Stem cell research
The MRC is taking the lead in developing and coordinating the UK stem cell research initiative, working with other funding bodies, including other RCs. This joint programme aims to build on recent technological advances to foster basic and applied research on stem cells, particularly human stem cells, with the longer-term aim of developing new therapies for a range of diseases and traumatic injuries. The achievements of the last two years will provide a solid base for this work for many years to come. A UK Stem Cell Bank has been established, jointly funded by the MRC and the Biotechnology and Biological Sciences Research Council (BBSRC). The Bank will begin to receive deposits of cell lines in summer 2004, and we have established a number of related research and training programmes.

The MRC’s leadership of stem cell science extends far beyond research...
funding. For example, in order to secure public confidence, the Stem Cell Bank has special governance arrangements, which are overseen by a high-level committee and underpinned by codes of practice. Development of the governance and codes of practice has involved extensive consultations with the public and other stakeholders. These include clinics that offer *in vitro* fertilisation (IVF), with whom we will be working to upgrade laboratory facilities for the handling of clinical grade stem cell lines.

At a national level, the UK Funders Coordinating Committee has established a communications coalition for stem cell research. The coalition will continue to develop public awareness strategies, including those targeted at parliamentary audiences. As part of this work, it will undertake periodic surveys of public opinion in the UK and be responsive to them.

On the international scene, the UK is widely seen as a leader in stem cell science. We will build on the work we have already done to establish and develop the International Stem Cell Forum which facilitates discussion of global research policy in this field.

**e-Science**

The MRC is a participant in the joint RC collaboration to promote e-Science, which is led by the Engineering and Physical Sciences Research Council. The initiative was set up following the 2000 Spending Review (SR2000) to address the need for UK researchers to be able to process, store and visualise increasingly large collections of scientific data. The scale of the challenge is such that it requires the involvement of multiple stakeholders in a consortium-based approach. For large datasets to be managed effectively, they will require enhanced IT resources and high-performance interfaces linking researchers around the world in a new virtual framework, referred to as ‘the Grid’.

The MRC’s investments within the e-Science programme include seven pilot projects, initiated through SR2000 funding, focusing on the key priority areas of clinical research, cancer, brain science, post-genomics, and ageing. Four of these pilots are jointly funded with other RCs. We will use our SR2002 funds to address a perceived gap area, by establishing up to five pilot projects to manage data derived from clinical trials and longitudinal studies. Key challenges will include linking research data with patient health records and networking the pilots across the UK and with comparable international efforts. This is a multi-disciplinary programme that will link up with other MRC activities including the initiative on data sharing and preservation (see page 24) and clinical research programmes. It is likely to become increasingly important as underpinning to a variety of other programmes.
First-rate people

Central to our mission
Skilled and talented people are undoubtedly the most important resource for the delivery of high-quality science and its translation into benefits for the public’s health and the economy. This is why training and career development are central to our Mission. The MRC supports nearly 4,000 research staff, 1,200 PhD students and 450 fellows at different levels of seniority in UK universities. In addition, we directly employ more than 3,000 MRC research staff in our own Units and Institutes. We regularly review and update the scientific career structure for our own staff, and are committed to implementing the recommendations of the 2002 Roberts Review on training in science.

Training and development
During the period of this strategic plan, the MRC will be working closely with its wide range of partners, particularly universities, medical schools, the NHS, other RCs and other funders of training. This cooperative approach helps to attract the brightest young minds into science and to break down barriers between disciplines. We will enhance the attractiveness and visibility of studentships through continued investment and through the implementation of the Roberts Review recommendations to promote scientific career and training opportunities.

Investing in training clinical researchers
We propose to increase investment in research training for medical staff and those in professions allied to medicine, as part of a wider initiative to make careers in clinical research more attractive, and so enhance clinical research capacity in the UK. As part of the same initiative, we are planning to appoint leaders and champions for clinical research and its translation into health policy and practice, and to develop new mixes of skills and career paths to meet the challenges of the twenty-first century.
Developing the next generation
A new award scheme for ‘New Investigators’ in universities will provide salary and grant-funding for scientists at the critical early career stage. This scheme is being piloted in 2004, and if successful will be extended in subsequent years.

Good employment practice: Investing in people
The principles we apply to training and development of extramural researchers will apply equally to the MRC’s own workforce. We are committed to developing our human resources strategy to improve the MRC’s performance and to benefit our staff, and also to working in partnership with our recognised trade unions to achieve this. We are increasing our focus on performance management and providing career development opportunities for first-rate research talent, following the implementation of the EU Directive on fixed-term contracts. We are implementing a new salary structure which provides greater flexibility to reward top performers.

New career development programmes – designed in partnership with university employers and others – will target groups with specific needs and where there are skills shortages, for example, technicians and other staff who work with animals. There will be further developmental opportunities for a range of staff through interchanges with or secondment to other RCs, the Department of Health (DoH), the Office of Science & Technology (OST) and other bodies.

We are also developing the concept of the ‘MRC corporate university’ to ensure that all our training and development programmes form a coherent whole that delivers the knowledge, skills and competencies required across a range of disciplines. This approach will help both the organisation and the individuals within it to achieve their short- and long-term goals. In addition, following the MRC Council’s endorsement of our Human Resources strategic plan and with full support from the trade unions, the MRC is pursuing the Investors in People accreditation to support our drive for the highest standards in all aspects of employee relations and to promote implementation of best practice throughout the organisation.

The MRC supports nearly 4,000 researchers, 1,200 PhD students and 450 fellows at different levels of seniority in UK universities

Equal opportunities
The MRC is committed to promoting equality of opportunity for all employees including greater involvement and retention of women in science and in its governance. We will continue to test our business practices for any possible bias based on gender, ethnicity or disability. We will also actively seek to develop and amend our working practices and cultures to better accommodate issues of individual diversity and work/life balance throughout the organisation.
High-quality research

Strategy development
The MRC is introducing new structures for the development and implementation of strategy, including a new Subcommittee on Strategy, Corporate Policy and Evaluation. The new arrangements are designed to increase the sharing and ownership of strategy across all our stakeholders in order to make the process more effective. There will be greater delegation so that our peer-review boards and committees will not only assess the scientific quality and strategic merit of applications, but also have budgets from which to implement their decisions. This will lead to greater inclusiveness, faster decision-making and transparency across the organisation.

New grant schemes
The MRC has launched major changes to its grants system, designed to streamline the number of schemes while providing more flexibility for all applicants in terms of size and length of grants, and increasing support for researchers beginning their careers. The increased flexibility of the schemes should also offer greater opportunities for working and funding in partnership with charities, the Health Departments and other RCs.

The changes to our funding schemes are based in part on wide consultation with the community, through a series of roadshow meetings held by the Chief Executive at the major universities active in medical research in late 2003 and early 2004. Some of the alterations to the grants system are also a response to the recommendations of the MRC Monitoring and Evaluation Steering Group review of the Co-Operative Group Grant scheme, published in December 2003. Both of these consultation exercises have influenced MRC thinking. While we are as committed as ever to funding top-quality research and to supporting world-class centres of scientific excellence, we recognise that we need to continue to build closer and more open relationships with the scientific community, both in universities and within our Units and Institutes. The success of the new schemes will be subject to evaluation which will include continuing consultations with the community.

Intramural support
In addition to providing grants to universities, the MRC undertakes research in its own Institutes and Units, most of which operate in partnership with universities. Our ability to offer scientists careers that are entirely research-based, without teaching or substantial administrative demands, helps us to recruit and retain individuals of the highest calibre. Such intramural support has also enabled us to exploit MRC-funded inventions through our technology transfer company, MRC Technology, as we hold the intellectual property rights to all research undertaken by our employees. However, despite these advantages, we believe that intramural support
should be subject to strategic review from time to time, over and above the five-yearly scientific reviews that the MRC conducts for each of its Units and Institutes. During the period of this strategic plan, we will be reviewing the criteria for the setting up and continuation of Units, together with the risks and benefits of the varied forms of partnership with universities that operate for Units, Institutes, and the more recent ‘Centre’ form of support. We are also currently conducting an in-depth review of the future of our largest research establishment, the National Institute for Medical Research (NIMR) at Mill Hill, London. The NIMR Task Force will report on its recommendations in mid-2004.

Intramural support carries with it ownership of assets, including buildings, land and scientific equipment, many of which are shared with university partners to mutual benefit. The MRC has developed a capital investment strategy that will set out how the condition and value of this asset base will be maintained and enhanced, to help MRC intramural research remain at the forefront scientifically.

Other facilities
In addition to sharing its current facilities where appropriate, the MRC’s continued international competitiveness will depend not only on its people, but also on building capacity through research facilities, including sharing these where appropriate. We will play a leading role in the development of the UK Clinical Research Collaboration (UKCRC) together with the NHS, other funders and industry. The Government’s drive to improve research and services in cancer has led to the setting up of a National Cancer Research Network and a National Translational Cancer Research Network under the umbrella of a virtual National Cancer Research Institute comprising the major funders. With our partners, we will build on this success to develop new research in other areas of health priority, and to move it through the development stage to implementation in policy and practice, with commercial exploitation where appropriate. Centres of excellence will be built up to achieve critical mass so that a coherent national effort can be mounted. Our Clinical Trials Unit, General Practice Research Framework, Epidemiology Resource Centre and other existing MRC facilities will integrate with the new initiative and be important elements of the collaboration.
Our commitment to working in partnership informs much of our strategic plan. As the challenges facing medical science have become more complex and multi-disciplinary, the need for organisations to pool resources and expertise becomes increasingly apparent. And very often there is a ‘critical mass’ effect whereby each organisation adds value to the endeavours of its partners. There are many different types of joint working in place, each designed to meet the needs of a jointly agreed initiative whilst respecting the autonomy of individual participants. This will be our approach for developing new partnerships too. Some examples of the breadth of the MRC’s current partnerships are shown below. Many of these are relationships that we will sustain for many years:

- Cross-Council Co-ordinating Committees to ensure complementarity and to avoid duplication in respect of Spending Review initiatives (genomics, e-Science, stem cells, brain science, etc).
- Regular funders’ fora that bring agencies together – from Government, charity, and industry – to discuss research funding opportunities and strategy. For example, on stem cell research, mental health, cancer, cardiovascular disease and ageing.
- Joint funding of research and training programmes with medical charities. For example, the National
Kidney Research Fund, the Multiple Sclerosis Society, the Alzheimer’s Society, the Juvenile Diabetes Research Foundation (International) and Diabetes UK.

• The MRC, the DoH and the Wellcome Trust have pooled resources to set up the UK Biobank project.

• International collaborations with funders in other countries. For example, the trinational clinical trial known as OPTIMA (Options in Management of Retrovirals) in HIV infection, funded jointly by the USA and Canada.

• Joint funding with government departments. For example, the multi-centre Microbicide Development Programme in Africa, funded by the DFID and managed by the MRC Clinical Trials Unit and Imperial College, London; and the joint programme in sexual health with the DoH.

• Scientific workshops such as those on integrative physiology in partnership with the Wellcome Trust.

• Meetings of the Heads of International Research Organisations (HIROs), which are facilitated by the MRC and provide a useful informal forum for the exchange of information and ideas.

• Through RCUK we are taking an active role in shaping the new European Research Council that might deliver the proposed funding stream for basic research in the EU Framework Programme 7 (FP7). We also continue to participate in Framework Programme 6 (FP6) and play a leading role in the development of the European and Developing Countries Clinical Trials Partnership.

• Revision of the long-standing Partnership Agreement with the four UK Health Departments to bring it up to date with devolved structures and modern partnership working.

• Development of new structures and the injection of new investment for the UKCRC, the multi-disciplinary clinical research collaboration, jointly with a range of other funders, universities, Health Departments, the NHS and industry.

• Participation in the Department of Trade and Industry (DTI) Foresight programme with other RCs, other

As the challenges facing medical science have become more complex and multi-disciplinary, the need for organisations to pool resources and expertise becomes increasingly apparent government departments and industry. Current projects focus on cognitive systems, exploiting the electromagnetic spectrum, and the brain and drugs.

• Public and consumer networks, involving charities and voluntary organisations in particular, but also other government departments and bodies.

• Informal contacts and discussions with other funders about best practice.
The evidence base for new developments in medicine and healthcare

The MRC is committed to developing evidence-based medicine and healthcare by translating basic research outcomes into clinical evaluation and ultimately into health policy and practice in the NHS. As described earlier, the MRC will work with other research funders, industry and healthcare providers to develop a new initiative in clinical research in the coming years. This will enable us to make better assessments of the impact of our research and the outcomes for patients. Such considerations will become integral to the research from the outset, and will ensure timely and effective implementation of new policy and practice.

The MRC requires publication and dissemination of research results, targeted at both the scientific and medical community, and at the public. We also encourage the pooling of data from different studies and the conduct of meta-analyses where appropriate. We aim to promote the flow of information from researchers to practitioners and public, and to bring together information from different sources in ways that might yield new insights.

Working with the NHS and central Government

The MRC has renewed and updated its Partnership Agreement with the four Health Departments, which now include the devolved administrations. The aim is to encourage a more interactive form of partnership and so facilitate our common aim of putting research into practice. The new Agreement will also provide a framework for closer joint working.

---

1 The Health Departments in this context refers to the Department of Health, the Scottish Executive Health Department, the Wales Office of Research and Development (National Assembly for Wales) and the Research & Development Office for the Northern Ireland Health and Social Services.
The objectives of the Partnership Agreement are to:

- Promote an understanding of the respective roles of each organisation and establish clear lines of communication between them.
- Ensure coordination in the missions and strategic planning of the organisations, and that their research activities complement one another.
- Ensure that the policies and priorities of the UK Government and devolved administrations are informed by scientific advances and opportunities in biomedical research, and that the Departments’ research needs are understood and addressed by the MRC through its decision-making processes.
- Ensure that the NHS and public health perspectives are understood and taken account of by the MRC in decisions on research funding, and to ensure that the needs of MRC research for NHS support are understood and addressed by the Health Departments.

These objectives will be taken forward through regular meetings of officers and a network of contacts on specific issues, as well as through more formal representation. With funding decisions now being made directly by the MRC’s research boards, and new mechanisms for developing strategy, it will be important for us to ensure, through the Partnership Agreement, that Health Departments’ interests are taken into account at all levels.

Economic and social impact
Recent American and Australian studies of the economic impact of medical research suggest that the health and wealth dividends from investment in research far outweigh the costs of the research. The MRC will work with partner organisations to apply new concepts of both financial and non-financial benefits in the UK context, to help build the evidence base and give a clear picture of the broad-ranging impact of MRC research for the NHS and UK society as a whole.

Expert advice
The MRC provides independent scientific advice to Government and others in a variety of ways. We are responsive to both specific requests and to public opinion in the conduct of topic reviews, recent examples being on autism and diabetes. Many MRC scientists act as government advisors, sit on influential committees, or provide consultancy to pharmaceutical or biotechnology companies. The MRC encourages this as an important component of academic and public life.
Commercial exploitation

**MRC Technology**
We will continue the commercial exploitation of the MRC’s intellectual property rights (IPR) through our affiliated company MRC Technology (MRCT). As well as licensing MRC inventions to industry – primarily biotechnology (including MRC start-ups) and pharmaceutical companies – MRCT runs laboratories at Mill Hill in London and in Edinburgh for collaborative work with industry and the incubation of start-up companies. This promotes a two-way knowledge transfer that goes beyond that which occurs through simple licensing of IPR alone. In order to stimulate company start-ups further, the MRC has created an investment management company, MVM Ltd, which has raised £150m from the private sector for
MRCT’s most significant revenue stream will continue to be from sales of antibody-based therapeutics and these are expected to continue to increase year on year.

two venture capital funds to invest in seed- and early-stage life sciences companies.

The MRC’s total income from commercial exploitation is currently running at around £15m per annum, which is enabling us to expand our knowledge-transfer activities and to plough some of this income back into new research. MRCT’s most significant revenue stream will continue to be from sales of antibody-based therapeutics and these are expected to continue to increase year on year during the period of this strategic plan.

MRCT’s strategic goals for the next few years are to:

● Transfer MRC inventions to industry for the development of new and improved healthcare products and services.
● Foster national wealth creation by nurturing new and existing MRC start-up companies.
● Increase the range of interactions with the pharmaceutical and biotechnology industry.
● Maximise MRC income in the longer term.

In order to take these goals forward, MRCT is in the process of expansion, allowing for a more proactive approach that will include exploring and developing more strategic relationships with outside organisations, including universities, research charities and biotechnology and pharmaceutical companies. Following successful review of a pilot scheme in 2002/03, a Development Gap Fund has been set up, at the level of £1.5m per annum in the first instance, to support translational research and to provide commercial proof-of-concept for breakthrough technologies. These new approaches will enable MRCT to shape a more diversified portfolio of commercial opportunities with an increased ability to establish new ventures on the basis of complementary MRC- and university-owned technologies. This is expected to lead to more effective implementation of the results for health and social benefits, and for enhancing medically related activity in UK industry.

MRCT’s wider activities include participating in the RCUK Knowledge Transfer Group, whose aim is to develop strategies for more effective knowledge transfer between academia and industry in response to the DTI Innovation Report.
Keeping in touch with the public's views

Public engagement is integral to the MRC’s Mission. This means that keeping in touch with public views on major health issues and medical research is vital to our work and fundamental to our communications activities. We will continue to promote dialogue with the public, targeting a wide range of audiences through a variety of approaches. The MRC’s communication strategy for 2002/05 provides a framework for enhancing our communication activities. We will be undertaking a reputation audit to look at the strategy’s impact on public and stakeholder perception since the previous audit in 1999, and before preparing a renewed strategy in 2005.

Our current communication objectives are to:

- Foster better communication between the scientific community and the public.
- Build and improve capacity for communication through partnership working.
- Improve MRC communication with the scientific community.
- Promote the current work of the MRC.
- Promote the achievements of the MRC.

In setting and pursuing these objectives, we recognise that there is always scope to improve our performance in providing information about the MRC, listening to our stakeholders, and being proactive. Regular evaluation of our activities helps us to constantly improve our communication efforts.

Involving the public in decision-making

The MRC will develop and widen the role of its Advisory Group on Public Involvement (previously known as the Consumer Liaison Group), through facilitating more regional activities for the group while giving it greater inclusion in our corporate consultations and strategy-making. Members of the advisory group and others bringing a public perspective are increasingly being appointed to influential MRC committees and working parties involved in developing strategy, planning and implementing clinical trials and other studies involving people. Our advisory group’s activities include commenting on draft corporate publications and patient information leaflets, contributing to the preparation of MRC responses to government consultations, attending board and strategy meetings, and participating in topic reviews, such as those held on autism and chronic fatigue syndrome. Members of the group have also been appointed to the new Subcommittee on Strategy, Corporate Policy, and Evaluation.

Working in partnership

The MRC has undertaken a number of communication initiatives with the other research councils working through RCUK. The British Association for the Advancement of Science Crest Award scheme and the
Genetics Futures project are two examples of how the RCs are together bringing the excitement of science into the classroom.

The Coalition for Medical Progress (CMP), established in February 2003, has now reached the point when it can be expected to have a major impact on public attitudes toward the use of animals in medical research. The MRC is playing a leading role in the development of this umbrella organisation, which comprises a variety of public, private, and charitable bodies engaged in medical research using animals. The CMP aims to raise public awareness about the issues in relation to animals, and by pooling resources its members are able to do this more effectively than by acting alone. Communications activities to promote the CMP messages include a website launched in March 2004, public and parliamentary events, an information pack and a major media programme. The CMP is just one example of how we aim to add value through partnership working in the communications field. Another is the Stem Cell Communication Coalition, comprised of organisations that fund stem cell research. This coalition has already conducted a national opinion survey, produced a public information pack on stem cell science, and worked to influence the EU debate on stem cells.

Our partnership working enables us to keep track of, participate in and learn from other organisations’ communications plans in specific areas. For example, the Genetics Knowledge Parks’ development of well-defined public involvement strategies creates the opportunity for the MRC to play a role that adds value to the initiative. These and other partnership models will be developed to address topical issues as they arise.

Reaching our stakeholders
One of our most effective means of communicating about our work is through the media. A measure of our success is the increase in MRC-related coverage year on year generated through press releases, briefings, interviews and responses to enquiries.

The MRC website will be redeveloped within the next two years for delivery through the new MRC portal. As time goes on, the portal will also be a vehicle for delivery of MRC Units’ websites, and for more imaginative and interactive provision of information to the public and the scientific community.

The MRC’s scientific staff play a major role in our continuing dialogue with the public and we plan to provide new opportunities and incentives to encourage them to participate further. Whether through participating in science festivals, speaking to school children or giving media interviews, we believe our scientists have a great deal to gain by talking openly about their work and listening to the opinions of others. Our priority topics for public communication are kept under regular review to ensure that they reflect our scientific strategy and are responding to public interest. Areas that will remain prominent during the period of this strategic plan include the use of animals in medical research, stem cells, clinical research, genetics and brain sciences. The MRC will be responsive to public interest and opinion, tackling new topics when necessary.
Good research practice

The MRC continues to set standards of good practice in all aspects of medical research, including ethics, patient safety, and the use of animals, personal information and human tissue in medical research. We produce a variety of publications defining and explaining good practice in these and other areas, for use by scientists and other interest groups. Our work to develop and promote good practice encompasses informing and responding to new government initiatives, developing ethical guidance for researchers conducting science in emerging areas such as stem cell research, and keeping in touch with public opinion about ethical issues in medical research.

In view of growing concern about the amount of regulation within which scientists must operate, the MRC will be increasing the resources that it makes available for providing advice and guidance in these areas. We are working with the DoH to codify existing good practice in clinical trials and to support the research community in meeting the requirements of the EU Clinical Trials Directive. As a pilot within this project, a Research Governance Coordinator will work during 2004 with MRC Units and our university partners to share and develop good practice in research governance across all types of biomedical research involving human participants. The aim is to make effective use of existing systems wherever possible. If the approach is successful, consideration may be given to establishing a centre for best practice in research involving humans. This would best be done in partnership with other funders in order to provide a service to as wide a community as possible.

The Centre for Best Practice in Animal Research (CBPAR), which is jointly funded with the BBSRC, is now well established and continues to develop its work and raise the profile of animal welfare issues as part of the wider debate on the use of animals in medical research. In a further phase of its development, the Centre will form the basis of a National Centre for the 3Rs (Replacement with non-animal alternatives, Reduction in the number of animals used, and Refinement of husbandry and procedures to minimise suffering). A wider group of stakeholders can be expected to contribute to the Centre in future and its activities in the 3Rs will expand. CBPAR projects in 2004 include developing and publishing best practice guidelines for the care of primates; coordinating a working group on the welfare of genetically modified mice; and initiatives aimed at animal technicians, such as an annual prize for significant contributions to animal welfare. Taken together with our leading role in the Coalition for Medical Progress, these activities will continue to increase the MRC’s influence in this area.

Making the most of our data

The MRC is the lead partner in a consortium on data standards with
the BBSRC, the Natural Environment Research Council, the Wellcome Trust, the Joint Information Systems Committee and the DTI. The consortium will map the landscape of data standards development and needs in relation to large-scale data sharing in the life sciences. As part of the MRC’s own initiative in data sharing and preservation, we will establish a data-support service for scientists engaged in population-based and clinical studies. In addition, a project involving researchers and the public is exploring issues of consent for data use and data confidentiality. This will provide exemplars of good practice and highlight topics that require further work. Our e-Science initiative is building key middleware that will make multiple data sets interoperable.

Spinning off new organisations
Because of its many years of experience and reputation for high standards, the MRC is well placed to develop new governance arrangements when needed, working in partnership where appropriate. One recent example is the UK Biobank, set up with the Wellcome Trust and the DoH. This complex long-term project has required the development of a detailed Ethics and Governance Framework that has been subject to wide consultation. Another example is the sale to Amersham International of the greater part of the MRC’s Positron Emission Tomography (PET) facility at Hammersmith Hospital, and the establishment of the joint venture company Hammersmith Imanet to run it. Both these examples illustrate the MRC’s role in growing new organisations. A forthcoming example is likely to be the new National Centre for the 3Rs referred to on page 24. We will continue to think imaginatively about what structures are most appropriate for all the major new initiatives that we launch.

Influencing the international scene
The MRC is involved in the governance of a number of international organisations: the European Molecular Biology Conference, the European Molecular Biology Laboratory, the Human Frontier Science Program, the International Agency for Research in Cancer and the European Science Foundation. The UK’s subscriptions to these organisations are channelled through the MRC and we represent the UK on the relevant governing bodies. In this capacity we aim to ensure complementarity between national and international programmes, to promote collaboration and to help achieve value for money.

Through RCUK the MRC will play a role in shaping the governance structures for the EU FP7 that is due to run from 2007 to 2011. Consideration is being given to administering the proposed funds for basic research in FP7 through a European Research Council which would award grants competitively on the basis of peer review.
Effective organisation

The MRC will continue to seek the best in organisational integrity and effectiveness. Our guiding principles will be to observe the highest standards of propriety in managing the MRC’s funds and activities, to be open and accountable for our actions, and to maximise value for money. We will operate efficiently and effectively, delivering the MRC’s service targets while ensuring efficiency gains are achieved. The MRC will be proactive in delivering administrative savings in line with the Gershon and Lyons Reviews, reducing the size of its London-based Head Office and capitalising on investment in information systems to streamline support functions.

RCUK Administration Strategy
The MRC participates fully in the implementation of the RCUK Administration Strategy. Under the Strategy, a programme has been developed to achieve the following by 2007:

- The majority of stakeholder interactions to be electronic, through a single on-line portal.
- Progressive reduction in the number of different business systems, supported by an increasingly seamless and rationalised electronic infrastructure.
- Savings and quality improvements to be derived from enhanced shared service working.

The Strategy recognises that convergence will be evolutionary and that differences between RCs may need to remain where objectively justified.

Integrated information services
The MRC has recently entered into a long-term partnership with the information service provider, LogicaCMG. Working under the name of “Auris”, this partnership will deliver an integrated suite of new information services over the three years of this strategic plan and beyond. These services will address our administrative needs and some scientific information needs. The Auris partnership is innovative in that part of the company’s remuneration will be directly linked to its delivery of business benefits to the MRC. Auris will support our participation in joint RC projects such as the Electronic Records Management System and the Joint Electronic Submission for grant applications.

Risk management
We will continue to operate a robust risk-management policy, advised by our Audit Committee. The framework for this policy includes:

- Bi-annual review by our Executive Board of the MRC’s risk profile (Head Office and Units) and risk-management arrangements in place, supported by local-level work.
- More frequent risk reviews of
business-critical projects by the Executive Board.

- A comprehensive internal audit programme at our Units, Institutes and Head Office, conducted by the Research Councils’ Internal Audit Service.
- ‘Dipstick’ reviews of university and other grant recipients, undertaken with other RCs to provide assurance on the regularity of research-award expenditure.
- Annual review of the evidence supporting the Statement on Internal Control signed by the MRC’s Chief Executive.

Health and safety management is an important component of the MRC’s overall risk management strategy, especially in view of the variety of types of workplace and hazards associated with the conduct of science. The MRC keeps a close eye on new legislation and develops policies for its implementation throughout the organisation. We also undertake regular audits and promote good practice through the development of safety improvement plans. We provide both general and, where necessary, specialised safety training for managers and staff. Current areas of activity include the forthcoming Civil Contingencies Act, ergonomics, and the transport of hazardous materials.

Evaluating performance
Evaluation is an important activity for any organisation that needs to understand how far, and how effectively, it is meeting its goals. Evaluation is also needed to underpin accountability to stakeholders and to inform planning and bidding processes. The MRC has long used peer review as a means of forward evaluation, to review scientific proposals and determine who should receive funds. Increasingly we are developing new methods for evaluating past performance, to demonstrate how science delivers benefits and to inform future funding decisions.

The MRC is taking a leading role in developing performance indicators and was first to take the rotating chairmanship of the RCUK Performance Evaluation Group. The Group’s first report, which set a common framework for evaluation, was approved by RCUK in late 2002 and published in 2003. This framework is a response to the recommendation of the Quinquennial Review of the Grant-Awarding Research Councils (2001) for integration of output and performance indicators with benchmarking, to form a balanced toolkit for management of organisational performance. The next steps for the MRC will include the development of a rolling programme of evaluation projects; continuing to work with the other RCs; forming links with other funders; identifying opportunities for shared evaluation activities; and promoting common standards. In time, these evaluations will address all the MRC’s major strategic objectives.

The MRC’s Monitoring and Evaluation Steering Group is responsible for undertaking reviews of our funding schemes. The Group’s workplan during the coming period includes a review of the Strategic Appointments Scheme and developing ways of monitoring the benefits accruing from the new forms of support being put in place from April 2004.

During the period of this strategic plan we shall also review our approach to managing the performance of staff, with a view to aligning it with the MRC’s overall evaluation strategy.
Financial context

The MRC receives most of its funding from the Science Budget allocated through the OST, which is part of the DTI. In 2004/05 we expect to receive £425m, which will be spent in MRC establishments (Units and Institutes) and universities as shown in Figures 1a and 1b. The estimated distribution among different scientific areas in 2004/05 is shown in Figure 2. Our introduction of more flexible grant schemes requires more sophisticated mechanisms than in the past for the smoothing of financial commitments across financial years. We will be able to take advantage of increased flexibility for carry forward of balances, and where necessary will use the MRC’s Commercial Fund (our income from exploitation of MRC inventions) to help iron out financial fluctuations from year to year. In this way, we aim to maintain greater consistency in the value of the grant awards made in the years covered by this strategic plan than has been possible in past years.

Figure 1a shows the estimated split between different categories of expenditure in 2004/05 using the new accounting standard (Resource Accounting and Budgeting) which includes non-cash items such as cost of capital and depreciation. These non-cash categories only apply to capital expenditure in the MRC’s own research establishments and not, for example, to research grants or training awards. Figure 1b shows the same estimates but with the non-cash items removed, and is comparable with analyses used in previous years.
For news of our progress in implementing this strategic plan, please visit the MRC website www.mrc.ac.uk

Medical Research Council
20 Park Crescent London W1B 1AL
tel: 020 7636 5422  fax: 020 7436 6179
www.mrc.ac.uk