**FACING THE FUTURE**

UKCMRI will be one of the most significant developments in UK biomedical science in a generation. Its goal will be to understand the basic biology underlying human health, driving forward better treatment and prevention of the most significant diseases affecting people today.

**The time is right**

UKCMRI is being established at an auspicious time for medical research. New discoveries and technological advances have opened up countless opportunities to uncover fundamental biological mechanisms in health and disease.

Genome sequencing has given us new tools for understanding genetic contributions to health. Cell-based approaches are revealing how molecules function in living systems. Sophisticated animal models provide essential tools for understanding function at the whole-organism level. Bioinformatic approaches and computer modelling are becoming ever more powerful. Underlying all these advances are high-resolution imaging technologies that enable biological processes to be visualised in both space and time.

At the same time, while health and lifespan continue to improve in the UK, many challenges remain. More than one in four people will die from cancer. Heart and circulatory disease continue to blight many lives. Difficult-to-treat neurodegenerative diseases are growing in importance as the population ages. Many infectious agents remain serious threats to health.

The roots of these and all diseases lie in the altered functioning of cells or the way they interact in the body, and different conditions often have features in common. We therefore need a better understanding of biological processes in health, so we can understand why disease develops – and how it might be prevented or treated.

**A new institute**

UKCMRI has been founded by the Medical Research Council (MRC), Cancer Research UK, the Wellcome Trust and UCL (University College London). It will be based on the world-class research currently being carried out at the MRC’s National Institute for Medical Research, Cancer Research UK’s London Research Institute and in UCL’s laboratories. The Wellcome Trust has supported numerous innovative ventures in recent years, including the Wellcome Trust Sanger Institute, which sequenced one-third of the human genome.

In time UKCMRI will grow to house some 1500 staff, making it one of Europe’s largest centres of biomedical research. But the UKCMRI project is not simply about bringing together different research institutes on a single site. It has provided an opportunity to consider from scratch how a world-leading national research institute should be organised and run. UKCMRI will be an entirely new institute with a distinctive vision of how biomedical research should be conducted.

Size matters not for its own sake but because it creates the critical mass necessary for successful multidisciplinary research. Important biological questions need to be tackled using a range of methodological approaches spanning traditional disciplinary and disease-related boundaries. It also needs to
UKCMRI: SCIENTIFIC VISION AND RESEARCH STRATEGY

- UKCMRI’s principal focus will be the fundamental biological processes underlying human health and disease.
- Its research will be both broad and deep – covering all areas of disease and all levels from the molecule to the whole organism.
- It will take interdisciplinary and multidisciplinary approaches to biomedical research, drawing input from chemists, physicists, mathematicians, computer scientists, engineers and others.
- It will promote a dynamic working environment with constant refreshment of ideas and personnel.
- It will drive the development and roll-out of innovative new technologies, to open new avenues of research.
- It will nurture a culture in which clinical and commercial translation is valued as highly as discovery research.
- It will build extensive networks locally, nationally and internationally, with academia, industry and the public sector.
- It will play a national role developing technologies and training scientists and technical staff for the benefit of the wider UK biomedical science base.
- It will engage with the public to build strong relationships with local communities.

UKCMRI has ambitious objectives – a global outlook, a long-term perspective and the aim of generating advances in knowledge that will make a substantial difference to the health of many people.

Draw much more upon the physical sciences, including engineering, computing and mathematics. Progress is often linked to novel technologies, and technology development can be inspired by and drive the discovery process. UKCMRI will have excellent advanced core facilities and an emphasis on technology development and diffusion. Indeed, dynamism will be at the heart of UKCMRI. Most of its researchers will be in highly creative and productive mid-career phases, working in compact groups and establishing collaborations within the institute and externally.

UKCMRI will develop links with clinical centres, and foster a culture that values and promotes active translation. The aim will be to drive discovery through to application. UKCMRI will blur the boundaries between ‘academic’, ‘industry’ and ‘public sector’ research, promoting interactions and collaborations to accelerate translation and innovation. Clinical liaison and technology transfer will be both encouraged and valued.

A national asset
UKCMRI will maintain both an international outlook and a national perspective. It will be the hub of multiple local, national and international networks, aided by its proximity to numerous clinical centres, research institutions and London’s national and international railway terminals. Globally, it will become one of the world’s leading biomedical research institutions.

UKCMRI will play an important national role. It will recruit from a global pool of talent, providing an opportunity for researchers to develop their careers in the UK. Through collaborations, UKCMRI will build extensive links throughout the UK medical science base. A key role for UKCMRI will be to train scientists and technicians at all levels to the highest standards, preparing them for leadership roles in other biomedical research institutions within the UK.

In the longer term, UKCMRI will help to establish collaborative networks linking research across the country. In addition, it will act as a hothouse for new technologies that can be diffused to other sites, along with the expertise needed to exploit them.
UKCMRI

A singular vision

UKCMRI will be one of the most significant developments in UK biomedical science for a generation. It has ambitious objectives – a global outlook, a long-term perspective and an aim of generating advances in knowledge that will make a substantial difference to the health of countless people. It has behind it the UK’s main Government agency for biomedical research, the country’s leading cancer charity and, in the Wellcome Trust, Europe’s largest endowed charitable foundation.

To achieve its objectives, UKCMRI will need to be imaginative and to take risks. It will put its faith in researchers who have the best ideas, the ability to think creatively, the inclination to work collaboratively, and the drive to turn promise into reality.

In this way, UKCMRI will play a key role in creating the foundation of knowledge on which this century’s improvements in health will be based.

MRC NATIONAL INSTITUTE FOR MEDICAL RESEARCH

Founded in 1913, the MRC National Institute for Medical Research (NIMR) is renowned for its research in a diverse range of fields, including developmental and stem cell biology, structural biology, neuroscience, immunology and infectious disease. With existing strong links to UCL, NIMR is the largest MRC unit, housing almost 600 scientific staff, fellows and PhD students. Its Director is Jim Smith.

CANCER RESEARCH UK LONDON RESEARCH INSTITUTE

The Cancer Research UK London Research Institute (LRI) has an international reputation for its research in the basic biology of cancer. The institute’s broad research programme covers three areas – genomic integrity and the cell cycle, cell regulatory mechanisms, and tissues and tumour biology. The LRI was born out of the principal research facilities of the Imperial Cancer Research Fund, founded in 1902 as the first specialist cancer research charity in the UK, following the creation of Cancer Research UK in 2002. With some 500 scientists, the LRI is the largest core-funded institute in Cancer Research UK’s portfolio. Led by Richard Treisman, the institute operates at laboratories at Lincoln’s Inn Fields in central London and Clare Hall in Hertfordshire.

UCL

UCL is one of the world’s leading research universities, with nearly 2000 researchers in the biomedical sciences alone. UCL has great strengths in the physical sciences and mathematics, and promotes interdisciplinary interactions among its many institutes. UCL Medical School forms part of its School of Life and Medical Sciences, led by Professor Sir John Tooke.

THE WELLCOME TRUST

The Wellcome Trust is a global charity, committed to realising the full potential of biomedical research to improve health. It was created in 1936 on the death of Sir Henry Wellcome. The Trust has made a major contribution to science over the decades: supporting outstanding researchers and building world-class research environments in universities and other institutions. In addition to contributing to the cost of building UKCMRI, the Trust has expressed its intention to fund research within the institute.
AN INTEGRATED APPROACH

UKCMRI will champion an approach in which teams working in different disciplines collaborate to uncover fundamental biological mechanisms relevant to human health. Groups spanning the biological, clinical and physical sciences will share insight and techniques to capture a more complete understanding of life’s processes.

A deep understanding of biological phenomena now demands the application of multiple techniques at different scales, from the molecule to cell to whole organism.

Each approach has its advantages. But to obtain a complete picture, evidence from each level must be integrated. Moreover, research is often mutually dependent – one set of experiments raises questions that other techniques might be better placed to answer. Research programmes increasingly need to apply ever more diverse techniques, to develop new approaches and to be more interdisciplinary.

In recognition of this new era, UKCMRI will be founded and run as a multidisciplinary research centre without discipline-based departmental subdivisions. Researchers will be encouraged to share insight and strategy and to work towards common ends – a better understanding of basic biology and disease mechanisms. Interest groups will be set up to enable scientists with common interests to come together to share insights and plan activities.

Effective multidisciplinarity requires a critical mass of researchers, to ensure that multiple skills are represented to sustain core facilities supporting research programmes. The scale of UKCMRI is thus key to its vision, as is its ability to tap into high-quality research fields outside traditional biomedicine, such as the physical sciences, engineering, maths and computing through its links to UCL centres and other institutions.

Multidisciplinarity is also a guiding principle of the design of the UKCMRI building. It will be arranged to encourage informal interactions, with many common areas. Except when they need access to shared equipment, research teams will not be grouped according to areas of interest, again to promote mixing and exposure to alternative ways of thinking.

To achieve this vision, individuals will need to be able to expand their ability to communicate with others.
scientists from other disciplines, and be ready to develop their skills and their appreciation of the potential of novel technologies. Development of researchers – at all levels from graduate student upwards – will be a high priority. With translation and human applicability also vital, non-clinical researchers will receive training in human biology and pathology, so they can appreciate the clinical implications and applications of their research, as well as the special characteristics of experimental medicine.

To further stimulate collaborations, a programme of visiting fellows will be established, to bring in individuals with fresh ideas, insight and techniques, and to lay the foundations of longer-term collaborations.

**Technological innovation**

Scientific progress is intimately linked to the development of new technologies, which can greatly accelerate the pace of research and open up fruitful new areas of study. Technological innovation will lie at the heart of UKCMRI, with core facilities providing a central resource to facilitate research across the institute.

The interaction will be two-way, as emerging technologies developed in individual labs can be refined in core facilities and then rolled out for wider use – in UKCMRI, other UK biomedical research institutions and around the world.

**Translation as standard**

Although discovery will lie at the heart of UKCMRI, it will be discovery with a purpose – to
True multidisciplinarity requires a critical mass of researchers, to ensure that multiple skills are represented and that core facilities are established to support research programmes.

By encouraging interactions between basic and clinical scientists – and with a proportion of researchers being clinically trained – translational potential will be firmly embedded within UKCMRI’s research programmes. Extensive links with local clinical centres will help to define research priorities and also provide a route through which clinical application can be progressed. UKCMRI will not itself house patient facilities, but a wealth of well-equipped specialist centres exist within a short distance.

With application one of the core principles of UKCMRI, technology transfer will be a fully integrated activity. UKCMRI researchers will work closely with the existing technology transfer bodies of the founding partners and the centre will also have its own technology transfer staff. UKCMRI will also establish links with pharmaceutical and biotech sectors, to provide additional routes by which research can be taken forward. An industry ‘club’ will be established to increase exposure to translation and innovation, and a seminar series devoted to clinical, technological and commercial development of research will be organised. As well as visiting fellows from academia, industry researchers will work on secondment within the centre.

Most importantly, clinical translation and technology transfer will be seen as valued activities with equal prestige to discovery research, to ensure that application permeates the culture of UKCMRI.
Progress in biomedical research is rapid, so UKCMRI’s research programme will not be defined in detail until closer to its opening in 2015. Nevertheless, the research being carried out in the founder institutes, together with existing medical priorities and emerging scientific opportunities, means that some general comments can be made even at this early stage. The medical drive will reflect burdens of disease in the UK and throughout the world. Cancer will naturally be a strong focus. So too will be circulatory conditions such as heart disease and stroke – with cancer, the UK’s biggest killers – as well as infections and conditions linked to an overactive immune system. Diseases of the nervous system, particularly those of later life, are likely to figure strongly. Less common disorders may also be studied, as they often generate insights of more general importance.

**SCIENTIFIC OPPORTUNITIES**

While medical needs provide the ultimate driver of research, UKCMRI’s principal aim will be to generate new insights and knowledge about the biological mechanisms controlling cell, tissue and body function. The emphasis will be on integrative, systems-led approaches to unravel the interacting networks of genes, molecules and cells underpinning living processes. With this knowledge comes the potential to manipulate cellular processes to tackle the root causes of disease. UKCMRI’s scientific focus will include:

**Genetics and the genome:**

Sequencing of the human genome and those of model organisms such as the mouse have transformed biomedical research. The search for genes affecting human disease has borne rich fruit and the focus now is on identifying their physiological functions, finding ways in which their activity might be modified for therapeutic ends, and understanding the impact of variation in these genes on health.
Neurons and the nervous system: A breakdown in neuronal function is characteristic of many of the most challenging diseases, from neurodegenerative conditions such as Alzheimer’s disease and motor neuron disease to behavioural disorders such as schizophrenia, depression and autism. These conditions remain poorly understood, hindering the development of new treatments.

Infections and the immune system: Many pathogens remain difficult to tackle – including highly variable viruses, antibiotic-resistant bacteria and the evasive malaria parasite. Moreover, the immune system that defends the body is also the cause of some diseases, from allergies to autoimmune conditions.

Cell biology: Most diseases arise from the altered behaviour of cells and how they interact with one another, cancer being the most obvious example. Great strides are being made in understanding the complex intracellular networks that control cell behaviour, including division and migratory properties, and how these are influenced by external signals.

Stem cells, developmental biology and regenerative medicine: Progress is being made in understanding how stem cells generate a constant supply of new cells and how the fate of these cells is controlled during development and in later life. This raises the exciting possibility of generating new cells to replace damaged tissue, feeding into the emerging field of regenerative medicine.

While medical needs provide the ultimate driver of research, UKCMRI’s principal aim will be to generate new insights and knowledge about the biological mechanisms controlling cell, tissue and body function.
TECHNOLOGIES AS FACILITATORS
Key to UKCMRI’s success will be the development and rapid adoption of innovative new technologies. It is too early to make firm predictions, but some likely applications can be envisaged:

Model organisms: The ability to engineer precise genetic changes into well-characterised models is generating a wealth of data on the functions of molecules and cells in the living body. Particularly exciting is the growing ability to explore aspects of human biology, such as immune system function, in animal models.

Stem cell manipulation: Stem cell biology is a particularly dynamic area of biomedical science. Reprogramming of adult cells to create induced pluripotent stem cells is generating a limitless supply of cells for study, including cell lines derived from patients with particular medical conditions.

Imaging: The ability to follow biological processes continuously, in real time, is transforming our understanding of living systems. The interdisciplinary nature of UKCMRI will allow chemistry, computing, physics and engineering input into the development of imaging technologies, to provide unprecedented insights into biology.

Chemical biology: As well as genetic manipulation, chemical probes can be used to interfere with biochemical pathways, to assess their role in biological processes. UKCMRI’s interdisciplinary links will allow increasingly sophisticated probes to be developed, thereby expediting the development of new drugs.

Systems biology and mathematical modelling: While ‘wet’ biology will underlie much of UKCMRI research, computer-based approaches will draw upon advances in systems biology and mathematical modelling.

Synthetic biology: The application of engineering principles is opening up increasingly sophisticated forms of genetic engineering, in which different cellular components can be put together in precise combinations to build biological systems with specified and desirable characteristics.

IMAGES
Top left: Structure of an influenza neuraminidase-diabody complex.
Top right: Neuropeptide receptors in the brain.
WHERE PEOPLE DRIVE INNOVATION

UKCMRI will be founded on the principle that people come up with the ideas, make the conceptual leaps and have the creative insight to advance medical science. UKCMRI will provide the framework to enable outstanding researchers to develop themselves and their research for extended periods before moving on to leadership positions in the UK or elsewhere.

UKCMRI will be a science-led institution, recognising that science is a human endeavour that relies upon the creativity and effort of individuals. It will be set up to empower its researchers, enabling them to focus on research, develop their skills and follow ideas for extended periods, and thereby fulfil their potential while contributing to the success of the institute.

UKCMRI will select from a global pool of scientific talent, as well as the best from the UK. It will recruit only the most able researchers with the potential to make significant contributions in the future.

Its researchers will be given long-term support, generous resources, access to core facilities, unrivalled training opportunities and mentoring support from senior colleagues. With this backing, they will be able to tackle ambitious, long-term projects that will generate significant advances in knowledge.

Most importantly, UKCMRI will be brave and imaginative in its appointments, recognising that the unusual candidate with the unorthodox ideas may be the one who has most original insight and the greatest likelihood of success.

Training opportunities

Researchers at UKCMRI will be in an environment of constant professional development. Formal training will be delivered through a four-year PhD programme and clinical PhD programme, along the lines of those pioneered by the Wellcome Trust. These will enable young scientists to spend time in a range of UKCMRI labs during their training before choosing a final lab and supervisor for their PhD project.

Scientists without a clinical background will undergo training to familiarise them with the key aspects of human biology and pathology, to encourage greater focus on the translatability of their research.

Researchers will also have an opportunity to learn from visiting fellows and industry scientists who spend short periods at UKCMRI to

IMAGES

Left: Exploring gene expression in cells of the immune system at NIMR.
advance their own research and enrich the institute’s environment. More generally, UKCMRI will develop a culture of support, with senior staff committed to active mentoring of their junior colleagues.

Particular attention will also be paid to the career needs of specialist technical staff. Junior and senior positions will be available. In keeping with its role as a national centre, UKCMRI will develop integrated training programmes to train a national workforce of technical specialists, as well as offering specific training in particular technologies for individuals.

With UKCMRI’s emphasis on constant refreshment of ideas and personnel, it is likely that most research group leaders will be at the institute for perhaps only a third of their careers. This period is likely to be instrumental in laying the foundations of their future scientific achievements. Teams will deliberately

UKCMRI will be brave and imaginative in its appointments, recognising that the unusual candidate with the unorthodox ideas may be the one who has most original insight and the greatest likelihood of success.

be kept small so focus can be maintained on research rather than management and administration. Research group leaders will be encouraged to make their reputations at UKCMRI and then be supported in their career transitions to other major institutes. It is expected that many will be of a quality to move on from UKCMRI to take on leadership roles elsewhere in UK biomedical research – reinforcing UKCMRI’s national role in training the next generation of scientific leaders.

The focus on individuals will extend to the highest positions. UKCMRI will be led by a dynamic and inspiring Director with a world standing in biomedical research, assisted by a small leadership group of senior staff with international reputations.

With the emphasis on a flexible and dynamic workforce, senior staff will continually search for the brightest and the best potential new recruits. With the scope of UKCMRI’s research being so broad, researchers could be recruited from almost any area of biomedical science, allowing recruitment of the best scientists available at a particular time.
THE UKCMRI SCIENTIFIC CAREER STRUCTURE

Central to the UKCMRI scientific vision are three interlinked aims: to carry out the highest quality research to support the UK biomedical research endeavour; to maintain the institute’s scientific vigour by continuous renewal of its research interests and skills; and to train and develop future scientific leaders.

The UKCMRI scientific career structure will therefore aim to develop world-class researchers, many of whom will go on to hold leadership positions in biomedical research institutions in the UK and across the world. One measure of UKCMRI’s future success will be that a high proportion of its alumni hold such positions.

A majority of UKCMRI research group leaders will be joining the institute to establish their own independent research programmes after a period of postdoctoral research. To enable its scientists to develop world-class research programmes attacking important biological questions pertinent to human health, UKCMRI will provide substantial long-term core support over a period of about 12 years, as well as a strong mentoring programme.

The UKCMRI group leader career structure will include the following:

• An initial research period of six years, towards the end of which the scientific programme will be subjected to external peer review. The review will assess whether the research programme is of high quality and is making significant impact internationally.

• Subject to the success of the initial review, an individual will progress to senior group leader status, and core support will be renewed for a further six years.

• At the end of this second six-year period, most group leaders will have become established as international leaders in their fields and will be expected to progress to scientific leadership positions in other institutions. UKCMRI will cultivate appropriate external relationships to facilitate such transitions, particularly within the UK. The group leader mentoring programme will be used to ensure that career transitions are made smoothly.

• Long-term group leader positions will become available at UKCMRI from time to time and recruitment for these positions will be on a worldwide competitive basis. Group leaders in the ‘six plus six’ career pathway will be free to apply for these positions.
UKCMRI is in the enviable position of being located in the centre of one of Europe’s leading academic cities, as well as one of its most diverse and dynamic. It will make a positive impact in the immediate area, within London more broadly, and across the UK as a whole.

London has a rich diversity of academic centres and clinical facilities. Many are already associated with UCL, but UKCMRI will also forge relationships with other institutions beyond its founding partners. Many potential partners are within easy walking distance. Transport links in London provide ready access to those not on its doorstep.

Further afield, the UK’s national rail network makes UKCMRI accessible to most of the country’s leading academic centres. Its location next to St Pancras International provides rapid access to European centres, while London’s international airports are within easy reach, providing gateways to Europe, North America and the rising academic centres of Asia.

Another near neighbour is the British Library, with which UKCMRI will work to develop bioinformatic and other information resources of value to the wider biomedical research community.

**PERFECTLY POSITIONED**

UKCMRI is ideally placed as a hub of local, national and international networks. As well as being a substantial centre in its own right, it will also maintain wider influence as a flagship and asset for UK biomedical science more generally. Its physical space will provide opportunities for workshops, conferences and other events, while outreach activities and visitor space will provide a means to engage with local communities.

**The UKCMRI building**

The UKCMRI building will be specifically designed to promote interdisciplinary working and to encourage collaboration. Laboratories will be grouped around communal space, with coffee and restaurant facilities for the entire centre. Laboratory space will be kept as open as possible; it will also be adaptable to allow conversion to new uses. UKCMRI will include conference and workshop facilities, enabling it to host large international meetings as well as more informal small-scale workshops. In addition to a 450-seat auditorium, it will include seminar rooms and teaching laboratories, suitable for hosting a wide range of training courses and events.

**IMAGES**

Left: A computer-generated view of the Midland Road entrance to UKCMRI.

Right: View at the corner of Brill Place and Ossulston Street.
**Open doors**

UKCMRI’s research will have the potential to touch many people’s lives, and it is important that its work is carried out with both public awareness and approval. Public outreach and community engagement will therefore be an important component of its work.

UKCMRI will be housed in a landmark building and will contribute to the regeneration of the area around King’s Cross and St Pancras – already becoming a desirable place to work, live and socialise, with many cultural and intellectual attractions.

The building will be open to the public, with creatively developed visitor spaces drawing on a further aspect of multidisciplinarity – a creative fusion of science, medicine, the arts and humanities.

Alongside these stimulating and entertaining diversions, the centre aims to establish a wider educational programme, opening up its facilities to schools across London and beyond, to bring young people into closer contact with biomedical research. It will host school visits, organise practical demonstrations and other activities, and offer summer placements for students who are considering a career in science.

The development of the site, and the planning of visitor space and programmes of activities, is being and will be carried out with input from local residents, community groups and other interested parties, to ensure they have a chance to shape planned developments. The building is planned to form an integrated part of the local environment, hosting community events as well as ground-breaking research.

Various ways in which UKCMRI can support the local community...
are being discussed. The building will offer imaginative ways to engage local communities and promote healthier lifestyles. It is being designed to high levels of energy efficiency to reduce power usage and recycle energy.

At the heart of UK biomedical research
Physically and conceptually, UKCMRI will be at the heart of biomedical research in the UK. As well as generating important findings and driving forward the translation of research, it will be a site to which many kinds of researchers will gravitate, for a variety of reasons and for varying periods.

Some may be drawn by a particular course or conference, others by the chance to learn a new experimental technique. Some may develop lasting collaborations with UKCMRI researchers, or take up the opportunity to become visiting fellows. For an aspiring researcher, it will be seen as the ideal location in which to develop a career.

In addition, the emphasis on personal development, and need to maintain a flexible and diverse workforce within UKCMRI, will lead to a constant stream of researchers with additional skills, experience and contacts able to move into other parts of the UK biomedical science infrastructure. There they can continue to develop their career and research, and thereby contribute to the long-term success of biomedical research in the UK.
The Medical Research Council (MRC) is a publicly funded organisation dedicated to improving human health through world-class medical research.

For almost a century, the MRC has been a driving force behind advances that have transformed medicine and improved the health of millions of people in the UK and around the world. The MRC supports research across the biomedical spectrum, from fundamental, lab-based science to clinical trials, and in all major disease areas. It works closely with the NHS and the UK Health Departments to give a high priority to research that is likely to make a real difference to clinical practice and the health of the population.

The MRC invests in world-class scientists. It has produced 29 Nobel Prize winners and sustains a flourishing environment for internationally recognised research. It focuses on making an impact and provides the financial muscle and scientific expertise behind medical breakthroughs, including the antibiotic penicillin, the structure of DNA and the lethal link between smoking and cancer. Today, MRC-funded scientists tackle research into the major health challenges of the 21st century.

The MRC’s mission is to:

• Encourage and support research to improve human health.
• Produce skilled researchers.
• Advance and disseminate knowledge and technology to improve the quality of life and economic competitiveness of the UK.
• Promote dialogue with the public about medical research.

www.mrc.ac.uk

Cancer Research UK is the world’s leading charity dedicated to cancer research, supporting the work of more than 4800 scientists, doctors and nurses across the UK.

Cancer Research UK carries out world-class research to improve our understanding of cancer and find better ways to prevent, diagnose and treat the disease in all its forms. The charity has been at the heart of progress that has seen survival rates double in the last 30 years. This work, which has helped to save millions of lives, is funded entirely by the public.

Much of its groundbreaking work is based in the laboratory, where its scientists are building an ever-growing understanding of cancer. It is also behind many important drugs – Cancer Research UK scientists and doctors have made significant contributions to half of the top 30 drugs used to treat cancer patients worldwide today.

Cancer Research UK also lobbies the Government to keep cancer at the top of the health agenda and runs high-profile health campaigns to help people understand more about cancer and the steps everyone can take to reduce their risk of developing the disease.

Cancer Research UK’s London Research Institute (LRI) has an international reputation for its basic cancer biology research and has made significant breakthroughs in this area. The LRI employs more than 550 staff and students in 50 different research groups across two sites in London and Hertfordshire. The LRI also has a strong academic programme and is committed to training the next generation of world-leading scientists. LRI scientists have won many international awards; 11 of its group leaders are Fellows of the Royal Society, three have received knighthoods and two are Nobel Laureates.

Together with its partners and supporters, Cancer Research UK’s vision is to beat cancer.

www.cancerresearchuk.org

The creation of UKCMRI has been made possible by an innovative partnership between a UK Government funding agency, two charities and a leading university. The MRC, Cancer Research UK, the Wellcome Trust and UCL are individually recognised for their achievements in funding or carrying out ground-breaking biomedical research. By joining forces and coordinating activities at UKCMRI, the partners are ensuring that even more will be achieved in the future.
The Wellcome Trust is a global charity dedicated to achieving extraordinary improvements in human and animal health.

The Wellcome Trust supports the brightest minds in biomedical research and the medical humanities. Its breadth of support includes public engagement, education and the application of research to improve health. It is independent of both political and commercial interests.

The Trust’s independence enables it to take a flexible and long-term view. It can also move rapidly to grasp emerging opportunities as they arise. The Trust adopts a catalytic and transformative role in driving forward biomedical research, and it works with a wide variety of partners to maximise the value of its funding.

The Wellcome Trust supports diverse activities that span basic, clinical and public health research, technology transfer, medical humanities and public engagement. This gives it an unparalleled breadth of vision – bringing multiple perspectives to bear on key health challenges and setting advances in biomedicine within their broader historical and cultural contexts.

The Trust’s funding philosophy centres on supporting and developing the very best researchers, and giving them the resources that they need to undertake research of the highest quality. It strives to be bold and adventurous, nurturing creativity and innovation and backing ambitious initiatives.

The Wellcome Trust is a major funder of research in the UK and in low and middle income countries. It helps to create world-class research environments in the locations in which it funds, and is a prominent advocate for research and health. The Trust works to shape the global research agenda and to influence policy at national and international levels.

www.wellcome.ac.uk

UCL (University College London) is London’s global university – a research and teaching powerhouse in the heart of one of the world’s most dynamic cities.

Founded in 1826 as a radically different university, UCL helped to open up English higher education for the first time to people of all beliefs and social backgrounds.

Today, it is one of the world’s leading multidisciplinary universities, with 8000 staff and 22 000 students from 150 countries engaged in world-class teaching and research. Ranked fourth in the world in the 2009 Times Higher Education–QS rankings, no fewer than 21 Nobel Laureates have come from the UCL community.

While UCL is global in its reach, it is also local in its focus. Staff and students work extensively in the local community of Camden and it is the sponsor of an Academy school opening in the borough in 2011.

The UCL School of Life and Medical Sciences is one of Europe’s largest and most productive centres for biomedical science. Focused on the translation of research into solutions to the world’s major problems, UCL works across the disciplines and with partners all over the world – whether it is leading the search for an HIV vaccine or developing the clinical use of stem cells in heart disease, blindness and spinal cord repair.

UCL joined forces with its teaching hospitals in 2008 to establish UCL Partners, the largest academic health science partnership in Europe. It brings UCL together with Great Ormond Street Hospital for Children NHS Trust, Moorfields Eye Hospital NHS Foundation Trust, Royal Free Hampstead NHS Trust and University College London Hospitals NHS Foundation Trust. By pooling resources and expertise, researchers and health practitioners are enabling new discoveries in basic science to be translated into treatments more quickly.

www.ucl.ac.uk

IMAGE
View from Midland Road looking south.
UKCMRI SCIENTIFIC VISION AND RESEARCH STRATEGY

This document is a summary of discussions and recommendations of the UKCMRI Science Planning Committee, chaired by Sir Paul Nurse, which was set up to advise the founding partners on the scientific vision and research strategy for the institute.

The Science Planning Committee includes many of the world's leading figures in biomedical science, as well as representatives from the founding partners. The founding partners would like to thank the members of the Science Planning Committee, as well as individuals who contributed to a Horizon-Scanning Workshop or provided input in other ways, for their time, energy and insight during the development of the scientific vision and research strategy.

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COVER IMAGE
Computer-enhanced and coloured image of a human iris.
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