MRC integral to UK clinical research drive

Speaking at the Academy of Medical Sciences (AMS) in June, Lord Warner of Brockley announced the formation of the UK Clinical Research Collaboration (UKCRC) – a multi-partner initiative launched to give a major boost to clinical research in the UK. The Government has also set up a new MRC/Health Departments (HDs) Joint Health Delivery Group to increase the strategic coordination of publicly funded medical research and support the UKCRC.

UKCRC

The UKCRC was a key recommendation of the Research for Patient Benefit Working Party set up in response to influential reports in Autumn 2003 by the AMS and the Government’s Bioscience Innovation and Growth Team. With a mission to coordinate and transform clinical research in the UK, the partnership will involve the MRC, Government, the NHS, academia, medical charities, industry and the public. Its initial priorities are to build up the NHS research infrastructure and a skilled clinical research workforce, streamlining regulatory and governance processes, and coordination between funding bodies. It 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 will play a central role in the UKCRC.

The chair, Professor Sally Davies, Director of NHS R&D, is an MRC Council member, and the executive team is to be hosted at the MRC’s head office. The team is led by Acting Chief Executive Dr Liam O’Toole, who was previously head of the National Cancer Research Institute (NCRI), which the MRC was instrumental in establishing.

The MRC has set up a Clinical Research Advisory Group, chaired by CEO Colin Blakemore, to advise its Council on the MRC’s role in the drive to boost UK clinical research and its positioning within the UKCRC.

UKCRN

To support the UKCRC, the Department of Health (England) is forming a UK Clinical Research Network (UKCRN), with funds earmarked to strengthen clinical trials infrastructure. Modelled on the successful cancer research network, the UKCRN will initially cover the other existing NHS network, in mental health, and new ones in the priority areas of medicines for children, stroke, diabetes and Alzheimer’s disease. Tendering for the UKCRN Central Coordinating Centre is underway, and proposals are being developed for coordinating centres in each of the six networked research areas, with those for cancer and mental health expected to be fully operational in Spring 2005.

“We welcome Chancellor Gordon Brown’s budget announcement of a cash injection for medical research over the next four years, and will be working even more closely with the Government and the Health Departments to address national health priorities in the years ahead.”

Colin Blakemore, MRC Chief Executive

Joint Health Delivery Group

In July the Government announced the 2004 Spending Review settlement for science (allocations to individual Research Councils are expected early in 2005) and a 10-year investment framework. To ensure that there is more effective coordination of medical research between public sector funders, it commissioned the MRC/HDs Joint Health Delivery Group. The Group held its first meeting in October, and senior MRC and HDs officials are meeting in November to develop the workplan in more detail.

Take your partners

Medical research is a multifaceted enterprise. Government agencies, industry, medical charities, academic researchers, doctors, patients and the public all have an important contribution to make to the delivery of new medicines, diagnostic tests, healthcare products and treatments. The new partnerships among these key players are essential to achieving the shared goal of turning scientific advances into benefits for patients.

Find out more online

For further information about UKCRC visit
www.ukcrc.org
Academy of Medical Sciences – Strengthening Clinical Research
www.acmedsci.ac.uk/p_scr.pdf
Bioscience Innovation and Growth Team – Bioscience 2015 – Improving National Health, Increasing National Wealth
www.bioindustry.org/bigreport/
Science & innovation investment framework 2004-2014
www.hm-treasury.gov.uk/spending_review/spend_sr04/associated_documents/spend_sr04_science.cfm
MRC Research Board funding 2004/05

The Spring edition of Network told readers about major changes to MRC grant schemes and application processing. We would now like to update you on the level of competition for funding in 2004/05 and on our processes for reviewing the increasing number of applications.

The review process
The MRC’s new arrangement for reviewing applications commenced from the October/November 2004 Board cycle. All applications continue to go through the peer-review process to ensure that those of the highest quality are funded. After external peer review, a shortlist for consideration by each of the Research Boards will be drawn up by the triage panel, a subcommittee of the Research Board, on the basis of referees’ reports. Those with the lowest chance of success will be declined at this stage.

New Intention to Apply form
There has been a significant increase in applications following the introduction of the new Research and Collaborative Grant Schemes. Given that each application must be peer-reviewed by up to five referees depending on its size and complexity, this poses a problem in terms of the overall number of reviewers required. To help the MRC deal with this challenge, we have asked researchers applying to the Board cycles in January/February 2005 and May/June 2005 to give us advance warning by submitting an Intention to Apply form through the MRC website. Depending on application trends this year, we may ask applicants for notification of intention to apply in subsequent Board cycles. Where the demand for referees exceeds the number available, the MRC will need to use special Board panels to review smaller applications.

Research Board funding decisions
An MRC Research Board will only hold over an application for consideration at its next meeting if it feels the application may be competitive for funding at the future meeting. In addition, applicants may withdraw their application during the refereeing stage in order to submit their application to a future, less competitive Board cycle.

Where an application is declined by the triage panel or Research Board, the applicant may not resubmit it within the following 12 months.

Competition for funding 2004/05
The above table shows this year’s current trends in application numbers, awards and MRC funding available by Board cycle. The information is also available on the MRC website, www.mrc.ac.uk/funding_available_2004-05, where it will be updated for each Board cycle (approximately every four months). Shortly after the end of the 2004/05 financial year we will publish details, by university, of number of applications, awards and spread of scores.

If you have any specific enquiries about the MRC’s review process, please email: operationalmanager@headoffice.mrc.ac.uk

Research centre news

New Centre celebrates
The MRC/University of Sussex Genome Damage and Stability Centre (GDSC) Development achieved full Centre status in October. Directed by Professor Tony Carr, the Centre investigates how cells respond to genetic damage and how these processes relate to cancer and other aspects of human disease. A major focus is the mechanisms that repair DNA damage caused by constant daily attack by sunlight, agents in food and wear-and-tear.

A sculpture and plaque were unveiled in the Centre foyer to mark the occasion. The sculpture, which is an abstract representation of the junction formed between pairs of DNA strands when they exchange partners, was created by Dr Robin Holliday, a retired scientist who first proposed the eponymous “Holliday Junction” that inspired the piece in 1964. At the unveiling ceremony, Professor Penny Jeggo, who studied in his lab, said: “The sculpture will create a positive impression for the Centre and remind our students and researchers of the wonderful history of their subject and the close relationship between science and art.”

To find out more about the GDSC visit www.biols.susx.ac.uk/gdsc
The MRC is reviewing its support for non-clinical scientists in universities at the early stages of their careers.

The MRC has four different schemes targeted at scientists at this career stage: Career Establishment Grants (CEGs), New Investigator Awards (NIAs), Career Development Awards (CDAs) and Senior Non-Clinical Fellowships (SNCFs). CEGs and NIAs are open to both clinical and non-clinical scientists. The overall budget for new awards under these four schemes is approximately £20m a year, which is about 15 per cent of the total funding available for new awards to higher education institutions (HEIs) in 2004/05.

The CEG scheme was set up in 1998, at the time when Cooperative Group Grants were introduced. Now that the MRC’s range of grant schemes has changed and offers increased opportunities for funding for individual projects, we need to review whether the CEG scheme, or any of our schemes targeted at younger scientists, are still needed. We are also considering whether the NIA and CEG schemes should be merged or revised in order to meet more effectively the needs of scientists who are beginning their independent careers.

There are a number of additional external factors that will have an impact on the environment in which these schemes operate. One example is the transition to full economic costing, which means that the MRC needs to review whether separate fellowship and grant schemes are still needed or whether these two types of support should be merged. Another is the implementation of the EU Fixed Term Contracts Directive, whereby fixed-term contracts extending beyond four years could be difficult to justify, which may change the nature of the employment relationship between universities and fellows. The Directive may also have a significant impact on the mobility of post-doctoral researchers between institutions.

Dual support reform and the transition to full economic costing in 2005 will mean that grants will include at least a proportion of the principal investigator’s salary. As a result, the main operational distinction between fellowships and grants, the inclusion of the award holder’s salary for fellowships, will be eroded.

The new Office of Science and Technology Academic Fellowships scheme, implemented in 2004 (www.rcuk.ac.uk/acfellow), should also have an impact on the employment prospects of scientists at the early stages of their independent research career. This scheme provides 200 five-year fellowships a year to HEIs for people making the transition into their first academic post. This gives an eventual total of 1,000 posts. The awards cover all subject areas, although a high proportion of those made in 2004 were for medical or biological sciences.

The consultation process and timescale for the review

In September a questionnaire was sent to all MRC grant-holders and holders of non-clinical fellowships; members of MRC research boards and training panels; and universities and other organisations with an interest in scientific careers. The closing date for submission of completed questionnaires was mid-September. Respondents’ feedback will be used to develop initial proposals for any changes to existing grant and fellowship support. In addition, all holders of CDAs, SNCFs, CEGs and NIAs were invited to a consultation workshop held in early November where these proposals were discussed with members of the MRC’s Training and Career Development Board. These discussions will inform further development of any proposals for change, which the MRC’s Council will consider in the spring of 2005.

Opportunities

The MRC offers support for talented individuals who want to develop research careers in the biomedical sciences, public health, and health services. We have a comprehensive range of personal award schemes each tailored to particular stages in clinical or non-clinical careers. For further details visit www.mrc.ac.uk

Fellowship applications 2004/05

<table>
<thead>
<tr>
<th>Fellowship Name</th>
<th>Deadline</th>
<th>Interviews</th>
<th>Take up</th>
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</thead>
<tbody>
<tr>
<td>Clinical Research Training Fellowship (round 1)</td>
<td>3.9.04</td>
<td>21/23.2.05</td>
<td>1.4.05 to 30.9.05</td>
</tr>
<tr>
<td>Senior Non-Clinical Fellowship</td>
<td>3.9.04</td>
<td>9/10.2.05</td>
<td>1.4.05 to 30.9.05</td>
</tr>
<tr>
<td>Visiting Fellowship in Genetics in Healthcare</td>
<td>10.9.04</td>
<td>No interview required</td>
<td>1.2.05 to 31.7.05</td>
</tr>
<tr>
<td>Special Training Fellowship in Health Services and Public Health</td>
<td>1.10.04</td>
<td>22/23.3.05</td>
<td>1.6.05 to 30.11.05</td>
</tr>
<tr>
<td>MRC Clinician Scientist Fellowship</td>
<td>29.10.04</td>
<td>18/20.4.05</td>
<td>1.6.05 to 30.11.05</td>
</tr>
<tr>
<td>Senior Clinical Fellowship</td>
<td>29.10.04</td>
<td>18/20.4.05</td>
<td>1.6.05 to 30.11.05</td>
</tr>
<tr>
<td>Career Development Award</td>
<td>7.1.05</td>
<td>15/16.6.05</td>
<td>1.9.05 to 28.2.06</td>
</tr>
<tr>
<td>Special Training Fellowship in Bioinformatics and Neuroinformatics</td>
<td>18.2.05</td>
<td>13.7.05</td>
<td>1.9.05 to 28.2.06</td>
</tr>
<tr>
<td>Clinical Research Training Fellowship (round 2)</td>
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<td>4/6.7.05</td>
<td>1.9.05 to 28.2.06</td>
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<td>Department of Health Clinician Scientist Award</td>
<td>13.5.05</td>
<td>31.10.05</td>
<td>To be confirmed</td>
</tr>
<tr>
<td>Collaborative Career Development Fellowship in Stem Cell Research</td>
<td>31.10.05</td>
<td>To be confirmed</td>
<td>To be confirmed</td>
</tr>
<tr>
<td>ESRC/MRC Interdisciplinary Post-doctoral Fellowship</td>
<td>31.10.05</td>
<td>To be confirmed</td>
<td>To be confirmed</td>
</tr>
</tbody>
</table>
Francis Crick (1916-2004)

Francis Crick, who had suffered from cancer for some time, died in La Jolla, California, on 28 July. Mark Bretschler worked with Francis at the MRC Laboratory of Molecular Biology, Cambridge, for many years. Here he pays tribute to his outstanding contribution to molecular biology...

Francis Crick (1916-2004)

Francis Crick was a person of incredible intellect and imagination. Although a theoretician (he had little patience for experiments, with the notable exception of his initial work on the acridine mutant story), he placed great weight on the results of experiment and was always careful to give credit to the individual who had done it. He had a fine sense of humour and a wonderfully infectious laugh. With Sydney, who joined him in the early 1950s, he shared a close and extraordinary scientific companionship. Between them — with Sydney’s imagination and Francis’s logic — they helped bring an intellectual vitality to the MRC Unit in the Cavendish and, later, to the LMB, which placed it at the centre of the new field of molecular biology. Among the group of immensely talented scientists who founded the LMB and created its special character, Francis Crick was the intellectual star.

Francis was interested in biology in a broad sense: why we are here and how we function. He loathed religion and was fascinated by problems, such as how patterns are formed in biology, or those posed by the origins of life, or how the brain works. In 1976, he and his wife, Odile, left Cambridge for the Salk Institute in La Jolla. There, he immersed himself in trying to define how we are aware of things – consciousness. He continued with this until he died, defining the important goal of trying to find a neuronal correlate of consciousness.

Professor Maurice Wilkins, who shared the Nobel Prize with Francis Crick and James Watson, died in October. He taught Crick about DNA, inspired Watson to join Crick at Cambridge, and developed the X-ray imaging technique that was used to crack its structure.
Basic Technology open days

The Basic Technology Programme is a Research Councils UK (RCUK) initiative to help build new generic technologies that can be applied to diverse research challenges arising from the scientific interests of all the research councils. Transcending traditional research council boundaries, the programme encourages new groupings encompassing a wide range of science disciplines. The aim is to free researchers’ thinking from the constraints of particular disciplines or organisational pigeon-holes to expand their ability to generate new ideas and solutions.

There have been four RCUK calls for Basic Technology proposals – one a year since 2001 – with 24 projects commissioned and grants totalling £63m awarded for up to four years. Mid-point reviews of eight of the first round of projects are now underway. They will take place in parallel with open days at which project teams will present their progress to a wide audience including potential users of their basic technology and other interested stakeholders. The open days are for anyone with an interest in how the work is going, and registration is free.

Visions of the future

A collaborative project on artificial vision – Next generation artificial vision systems: reverse engineering the human visual system – has its open day on 30 November at Imperial College, London. Lead by Professor Maria Petrou at the University of Surrey, it also involves researchers from Imperial College London and Royal Holloway. The team are drawing inspiration from the human visual system to explore ways to improve computers’ ability to visualise what is going on around them. But building machines that can ‘see’ better is not the only aim – the research will also provide a better understanding of how human sight works and what goes wrong when it fails.

What is basic technology?

Basic technology refers to new capabilities that emerge from scientific research in all its guises. Positioned at the opposite end of the basic research spectrum to curiosity-driven science, it requires research dedicated to pushing back the frontiers of investigation to open up new areas and more extreme scales for exploration. While the programme’s next generation of tools, techniques and processes will focus on advancing basic science and engineering, they will also lay the foundation for future industrial applications.

Meanwhile, at the University of Wales College of Medicine, MRC-funded scientists Professor Paul Smith and Dr Rachel Errington are leading an ambitious project to miniaturise optical biomedical tests. They propose to shrink the equipment from an entire laboratory to a size small enough to be assembled into a pocket-sized device that would make it faster and cheaper to diagnose disease and target or monitor treatment, and also reduce the need for outpatient tests. The open day for this project will be held in 2005.

NIMR Task Force update

The October meeting of the MRC’s Council revisited the final report of the Task Force on the MRC National Institute for Medical Research (NIMR), NIMR staff having had the opportunity to comment on the recommendations and the Council’s earlier preliminary comments.

The Council endorsed its preliminary conclusions, published after the July meeting, that the NIMR should be renewed as a multidisciplinary research institute, based in the London area, focused on basic and translational research. The main area of discussion was the strength of the case to co-locate the NIMR with a major academic and clinical partner – the Task Force having recommended King’s College London and University College London as possible options.

The NIMR’s Director, staff and trade union representatives argued strongly that Mill Hill should be considered as a third and equal option for the renewed institute, including for reasons of economy. The Council carefully considered their view that the vision for the NIMR could be realised by investment at Mill Hill, but concluded that the case for co-location with a university and hospital, as set out in the Task Force report, remains persuasive. It could not reconcile the NIMR in its present form with the strategy for achieving the vision proposed by the Task Force.

The Council decided unanimously that the next stage should focus on the science and business cases for relocating the NIMR. Its final conclusion awaits formal appraisal of the preferred options, which will weigh up the feasibility, costs and benefits of delivering the necessary facilities.

The Council stressed that this does not imply that the NIMR would close if relocation to one of the central London partners does not go ahead; the Council is, rather, reserving its position. In these circumstances, the Council will look afresh at all options, including Mill Hill.

A steering committee, chaired by Dr Peter Fellner, has been set up to oversee the completion of the science case and the development of the business case. Council members Mr Derek Flint, Professor Alan North, Professor John Savill and Professor Herb Sewell agreed to join the committee.

A decision on the preferred partner and location is anticipated at the Council’s meeting on 15 December, with further decisions by the Council dependent on the completion and approval of the business case.

Find out more online

For more information on the Basic Technology programme, including full details of these and other project open days, visit www.rcuk.ac.uk/basictech

www.mrc.ac.uk/about-nimr_taskforce_bulletin
Unit profile: Social and Public Health Sciences Unit

Medical research is about more than laboratories and hospitals. People’s social and physical surroundings and lifestyle

The SPHSU is looking into the impact of supermarket developments on local communities in Glasgow.

are becoming increasingly important in Government thinking. The Wanless report, and reduce inequalities. However, evidence-based approaches to improving public health until recently there has been little rigorous analysis of strategies to improve public health life, gender, sexuality, age and ethnicity, and people’s options and choices about how to live their lives. Although tackling health inequalities is a policy priority in the UK and abroad, until recently there has been little rigorous analysis of strategies to improve public health and reduce inequalities. However, evidence-based approaches to improving public health are becoming increasingly important in Government thinking. The Wanless report, Secure Our Future: Health-Taking A Long-Term View (2004), highlights the need to assess the scale of the problems, to find out how people’s circumstances and behaviour promote or damage their health, and to design and evaluate measures aimed at reducing inequalities. The SPHSU is ideally placed to address these priorities and to help bridge the gap between social science and policy-making.

The Unit has spent many years investigating social and environmental influences on health and its major contributions have gained international recognition. Its seven research programmes (see opposite) encompass diverse disciplines including psychology, anthropology, sociology, geography, and history complemented by expertise in epidemiology, systematic review and statistics. The SPHSU’s future research will build on its traditional strengths, with increased emphasis on the rigorous evaluation of interventions, and expanded geographical and historical coverage.

Research advantages of Scotland

Overall, people’s health in Scotland is generally worse than in the UK, and Glasgow shows particularly stark contrasts between social groups. Areas of concentrated deprivation with double the UK death rate are found alongside neighbourhoods with the highest life expectancy. Such extremes make Glasgow a rewarding setting for SPHSU researchers.

The origins of the Social and Public Health Sciences Unit lie in the MRC’s Obstetric Medicine Research Unit, set up at Aberdeen University in 1955 to look at how factors such as housing conditions and poverty affect women’s reproductive health and childbirth. When Director Sir Dugald Baird retired in 1965, the Unit became the MRC Medical Sociology Unit. It moved from Aberdeen to Glasgow University in 1984, with Sally Macintyre as its new Director. In 1998 the Unit merged with the Scottish Executive Public Health Research Unit, which had also originally been established to explore social aspects of maternal and child health. The Unit’s new name — the Social and Public Health Sciences Unit (SPHSU) — reflected its broader remit covering social and environmental influences on health. The SPHSU is jointly funded by the MRC and the Chief Scientist Office (CSO) at the Scottish Executive Health Department.

Evidence-based public health

The major UK and international health priorities, including cancer, heart disease, obesity, diabetes, and sexual and child health, all show strong social patterning. These differences reflect social, environmental, cultural and economic influences such as wealth and social status, social cohesion and exclusion, housing and working conditions, education, family life, gender, sexuality, age and ethnicity, and people’s options and choices about how to live their lives. Although tackling health inequalities is a policy priority in the UK and abroad, until recently there has been little rigorous analysis of strategies to improve public health and reduce inequalities. However, evidence-based approaches to improving public health are becoming increasingly important in Government thinking. The Wanless report, Secure Our Future: Health-Taking A Long-Term View (2004), highlights the need to assess the scale of the problems, to find out how people’s circumstances and behaviour promote or damage their health, and to design and evaluate measures aimed at reducing inequalities. The SPHSU is ideally placed to address these priorities and to help bridge the gap between social science and policy-making.

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The SPHSU is looking into the impact of supermarket developments on local communities in Glasgow.

Aims

The SPHSU’s aim is to promote better health through research into social and environmental influences on health. It studies how people’s social positions and social and physical environments influence their physical and mental wellbeing and their capacity to lead healthy lives. The Unit devises and tests measures designed to improve public health and to redress inequalities, and disseminates the results and their implications to influence government policy and practice.

“We focus on those factors with plausible links to health or health-related behaviour, which are amenable to empirical research, and importantly offer scope for real-world policy interventions.”

Professor Sally Macintyre, Director SPHSU

In 1987 the Unit began the “West of Scotland Twenty-07 Study: Health in the Community”, a 20-year study of three groups of people then aged 15, 35 and 55, to find out how social circumstances contribute to health and inequalities. The study has collected a wealth of data on people’s health, lifestyle, and environment, and is one of the Unit’s most important resources. Other SPHSU studies include one on teenage health that follows 2,500 11-18 year-olds, and “Children of the 1950s”, a collaboration with the London School of Hygiene and Tropical Medicine, which is revisiting 12,000 people first studied in 1962 at the ages of 7-12 by the MRC Obstetric Medicine Research Unit.

Although it exploits opportunities afforded by its Scottish location, the SPHSU’s work is ultimately of global relevance as it deals with social and biological processes that are common the world over. The Unit has an active and expanding programme of collaborations with researchers in other countries, which enables it to draw comparisons that can reveal common health determinants and patterns of inequalities, and set the UK situation in an international context.

Scotched myths

Have billions of pounds spent on urban renewal in the UK over the last 20 years measurably improved the nation’s health? Do out of town supermarkets create ‘food deserts’ with reduced availability of affordable healthy food in poor areas? And is channelling additional resources to deprived neighbourhoods an effective way to benefit poor people and tackle health inequalities? If public health policy is to have a sound basis, it is important that answers to questions like
JHNU, Glasgow

all affect their health.

a tradition…

The SPHSU occupies four linked Victorian villas on the University of Glasgow campus.

these are based on scientific evidence rather than common assumptions. The SPHSU’s work frequently involves scrutinising conventional wisdom, and often finds that what people take for granted is either unfounded, or more complex than expected. For example, one SPHSU study found that supermarkets were more likely to be found in poorer rather than richer areas of Glasgow. Another showed that in Scotland targeting the poorest 20 per cent of areas would miss more than half of unemployed people and two thirds of low income households. And while there are 30 per cent more deaths in Scotland in winter than summer, an SPHSU analysis has demonstrated that this seasonal increase is not linked to poverty.

Twenty-first century public health

The Government’s goal of improving the nation’s health through a new partnership with a public that takes greater responsibility for its own health is a considerable challenge. A policy framework that aims to change deeply rooted social inequalities and ingrained cultural attitudes to health will require improved data and designs for studying social factors. It will also require research into the thinking and behaviour that affects people’s health and how to influence these effectively. The SPHSU’s work is at the forefront of international progress in these areas. It will play an integral part in generating social scientific evidence to support new public health policies and in ensuring that the MRC’s public health tradition continues to flourish.

SPHSU research programmes

Social and spatial patterning of health (MRC) / Sally Macintyre

This programme examines socio-economic and geographical inequalities in health, from birth to death. A 15-year study of two Glasgow neighbourhoods has looked at how people’s health is affected by local factors such as housing, transport and local amenities, facilities for – or barriers to – getting healthy exercise and food, and antisocial activities such as littering and graffiti. The study finds that deprived areas tend to have fewer public facilities – for example, areas of low car ownership are poorly served by public transport – but that patterns of such ‘deprivation amplification’ are more complex than they may seem at first.

Measuring health (CSO) / Alastair Leyland

This programme analyses population data such as Scottish NHS, cancer and birth and death records. It measures variations in public health and its determinants, to highlight inequalities and suggest how these might be redressed, and to refine measurement methods. A major study is cross-linking Scottish health statistics and life-course data, to track influences such as birth-weight, diet, education, smoking and deprivation, and to compare urban and rural health. The group uses census data to map relative deprivation, and relates this to outcomes from teenage pregnancy to long-term illness and death.

Evaluating the health effects of social interventions (CSO) / Mark Petticrew

Little is known about how social policies operate in different settings, or about the health impacts of social changes. This programme collaborates with other groups to assess how real-world changes affect people’s wellbeing to provide robust evidence to inform policy planning. These studies include evaluations of social housing and urban renewal in Scotland; traffic calming the effects of a supermarket opening in a deprived area and a swimming pool closure in Glasgow; the Scottish Executive’s central heating initiative; and systematic reviews of road building, transport policy, area-based regeneration, and new housing.

Youth and health (MRC) / Patrick West

This programme studies influences on young people’s health and health behaviours – particularly those associated with the family, school, peer group and youth culture. Surveys of two groups of Scottish 15-year-olds, born 12 years apart in the early 1970s and 1980s, showed rises in psychological distress linked to worries about school performance among girls but not boys. The same study revealed rapidly rising drug use among girls approaching levels previously only seen in boys, which may be because girls spend more time outside the home than before, while more boys are staying in to read, play on computers and do hobbies.

Gender and health (MRC) / Kate Hunt

This programme aims to explain how gender shapes people’s experience of wellbeing and ill health, and to account for similarities and differences in patterns of health between men and women. It has dispelled the stereotype that men are less ready than women to complain about health problems, and to account for similarities and differences in patterns of health between men and women. It has also shown that although coronary heart disease is the leading cause of death in both men and women, both sexes still tend to perceive it as a ‘male’ disease.

Ethnicity and health (MRC) / Seeromanie Harding

It has been known for 30 years that health varies between ethnic groups, but the reasons remain largely unexplained. This programme is examining how social circumstances relate to health differences that arise between ethnic groups throughout life. A major focus is the health of British-born ethnic minorities, and whether insusceptibility to poor health as adults originates in children or adolescence. In 2003, some 6,500 schoolchildren from different ethnic backgrounds took part in the largest population survey of its kind in the UK. Focusing on children to identify risk early optimises the chances of being able to prevent chronic disease in later life.

Sexual and reproductive health (MRC) / Graham Hart

This group studies social influences on sexual and reproductive health. It works with young people, gay men, sex workers, and communities in the UK and Africa, Asia and the Caribbean to find effective ways to promote good sexual health, and to prevent or minimise unwanted outcomes. Trials of a new approach to sex education in 25 secondary schools, peer-to-peer sexual health promotion by gay men in Glasgow, and programmes in Africa suggest that increasing people’s knowledge does not necessarily change risk behaviours in the short-term. There have been positive outcomes: the Glasgow scheme increased gay men’s use of sexual health services, and a study showing that most pregnant women were willing to have HIV tests contributed to a UK-wide change in HIV antenatal testing policy, which is now offered in all clinics.
Smokers die 10 years younger
Fifty years after proving the link between smoking and lung cancer, Sir Richard Doll, joined by his long-standing colleague in tobacco research Sir Richard Peto, presented the final results of the landmark study of smoking and death in British doctors. Professor Doll launched the study in 1951, recruiting 34,439 British male doctors born between 1900 and 1930 and periodically monitoring their smoking habits and survival over the next 50 years. The data show that the risks from smoking are even greater than anticipated. At least half of persistent cigarette smokers were killed by their habit, dying on average 10 years younger than non-smokers. And in men born around 1920, the risk was even higher, perhaps because they experienced intense early exposure to smoking as forces conscripts in World War II. The study, which is funded by the MRC, Cancer Research UK and the British Heart Foundation, also demonstrates the benefits of quitting at any age. Stopping at 50 halves the risk, and stopping at 30 almost eliminates it. MRC CEO Colin Blakemore said: “These new findings… show the benefit of funding clinical research over a long period of time.”

BMJ 328: 1519-28

Study highlights binge drinking danger
MRC Professor Ole Petersen has gained new insight into how excessive alcohol consumption triggers acute pancreatitis – an often fatal condition in which the pancreas digests itself and surrounding tissues. Scientists already knew that alcohol is a primary cause, but did not know why. Research by Professor Petersen’s team at the University of Liverpool shows that alcohol itself has surprisingly little effect on the pancreas, even at high concentrations, but that alcohol by-products produced by the pancreas rapidly destroy its cells. The toxic substances induce a massive intracellular release of stored calcium ions, irreversibly shutting down vital cellular energy supplies. The finding highlights the potential harmful consequences of the rising national trend in binge drinking, and indicates that it may be more difficult than had previously been thought to find ways to treat alcohol-induced pancreatitis.

PNAS 101: 10738-10743

Promising start for surgery trial
Early indications from trials of new approach to surgery for abdominal aortic aneurysms (AAAs) – frequently fatal balloon-like bulges in one of the body’s main arteries – suggest that it could save many lives. Conventional surgery to repair AAAs uses a deep abdominal incision, and for 10 years surgeons have been refining a less invasive technique called endovascular aneurysm repair (EVAR). In EVAR, an artificial Dacron™ graft and a spring-loaded stainless-steel ‘stent’ that expands to secure it against the damaged vessel wall are introduced through small cuts in the groin, then guided into position using X-rays. The UK EVAR trial is led by MRC grant-holder Professor Greenhalgh, of Imperial College London and Hammersmith Hospitals NHS Trust, and funded by the NHS Health Technology Assessment programme. Its forerunner, the influential MRC-funded UK Small Aneurysm Trial, changed practice internationally by showing that it was not necessary to operate on aneurysms smaller than 5.5 centimetres. The latest study, involved more than 1,000 AAA patients at 41 hospitals, and compared the benefits of EVAR to conventional surgery. It showed that a month after surgery the death rate with EVAR was two thirds lower. Conventional surgery. It showed that a month after surgery the death rate with EVAR was two thirds lower. It showed that a month after surgery the death rate with EVAR was two thirds lower. Professor Greenhalgh said that the results justify continued clinical trials of EVAR and follow-up of long-term outcomes to confirm its early promise.

The Lancet 364: 843-848

Doubt raised over head injuries treatment
A major MRC-funded trial shows that a standard treatment for severe head injuries does not improve survival and may do more harm than good. For 30 years, head injury patients worldwide have been treated with anti-inflammatory corticosteroid drugs, which were thought to prevent life-threatening brain-swelling after a head injury. However, there was insufficient evidence to prove that such treatment is beneficial. To find out, the MRC conducted CRASH, the largest ever head injuries trial. Coordinated by researchers from the London School of Hygiene and Tropical Medicine and the universities of Manchester, Edinburgh, Birmingham and Oxford, it involved over 10,000 patients from nearly 50 countries. Besides the usual emergency care, head injury victims whom doctors were uncertain whether or not to treat with corticosteroids, were randomly assigned to receive either corticosteroids or an inactive ‘placebo’. Twenty-one per cent of patients on corticosteroids died within two weeks compared to 18 per cent of the placebo group. The team will now investigate the impact of corticosteroids on disability in head injury patients in a six-month follow-up, and a second trial (CRASH-2) of a treatment for major bleeding after trauma is planned (www.crash.lshtm.ac.uk).

The Lancet 364: 1321-1328 (www.crash.lshtm.ac.uk)

Shifting towards healthier transport?
Discouraging car use and encouraging other modes of transport is now a common goal of transport policies. The main aim is often simply to reduce congestion, but a population shift from using cars towards walking and cycling could also yield public health benefits, particularly increased physical activity. But what actually works in achieving this? To find out, MRC Social and Public Health Sciences Unit (SPHSU) researchers systematically reviewed the best available evidence from towns and cities around the world. They found some evidence that giving targeted advice and support to people who are ready to change their behaviour can be effective, but very little to indicate that wider-ranging initiatives, such as traffic calming or publicity campaigns, have resulted in a shift towards walking and cycling or any consequent overall improvement in health. MRC fellow David Ogilvie and SPHSU associate director Mark Petticrew see their work as a starting-point for future research. They point out that walking and cycling have only recently begun to be taken seriously in transport policy and research, and they identify a need for new studies to examine the actual contribution of transport policies to physical activity, population health and reducing inequalities.

BMJ 329: 763-766
MRCT adds value to science

MRC Technology (MRCT), the MRC’s technology-transfer arm, has launched two initiatives that will help the MRC derive added commercial value from its research.

A new in-house Assay Development and Screening Group (ADSG) will develop tests for use in drug discovery, and the MRCT Development Gap Fund has now been formally introduced following its 2001/02 pilot.

Drug discovery opportunities
Biomedical research in MRC institutes and units generates a wide range of discoveries – for example, newly identified molecular structures and biological mechanisms that could be used to develop new medicines. However, most require further validation and refinement to make them attractive to industry. The ADSG’s purpose is to add value to MRC science by converting molecular targets and bench assays into reliable high-volume tests that could be used for drug discovery. Operating from dedicated labs in Mill Hill, London, the ADSG has specialised facilities and expertise to configure assays suitable for high-throughput screening by a variety of detection systems. It works closely with MRC scientists to develop the screens, which are validated using a test library of 11,000 drug-like compounds. Any ‘positive hits’ are given back to the scientists to help their research, while the assays and reagents are licensed to industry for use in larger-scale drug screening programs.

If you are an MRC scientist who has identified targets that could be used for developing drug screens and are interested in working with the ADSG, contact Dr Debbie Taylor, Operations Manager, Assay Development Group, MRC Technology. Tel: 020 8906 7230 or email: debbie.taylor@tech.mrc.ac.uk.

Development gap funding
The MRCT Development Gap Fund (DGF) operates at the earliest possible stage of MRC science transfer, providing pre-seed money to nurture technologies and inventions that have clear commercial potential, but which are not sufficiently well developed to attract business investment. The scheme uses revenues from successful commercial activities and has funding of up to £4.5m over three years. There have been 16 applications for funding so far. Applications are invited when the MRCT identifies a clear need for focused studies to realise the commercial potential of a discovery.

Programmes funded by the DGF usually lie beyond the remit of MRC unit funding as they have clear commercial goals, and MRCT manages the assessment, implementation and review of funded proposals. The assessment criteria include intellectual property (IP) status, likelihood of enhancing IP value, competition and potential market, and successful applications have defined targets including technical and/or commercial milestones. Dr Lorraine Anderson, Development Gap Manager, is the contact for initial enquiries. Email: lorraine.anderson@tech.mrc.ac.uk or call 0131 311 7011.

International

Redefining heredity

In September the international Epigenome consortium, which includes MRC researchers, received €12m to create a European network of excellence in ‘epigenetics’. This rapidly emerging discipline investigates how the whole human genome, rather than simply the genes it contains, shapes life.

Describing individual genes is only a first step in understanding how genetic information is manifested in living organisms. The next piece of the jigsaw – the ‘post-genome challenge’ – is to understand how cells interpret the DNA they inherit to define their eventual roles, and what prompts them to keep functioning normally and copy themselves.

Epigenome brings together scientists from many disciplines who are tackling this question at different levels to pool expertise, resources and knowledge in a concerted effort to accelerate understanding of the genetic blueprint. The ultimate goal is to translate knowledge about the human biology into new ways to understand health and disease.

Professor Amanda Fisher of the MRC Clinical Sciences Centre (CSC), Hammersmith, and Professor Wendy Bickmore at the MRC Human Genetics Unit, Edinburgh, are leading Epigenome’s public sciences activities, which aim to disseminate knowledge and stimulate discussion on issues raised by advances in epigenetics. These will include a website; training courses for non-specialists; Europe-wide talks and discussion of science, medicine and ethics; school visits, open days, and contributions to science festivals; radio and TV. A project linking science and art through debate, theatre and alternative media will run at the Institute of Contemporary Art (ICA) in London. Professor Neil Brockdorff of the CSC completes the MRC team contributing to Epigenome.

Professor Fisher said: “This exciting collaboration will help us understand how, despite having the same DNA, cells receive their different instructions to fulfil their own unique jobs and to continue to replenish and divide ensuring the imprinted memory of their function gets passed on from generation to generation. Knowing more about these processes is what helps scientists turn knowledge into new ideas about preventing and treating disease.”

Find out more online
www.epigenome.org/
The MRC brings science to life at the BA festival

A wide range of MRC science was on show at this year’s annual festival of the British Association for the Advancement of Science, held in Exeter from 6-10 September. MRC researchers from PhD students to the Chief Executive responded to the theme of “The responsibilities of being a scientist” with talks on topical issues, events and activities designed to appeal to audiences young and old.

Memories are made of this

A day-long session organised by the MRC and the BA Medical Section tackled one of today’s greatest scientific challenges, the biological basis of learning and memory. Professor Graham Collingridge, Director of the MRC University of Bristol Centre for Synaptic Plasticity, chaired the session, which included talks by MRC CEO Professor Colin Blakemore and MRC Research Professor and Council member Nancy Rodwell. Colin Blakemore explained how sensory stimuli influence the molecular processes that shape rapid mammalian brain development shortly after birth. He also described how imaging experiments in people who have become blind reveal that other senses, for example hearing and touch, still activate their visual cortex. The finding may help to explain the curious biological phenomenon of synaesthesia where some people’s senses are entangled so that, for example, they associate colours or smells with sounds or words. Nancy Rodwell spoke about her latest research into stroke-induced brain damage. Her team has discovered that within minutes of a stroke, toxic molecules released from dying brain cells trigger a response from the brain’s immune system that kills healthy neighbouring cells and makes the damage worse. Preliminary trials in stroke patients of immuno-suppressive drugs currently used to treat arthritis have yielded promising results, and a much larger study is planned to see if these could be used to help stroke patients make a better recovery.

Are clinical trials good for your health?

Professor Janet Darbyshire, Director of the MRC Clinical Trials Unit, chaired a session on the ethical issues raised by clinical research in both the UK and developing world. Professor Brian Greenwood – former director of the MRC Laboratories in The Gambia – talked about his experience of conducting trials in Africa, and Dr John Zajicek presented encouraging follow-up data from his MRC-funded trials of cannabis-derived drugs to treat symptoms of multiple sclerosis.

Other talks included:

- **Professor Geoffrey Raisman (MRC National Institute for Medical Research, NIMR)**
  To see what has never been seen – how the brain adapts to completely new experiences and thoughts, and how understanding the mechanisms involved could lead to ways of repairing brain damage.
- **Dr Andy Caulder (MRC Cognition and Brain Sciences Unit, Cambridge)**
  Fear, loathing and anger in the human brain – certain brain structures are part of a deep-rooted protection mechanism that enables us to recognize emotional expressions such as fear, disgust and anger.
- **Dr Jo Peters (MRC Mammalian Genetics Unit, Harwell, Oxfordshire)**
  The use of the mouse genome sequence for understanding gene function – because mice share many genes in common with humans they provide a good model to learn how genes work and how gene defects cause disease.
- **Dr Robin Lovell-Badge (NIMR)**
  The scientist’s perspective of the controversy of human cloning – Concern about ‘reproductive cloning’ is a red herring that should not hold back stringently regulated research into using human embryonic stem cells to treat currently incurable diseases.
- **Professor John Newton (UK Biobank)**
  Responsibilities in medical research – research involving volunteers must be based on trust and informed consent, with transparent regulatory structures and safeguards that both protect the interests of the participants and promote good research.

Perspectives

A poster session with a twist gave PhD students an opportunity to think about and discuss the ethical and social implications of their work. The Perspectives competition invited students sponsored by the MRC and Engineering and Physical Sciences Research Council (EPSRC) to come up with ideas for posters exploring the social and ethical implications of their research. The designs of the twenty-one shortlisted finalists – six MRC and 15 EPSRC – were displayed in the exhibition area. The finalists were on hand to explain their research to festival visitors, journalists and the judging panel, which included incoming BA President, Professor Robert Winston.

Both judges and visitors voted for the posters that most successfully conveyed the research and its implications, with the winners announced at the lively evening X-change event led by BBC broadcaster Quentin Cooper. Overall winner was Alexis Vladas, an EPSRC student at the University of Oxford Department of Materials, who took the £500 prize for Nanotechnology Opportunities, Risks and Chances. Three of the five runners-up were MRC students: John Beaver (MRC Cognition and Brain Sciences Unit, Cambridge); Neil Featherstone (Royal Liverpool Children’s Hospital); and Robin Johns (Centre for Respiratory Research, University College London). The other MRC entrants were Jing Deng (University College London), Ben MacArthur (University of Southampton) and Kate Sleeth (MRC Radiation and Genome Stability Unit, Harwell).

Find out more online

To see the 2004 Perspectives entries and more information about the competition, visit www.the-ba.net/perspectives
A festival of science

Thinking Science Making Art
This innovative MRC-sponsored project, designed to engage children in science through a brain-science art competition, was a runaway success. Lizzie Burns – creator of the Medical Research Revealed series of paintings inspired by MRC research – ran the event, which she and Graham Collingridge developed to attract youngsters to the festival’s medical session.

Lizzie had previously visited 14 Exeter junior schools, where she taught 8-11 year olds about the human brain to inspire their own artistic interpretations of brain cells. These were then made up into class collages based on the senses or emotions. At the festival, the collages were exhibited during the Memories are made of this event, and judged by Colin Blakemore, Graham Collingridge, Gina Cox – curator of Exeter University’s fine arts collection – and well-known Devon artist Alan Cotton. When congratulating the participating schools, all the judges agreed that the children’s work was thought-provoking and visually and emotionally compelling. This praise was echoed by enthusiastic feedback from pupils, teachers, parents and festival-goers alike. After the festival, the exhibition moved to Exeter Cathedral for a week to give a wider audience, including parents and teachers, a chance to see the children’s work. And in early October, Lizzie and Graham visited the winning class to present their prize of £120 towards arts materials and to answer more questions about the brain.

Build a brain
Thinking Science Making Art also involved hands-on activities in the festival’s drop-in zone, with hundreds of visitors of all ages participating during the week. Build a Brain invited them make a clay neurone, with a happy memory written on a slip of paper hidden inside, and add it to an ever growing brain sculpture. This activity was so popular, especially with younger children and teenagers, that it had to be stopped a day early to stop the ‘brain’ from becoming too big to move. For those who didn’t want to get their hands dirty a fascinating timeline of living memories gave older visitors the chance to record memorable events. The earliest was from the 1920s “when skirts went above the knee.”

Lizzie Burns helps pupils put the finishing touches to their brain collage.

Exeter schoolchildren add their memories to the brain sculpture.

Infowatch

First Year, Worst Year
This book by Barbara Wilson of the MRC Cognition and Brain Sciences Unit and her husband Michael, is a brave and moving account of how their family coped with the unexpected death of their daughter Sarah, who drowned in a white-water rafting accident four years ago. Based on Barbara’s personal diary, the book describes the emotional anguish of bereavement, and how the family have fought through their grief to bring a degree of normality back to their lives.


www.ct-toolkit.ac.uk

The MRC and the Department of Health launched this website in October to help clinical scientists to negotiate complex new EU clinical trials legislation. The site uses a ‘route map’ approach to working through the regulations, with colour-coded directions to highlight the key issues for academic trialists and links to sources of further information. It shows changes in trial practices, distinguishes between legal requirements and good practice and offers practical advice on implementing the legislation.

Events diary

Chemical Reactions
What are the health effects of man-made chemicals in everyday household products? Should artificial substances – from air-fresheners to children’s beakers – raise more concern than natural ones?

This online debate is one in a series sponsored by the Natural Environment Research Council and the MRC with topical website Spiked-online, to stimulate dialogue on science issues relating to the environment and health. The debate starts on 23 November. To have your say visit www.spiked-online.co.uk
Dr Greg Winter – joint head of the MRC Laboratory of Molecular Biology (LMB) Division of Protein and Nucleic Acid Chemistry, and Deputy Director of the MRC Centre for Protein Engineering (CPE) – was knighted in the Queen’s Birthday Honours for his services to molecular biology. Building on Nobel Prize-winning work by Cesar Milstein and Georges Köhler at the LMB, Dr Winter has made pioneering contributions to unlocking the huge medical potential of monoclonal antibodies (mAbs). He devised techniques to ‘humanise’ mouse mAbs in the 1980s, and went on to create human mAbs from scratch in the test-tube. Therapeutic antibodies based on Dr Winter’s know-how comprise a significant proportion of all biotech products in clinical development, and several are already on the market for treatment of cancer, rheumatoid arthritis and infection.

Honours for others with MRC connections included: Professor Peter Harper – knighthood; Professor Alan Craft – knighthood; Dr Ruth Hall – OBE; Professor Annette Karmiloff-Smith – CBE; Professor Nairn Wilson – CBE; Professor Charles Downes – OBE; Professor Christopher Haslett – OBE; Dr Lesley Rushton – OBE; Professor Elizabeth Simpson – OBE; and Mrs Ruth Hunt – MBE.

Dr Ann Prentice and Professor Andrew Prentice are joint recipients of the American Diabetic Association Foundation’s Edna and Robert Langholtz International Nutrition Award. They are the first married couple to receive the prestigious award, which has been given four times since its creation in 1992. It recognises their outstanding contribution to nutrition science and particularly their commitment to a global approach. Ann is Director of MRC Human Nutrition Research and Andrew heads the International Nutrition Group at the London School of Hygiene and Tropical Medicine and the nutrition research programme at the MRC Laboratories in The Gambia. His work focuses on the links between diet and disease in developing countries – in particular nutritional immunology. Ann researches nutrient requirements for bone health and is involved in projects studying pregnant and nursing women, children, adolescents and the elderly in both affluent and developing societies. Earlier this year, she was elected President of the Nutrition Society.

Professor Sir Richard Peto has been awarded the Lord Cohler Gold Medal, presented by HRH The Duke of Edinburgh at the Royal Society for The Promotion of Health’s awards ceremony in June. The three-yearly award is for outstanding research leading to major medical advances. Sir Richard has made significant contributions to studies of the causes of cancer, in particular smoking, and large-scale clinical trials of treatments for conditions including heart disease, stroke, and cancer. He established and is now co-director of the Clinical Trial Service Unit at the University of Oxford, where he is Professor of Medical Statistics and Epidemiology, and is currently joint statistician for the MRC/British Heart Foundation Heart Protection Study.

Dr Geoffrey Raisman of the MRC National Institute for Medical Research is to receive the 2004 British Neuroscience Association (BNA) award for outstanding contribution to British neuroscience. The award recognises Dr Raisman’s research in plasticity and repair of the nervous system. BNA President Professor Richard Frackowiak will present the award at the annual BNA Christmas Symposium at The Royal Society in London on 15 December.

Nancy Rothwell, MRC Research Professor at the University of Manchester and MRC Council member, has been elected to the Royal Society. She is joined by Professor Martin Bobrow, who worked for many years within the MRC; Professor Graham Dockray of the MRC; and Professor Nicholas Wald, Director of the Wolfson Institute of Preventive Medicine; of the MRC/University of Bristol Centre for Synaptic Plasticity.

To find out more visit www.royalsoc.ac.uk.

Your feedback please

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

We hope you find Network interesting and informative, and are very keen to receive feedback from our readers. If you have any comments, including suggestions for new features that you would find useful, please let us know. Just email newsletter@headoffice.mrc.ac.uk

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