department for
culture, media
and sport

DCMS Does Science

Highlights from the launch of the DCMS Science and Research Advisory Committee (SRAC)

January 2010

improving
the quality
of life for all

Our aim is to improve the quality of life for all through cultural and sporting activities, support the pursuit of excellence, and champion the tourism, creative and leisure industries.

Forewords

Science and engineering are essential to robust policy making. They increase and test our understanding of issues, help us think about the future, and facilitate the development of practical solutions to problems.

One of my roles as the Government Chief Scientific Adviser is to ensure that the UK Government has access to, and uses, the best science and engineering advice. Strong scientific leadership within departments combined with independent expert advice and challenge are fundamental, in my view, to achieving this.

The presence of Chief Scientific Advisers (CSAs) in all main science-using departments has been a fundamental step forward. Departmental CSAs, working collectively with other analytical disciplines and with departmental boards and ministers, work to ensure that robust, joined-up evidence is at the core of decisions within departments and across government.

Scientific Advisory Committees and Science Advisory Councils across government provide departments with independent expert advice and challenge on the management and use of their science and research.

I welcome the creation of the Department of Culture, Media and Sport's Science and Research Advisory Committee. I believe it will provide a formidable resource for policy makers in the department, who can draw from a wealth of independent expertise in areas such as heritage, conservation and digital media technology to name a few. I am confident it will support the department and provide invaluable guidance, challenge and advice on developments in science and engineering and their implications across the department's policies and priorities.

Professor John Beddington
Government Chief Scientific Adviser

Science has a key role to play in promoting excellence across all of the DCMS sectors, and examples of this in practice already abound.

In the media sector, December 2007 saw the successful launch of the BBC iplayer which has changed the ways people can access both television and radio.

Meanwhile, advances in environmental archaeology have aided research, for example at Silbury Hill in Wiltshire, where they have helped to shed new light on life in the Neolithic age.

Within the heritage sector, expansion of our understanding of the environmental effects of light, humidity, dust and so forth on a variety of materials has also expanded our ability to balance preservation with public access, such as in the case of St Fagans National History Museum (National Museums of Wales) where the entire contents are on open display.

And in sport, the UK Sport Research and Innovation team are promoting the use of research and innovation to enhance the performance of British athletes in 2012 and beyond.

With the launch of SRAC, we are formalising our recognition of this important relationship and highlighting the role of excellent science and research more clearly within DCMS.

In addition, I hope that it will help us to understand the implications of wider government policy on science in the DCMS sector.

As such, I am delighted that we are producing a record of this exciting event to ensure that the key points will be of benefit to a wider audience.

Margaret Hodge MBE MP
Minister for Culture & Tourism

This publication marks the launch of the DCMS Science and Research Advisory Committee, an exciting new step in recognising the importance of science within the fields of culture, media and sport.

When the report from a Review of Science in Government Departments in 2004 recommended that DCMS appoint a Chief Scientific Advisor, I stepped into the role on a temporary basis to be followed by the permanent appointment of Anita Charlesworth.

During my time in this role, a report was produced which recommended the setting up of a Science and Research Advisory Committee, which is why I am especially pleased to have been able both to host the launch and chair the inaugural meeting within the inspiring setting of the new Darwin Centre at the Natural History Museum.

The day was very well-attended with experts from across our sectors coming together to discuss the role science has to play and to set an agenda for future work. The board meeting which followed was the first of many, and I very much look forward to being able to report on our work in future years.

Dr Michael Dixon
Director, Natural History Museum

Introduction

The DCMS Science and Research Advisory Committee (SRAC)

The DCMS portfolio covers a wide range of areas which rely upon scientific, engineering and technology expertise. Launched in October 2009, the DCMS Science and Advisory Committee (SRAC) aims to identify those scientific issues that now or in the future will have the greatest impact on DCMS sectors, understand their implications and ensure that culture, media and sport in the UK are best placed to benefit from developments in science, technology and engineering.

Specifically, SRAC's objectives are to:

- provide Ministers, senior DCMS officials and, through the DCMS Advisory board, the Department's sponsored bodies with advice on the implications of developments in science and technology for the department's policies and priorities;
- identify the potential impact of wider government policy on science in the DCMS sectors;
- identify generic scientific issues which will have an impact across several DCMS sectors and share practice.

How the SRAC will operate

The SRAC will meet quarterly, give an annual presentation to the DCMS Advisory Board, and present a report on science, technology and engineering issues to the Secretary of State every three years. A set of subject-specific temporary working groups, consisting of relevant members of the SRAC and other experts, will be set up to address the key issues identified by the SRAC.

The aim of working groups will be to articulate the DCMS stance on key issues and make recommendations to the SRAC on any actions for DCMS to address, for example, commissioning research, consultations, and legislation.

Background

The SRAC emerges from a drive by Government to ensure closer and more effective links between science and policymaking. Following a 2003 Review of Science in Government Departments, the DCMS was selected as the first department to undergo specific review. Completed in 2004, that review's report made 21 recommendations including the need for the DCMS to appoint a Chief Scientific Adviser (CSA).

Following the appointment of Dr Michael Dixon as part-time CSA and his subsequent report, Anita Charlesworth was appointed as Chief Analyst and CSA to the DCMS in September 2008. In his report, Dr Dixon had also recommended the setting up of a Science and Research Advisory Committee (SRAC) to provide advice and input on the full range of scientific, engineering and technology issues covered by DCMS' remit. Setting up the SRAC has been one of Ms Charlesworth's first tasks.

SRAC launch event

The SRAC launch was held at the Natural History Museum on 28 October 2009 with more than 50 academics, politicians and specialists in culture, media and sport including the Rt Hon Margaret Hodge MP, the Government Chief Scientific Adviser, Professor John Beddington and the DCMS Chief Analyst and Chief Scientific Adviser, Anita Charlesworth present.

The aim of the launch event was to identify and discuss the key scientific issues deemed most likely to have the greatest impact in both the short and longer term on the culture, media and sport sectors. Debate on these issues and their relative importance was intended to help inform the agenda of the SRAC, which held its first committee meeting immediately following the launch event.

In his opening presentation, Professor John Beddington gave a broad overview of the key scientific issues facing DCMS sectors. Speakers then considered some of these issues in greater depth. In the afternoon session, experts from DCMS sectors and Professor Rick Rylance from Research Councils UK offered insight into scientific issues from their sector's view point. In the closing sessions, Dr Michael Dixon, Chair of SRAC, and Anita Charlesworth highlighted the key themes that had emerged during discussions and identified some of the immediate priorities for the SRAC.

What this publication contains

Based on the presentations, discussions and Q&A sessions during the SRAC launch event, this publication:

- highlights the **key themes** discussed by speakers and launch attendees;
- summarises the main points from the **speakers' presentations**; and
- outlines the SRAC's **next steps**.

Key themes from the SRAC launch event

Some of the key themes emerging from speakers' presentations and discussions during the one day SRAC launch event were:

- Science, engineering and technology are vitally important to DCMS sectors. Closer working with the scientific community and greater understanding of today's key scientific issues and their potential impact on DCMS sectors will better inform the DCMS evidence base. A key priority for the DCMS is to ensure the appropriate use of independent science and engineering advice and expertise in policymaking.
- The key scientific issues that impact on DCMS sectors are climate change, population growth, food security, increasing demand for water and energy, poverty alleviation, increasing urbanisation, infectious and non-infectious diseases, counter-terrorism and biodiversity.
- DCMS sectors would benefit from adopting a more consistent approach to performance measures and indicators. This approach needs to demonstrate the value of DCMS sectors to society more effectively than at present. There is a clear need to incorporate longitudinal research that captures the longer term value of culture, media and sport to society into future approaches. In short, DCMS sectors need to be better able to make their 'case' to Government.
- DCMS sectors offer significant possibilities for moving Government agendas forward and more of this potential should be realised. For example, DCMS sectors are well placed to reach the public on issues such as healthy eating, exercise, the dangers of obesity, and the importance of taking personal responsibility for good mental wellbeing. In terms of inspiring young people in science, technology, engineering and maths – subjects which are essential to the UK's future competitiveness – DCMS sectors are particularly well placed. As an example, stimulating young people's interest in sport science is an excellent way to generate young people's enthusiasm in science more generally.
- The position afforded by DCMS sectors to engage with the public is excellent. Whether it is a museum exhibition such as the 'Prove It' climate change campaign at the Science Museum or the interest aroused by a successful UK Olympic athlete, DCMS sectors are ideally placed to reach public ears and ignite public enthusiasm. Solutions to many of the major global issues of the 21st century will require behavioural change among vast numbers of people. DCMS sectors are in a position to influence behavioural change.
- Both within and between DCMS sectors there is a need to work more closely together, sharing skills and resources, building partnerships and learning from one another. Establishing connections between disciplines and disciplinary approaches will be crucial in addressing the key challenges of the 21st century.

The presentations in brief

THE KEY SCIENTIFIC ISSUES FOR CULTURE, MEDIA AND SPORT

Speaker: Professor John Beddington, Chief Scientific Adviser to the HM Government

The key challenges for science and engineering in the 21st century

The key challenges we face are climate change, population growth, food security, increasing demand for water and energy, poverty alleviation, increasing urbanisation, infectious and non-infectious diseases, counter-terrorism and biodiversity. Looking at three of these challenges in more depth:

Climate change – the global impact of temperature rises

Scientific evidence increasingly highlights the adverse consequences of climate change:

- A 2°C rise in temperature would be problematic resulting in increased floods and storms, shortage of water resources, impacts on food production at low latitudes and greater depth of season permafrost thaw.
- A 4° C rise in temperature would be disastrous leading to a 16° C increase in the Arctic's temperature, substantial impact on food crops, extensive coastal flooding and around one billion additional people experiencing water scarcity.
- Greenland icesheet – the latest science suggests the situation may be worse than predicted with the possibility of the Arctic being near ice free by 2030.
- Ocean acidification – oceans are an important reservoir of carbon dioxide. Oceans will become warmer, more acidic, less diverse and over exploited. The impact of this increasing acidification is currently unknown.

Population growth and increasing urbanisation

By 2030 population growth and an increase in demand from wealthier "middle classes" in the developing world will place enormous strain on resources. Estimates suggest a 50% increase in demand for food and energy and 30% increase in demand for water. This increased demand will take place at a time when the world is struggling to mitigate against and adapt to the effects of climate change.

Public health issues

The two key public health issues are communicable diseases (e.g. SARS, Influenza, AIDS) and non-communicable diseases (e.g.obesity, cancer, cardiovascular, diabetes, mental health).

- Communicable diseases: History points to influenza as a significant health concern with, for example, 40-50 million deaths caused by the Spanish Flu outbreak in 1918. The 2009 outbreak of the H1N1 ('swine flu') virus highlights the extraordinary speed

with which diseases can now spread thanks to international travel. Only one month after the virus was identified in Mexico in April 2009, H1N1 had spread to 46 countries worldwide.

- Non-communicable diseases: Obesity is a cause of major and growing concern. When both parents are obese, a child has a high chance of being obese. In economic terms, the cost of the obesity crisis is estimated to reach nearly £40 billion a year in the UK by 2025.

Key issues for the DCMS

- The UK Government has welcomed a number of recommendations made by the Climate Change Committee including that the UK should reduce emissions of greenhouse gases by at least 80% by 2050. A key issue for the DCMS is not only how this sector can meet the challenge of **climate change** but also how it can help the Government deliver emissions targets. Possibilities include using DCMS channels, including large gatherings such as the 2012 Olympics and museums to spread positive media messages around climate change. For example, the Science Museums '*Prove It'* exhibition on climate change is a good example of leadership on communication and public engagement.
- In terms of health issues, how can science and engineering support the DCMS approach to **protecting the nation's health**? Possibilities include making use of the Olympic 2012 legacy, using sporting events to spread the message about being healthy, getting people (particularly children) involved in sport and play, and analysing the impact of the current positive media messaging around being healthy.
- The UK is one of the world leaders in science and engineering research producing 8% of world research publications from only 1% of the world population. To maintain this strength, we must ensure a steady flow of children into science, technology, engineering and maths (STEM) subjects. The DCMS can further this goal by **promoting awareness and expertise of STEM** via, for example, DCMS networks.
- The most important priority for DCMS (and associated bodies) is to ensure the appropriate use of **independent science and engineering advice in policy making**. This must include the social sciences.

CLIMATE CHANGE IMPLICATIONS FOR CULTURE, MEDIA AND SPORT SECTORS

Speaker: Professor Chris Rapley, Director of the Science Museum

About The Science Museum

The Science Museum was founded in 1857 with objects shown at the Great Exhibition held in the Crystal Palace. Today the Museum is world renowned for its historic collections, awe-inspiring galleries and inspirational exhibitions.

Climate change evidence

Coal, oil and gas may power the modern world but the carbon dioxide (CO_2) produced has now reached unheard of levels. While natural fluctuations in climate have previously led to CO_2 concentrations in the atmosphere of between 150 and 280 parts per million, current levels are 380 parts per million. By 2100 this is predicted to reach 650 parts per million.

Increased CO_2 concentrations lead to surface and ocean warming, expanding oceans and higher sea levels, retreating glaciers and stratospheric cooling. According to the Joint Science Academies' Statement in 2005, "There is now strong evidence that significant global warming is occurring. It is likely that most of the warming in recent decades can be attributed to human activities. This warming has already led to changes in the Earth's climate."

Key issues for the DCMS

- The key question to be addressed is how to maintain the world's energy supply in ways that do not release carbon dioxide into the atmosphere. Potential solutions lie in wind, wave, solar and nuclear power. It is not beyond human ingenuity to find technical solutions to the world's energy supply problem. Certainly, as the Stern Review on the Economics of Climate Change (2006) makes clear, the cost of inaction exceeds the cost of action. But this is a uniquely vexed question. While technological and economic solutions may be round the corner, the stumbling block is human behaviour. What is needed is **social/behavioural change**.
- The DCMS is well placed to '**walk the talk'** on climate change issues and lead from a position of **authority**. The Science Museum *'Prove It'* campaign is an example of a campaign the provides all the evidence needed to convince people of the reality of climate change. Interestingly, however, '*Prove It'* has not succeeded in changing the minds of those with entrenched views.

FORESIGHT REVIEW OF MENTAL HEALTH AND WELLBEING

Speaker: Professor Sandy Thomas, Head of Foresight, The Government Office for Science

About the Foresight programme

The UK Foresight programme is managed by the Government Office for Science and brings together key people, knowledge and ideas to help government think systematically about the future. Foresight uses the latest scientific and other evidence combined with futures analysis to tackle complex issues and help policy makers make decisions affecting the UK's future.

Foresight's work makes a critical contribution to meeting important challenges of the 21st century – such as food security, flooding, and obesity.

About the Foresight Mental Capital and Wellbeing Project

Foresight Projects are in-depth studies examining major issues 20-80 years in the future. Projects last for up to two years and draw on the advice of many hundreds of experts from across the world and from many diverse disciplines. Each project is sponsored by at least one Government department.

The Foresight Mental Capital and Wellbeing Project[1] aimed to produce a challenging and long-term vision for optimising mental capital and mental wellbeing in the UK in the 21st century – for the benefit of society, and for the individual.

[1] Foresight Mental Capital and Wellbeing Project (2008) Final Project report. The Government Office for Science, London.

Foresight Mental Capital and Wellbeing findings

The project considered mental capital and wellbeing in terms of children, wellbeing at work, mental ill-health and ageing population. The project points out that mental ill-health is estimated to cost England up to £77 billion a year and one in six adults suffer a common mental disorder at any one time. The UK's ageing population presents a further challenge. By 2030 the number of dementia suffers in the UK could double to 1.4 million. Over the same period the costs of dementia could treble from £17 billion to more than £50 billion per annum.

In addition to extensive evidence on mental capital and wellbeing, the project also produced clear cut 'signposts' for action. These ranged from improving diagnosis and treatment and addressing stigma and discrimination to targeting risk factors and strengthening those factors that are protective of a person's mental wellbeing. The project produced its own '5 a day for mental wellbeing' encompassing the following five suggestions: connect, be active, take notice, keep learning and give.

Findings and recommendations from the project are making a clear impact on Government policymaking. This ranges from its contribution to the Government Dementia and Ageing Population strategies through to a clear policy impetus to promote positive mental health.

STEM SKILLS IN THE COMMUNITY

Speaker: Pat Langford, Director of Programmes, STEMNET

About STEMNET

STEMNET creates opportunities to inspire young people in Science, Technology, Engineering and Mathematics (STEM).

With funding from the Department for Business, Innovation, and Skills (BIS) and the Department for Children, Schools, and Families (DCSF), STEMNET's goal is to be a recognised leader in enabling all young people to achieve their potential in STEM by:

- Ensuring that all young people, regardless of background, are encouraged to understand the excitement and importance of science, technology, engineering and mathematics in their lives, and the career opportunities to which the STEM subjects can lead;
- Helping all schools and colleges across the UK understand the range of STEM Enhancement & Enrichment opportunities available to them and the benefits these can bring to everyone involved;
- Encouraging business, organisations and individuals wanting to support young people in STEM to target their efforts and resources in a way that will deliver the best results for them and young people.

What we do

STEMNET works with community-facing organisations such as science centres, more than 1,800 employers and some 24,000 STEM Ambassadors in its bid to enthuse young people about STEM subjects.

Promoting STEM to all

Much of STEMNET's work is to challenge widely held negative stereotypes of those working in science, technology, engineering and maths and show instead how these subjects can increase young people's choice and chances. Current initiatives include:

STEM Ambassadors – this is a network of more than 24,000 young men and women working in science, technology, engineering and maths who volunteer to work with young people in schools and colleges to explain what they do and why they love it. These inspiring role models demonstrate the breadth, excitement and value of STEM careers in a way that can really open minds. The 'Leading Lights' photographic exhibition is currently showcasing some of the most inspiring young STEM role models and has been displayed in science festivals, hospitals, shopping centres, libraries and museums.

STEM Access Grants – this project has addressed under-representation in STEM by certain black and minority ethnic groups. Helped by funding, schools have set up STEM Clubs that involved parents and younger children.

Events – in August 2009 STEM Ambassadors brought 'science to the seaside' delighting and inspiring family audiences enjoying a day at the seaside. Many parents were amazed at how engaged the children were by the science in action.

Key scientific issues

- The DCMS can play an important role in **engaging the public** in STEM.
- Negative **perceptions** of those working in science, technology, engineering and maths and the conditions in which they work persist, but can be addressed through STEM activities.
- Inspirational **role models** – the STEM Ambassadors – are vitally important in challenging stereotypical views and helping young people understand the importance and excitement of STEM in their lives.

SCIENCE IN SPORT

Speaker: Dr Ken van Someren, Director of Science, English Institute of Sport

About the English Institute of Sport

The English Institute of Sport (EIS) is a nationwide network of sport science and sports medical support services, designed to foster the talents of elite athletes.

The UK's sport landscape

It's an exciting time for sport in the UK. The 2012 Olympics create opportunities for sport at all levels and for all ages. While the EIS aims to identify and support *elite* sportspeople, the inspiration provided by such athletes can be harnessed to increase public participation in recreational exercise.

The links between exercise and wellbeing are clear. Not everyone is capable of competing at high levels, but exercise can benefit everyone. One third of the population currently meets recommended exercise levels. The challenge is to inspire more people to achieve these levels.

Science in sport

The role of science in sport has developed rapidly in recent years. 'Sport science' first emerged as an academic discipline in the 1970s. The British Association of Sport and Exercise Sciences and the British Olympic Medical Centre were established in the following decade. In 2000 the Home Country Sport Institutes (including the EIS) were founded.

Sport science now plays a key role in athlete health (for example, reducing injury risks), performance (such as preparation and training guidelines) and technology (ranging from clothing and equipment to altitude chambers). Crucially, sports science has contributed to a better understanding of the impact of physical activity on health and the development of Government guidelines and recommendations on exercise.

Key scientific issues

- **Longitudinal research** is now required in order to understand the longer term issues surrounding sport, exercise, health and wellbeing.
- **Multi-disciplinary approaches** are required in the study of sport performance, exercise and health.
- While sport provides a model for basic sciences research and innovation, this science still attracts **limited funding**.
- Greater understanding is needed of potential applications of **molecular techniques** in sport.
- As many people are interested in sports, particularly young people, sports science is a particularly effective way of **engaging people** in the study of science more broadly.
- The Government aim is to see 2 million more people active before 2012, and remain so thereafter. Elite performance and the science which underpins this need to be harnessed in ways that **promote physical activity** among the general public.

MUSEUMS' SCIENCE

Speaker: Dr Michael Dixon, Director of the Natural History Museum and Chair, SRAC

About the Natural History Museum

The Natural History Museum is home to life and earth science specimens comprising some 70 million items within five main collections: botany, entomology, mineralogy, palaeontology and zoology. The museum is a world-renowned centre of research, specialising in taxonomy, identification and conservation. The Library contains extensive book, journal, manuscript, and artwork collections linked to the work and research of the scientific departments.

The role of museums

Museums in general aim to:

- protect important national assets ranging from collections to public buildings,
- facilitate scholarly research,
- educate and entertain visitors,

- help visitors interpret their place in the world,
- inspire and influence visitors,
- provide robust evidence of their own effectiveness.

Key scientific issues

The key scientific issues for museums fall within three broad topics:

Conservation of collections including how best to conserve the objects themselves, data about these objects and surrogate objects; establish the optimum storage and display conditions for collections; facilitate access to collections and determine how to pursue digitalisation when this cannot be funded from current Government resources alone.

Management of public buildings including how best to share information on environmental management and adapt frequently old buildings for modern usage, establish optimum storage conditions, find the best ways to manage energy consumption and carbon emissions, decide how to fund high capital, low ongoing resource projects and how best to encourage changed public behaviours and attitudes.

The case for museums' value and effectiveness has been less well made than it might. **Evidence of museums' effectiveness** needs to be collected that links closely to government targets and departmental objectives. Key questions need to be addressed including: Do museums currently present their case in the most compelling, evidence based way? Do museums use the right performance indicators and are these used consistently across the sector?

HERITAGE SCIENCE

Speaker: Dr Sebastian Payne, Chief Scientist, English Heritage

About English Heritage

English Heritage exists to protect and promote England's spectacular historic environment and ensure that its past is researched and understood.

The role of heritage science

England has a rich and varied cultural heritage ranging from buildings and archaeological sites to museum collections, libraries and archives. Heritage science helps us understand our heritage and our past better, and helps us take better care of it and bring it to life. For example, heritage is sometimes hard to see but science such as radar or image enhancement can help to find it or produce clearer images. Science can help us learn more about the past through, for example, the study of paint remnants. Heritage science is also important in understanding materials, how they decay and how best to conserve them.

Challenges facing heritage science

The heritage sector is fragmented and many smaller institutions have been losing capacity. At the same time, increasing rates of environmental change, including climate change, and increasing public interest and access, are adding to the sector's challenges and opportunities. Concern at this situation prompted the House of Lords Select

Committee for Science and Technology to enquire into the state of the heritage sector. The 2006 report called on the sector to create a national strategy covering buildings, archaeology, collections, libraries and archives. This strategic review will be completed by the end of 2009.

Key scientific issues

- People value heritage highly but more should be done to identify, assess, develop and demonstrate **the public benefit** of heritage. This is *not* just economic benefit, but social, educational and environmental benefit.
- Heritage science offers an exciting **bridge between the humanities and the sciences**. Building knowledge and understanding of both cultures is vital to underpin judgements about importance and significance, so that the right decisions are taken in protecting and preserving our heritage.
- Sustainability, public understanding and public benefit are all increased by learning how to decrease damage to our heritage while increasing access**. Building capacity and capability** are critically important in making sure that what we learn from research is used in real life. We need to develop **better ways to communicate research findings** to practitioners, and to develop practice skills. For example, evidence shows that lime mortar has sustainability advantages over cement mortar, but builders and home owners need to be made aware of this fact.
- Existing synergies and dialogue across the sector need to be developed, especially between practitioners and researchers. Researchers need to be more aware of the questions that matter most to practitioners who often feel that much of the research is of little practical benefit. **We need to work more closely together, sharing scarce skills and expensive resources, building partnerships and learning from one another**.

MEDIA AND SCIENCE

Speaker: Fiona Fox, Director, Science Media Centre

About the Science Media Centre

The Science Media Centre is an independent venture working to promote the voices, stories and views of the scientific community to the national news media when science is in the headlines.

Learning from two science stories

Two of the biggest science stories of the last ten years, GM foods and hybrid embryo research, appeared to share many similarities yet were played out very differently in the press. Exploring the different reporting of these two issues provides some valuable insight into the current and potential future relationship between science and the media.

GM Foods

When GM Foods hit the headlines in 1999, the best plant scientists were unprepared for the publicity, bewildered and unwilling to engage with the press. Funding agencies and the Government sat on the fence, giving no clear lead on the issue. Editors gave the story to political and consumer affairs reporters, not science reporters, to cover. Indeed,

over 80 per cent of articles on GM were written by non-science writers. Specialist journalists were not briefed on the science. The outcome for GM Foods was that the public said no to GM Foods.

Hybrid Embryo Research

Nearly a decade after the GM Foods debacle, the Hybrid Embryo Research story of 2008 achieved markedly different press coverage. First, the scientists were well prepared and well trained to talk to the media. Funding agencies and the scientific community were highly supportive of the scientists, who had previously briefed the media. Specialist science and health journalists were determined to write the story themselves and succeeded in writing 80 per cent of articles. The outcome was that the regulator approved the first two hybrid embryo research projects in 2008.

Key scientific issues

- The different handling of the GM and Hybrid Embryo Research stories by the press highlights both **the key role that science and health specialist journalists** can play in ensuring accurate, high profile reporting of science in the press as well as the importance of scientists **engaging with the media**. The positive news for science is that there are now more professional science press officers than ever before and the status of science specialists in the news room has never been higher.
- The **less positive news for science** is that, in the current climate, specialists are vulnerable to cost cutting. Moreover, editors and non-science reporters still make bad decisions on stories; more science press officers can merely mean more hype and scientists in government and industry are still not free to speak openly to the press.
- Current **issues to be addressed** include whether it is better for science to create its own media (e.g. ProPublica) or shore up traditional science journalism; whether non-specialist journalists should receive training in Universities and news rooms; how scientists can achieve better redress when they are misrepresented in the press; and how scientists in government and industry could be freed from political and commercial constraints.

CROSS-CUTTING ISSUES

Speaker: Professor Rick Rylance, Director of the Arts and Humanities Research Council and Member of the Research Councils UK Executive Group Membership

About Research Councils UK (RCUK)

Research Councils UK (RCUK) is a strategic partnership between the seven UK Research Councils. RCUK was established in 2002 to enable the Councils to work together more effectively to enhance the overall impact and effectiveness of their research, training and innovation activities, and contribute to the delivery of the Government's objectives for science and innovation.

The Research Councils

The UK's seven Research Councils are:

- Arts and Humanities Research Council
- Biotechnology and Biological Sciences Research Council
- Economic and Social Research Council
- Engineering and Physical Sciences Research Council
- Medical Research Council
- Natural Environment Research Council
- Science and Technology Facilities Council

The Research councils are non-departmental public bodies established by Royal Charter. They receive public funding, mainly via the Science Budget, and are accountable to Parliament, via the Department for Business, Innovation and Skills (BIS).

At £3 billion per annum, the Research Councils are the largest public funders of fundamental research in the UK. They invest £1.3 billion each year in UK universities.

While each Research Council has a specific mission, they share the following common objectives:

- to support basic, strategic and applied research,
- to support postgraduate training,
- to advance knowledge and technology and provide services and trained people that lead to social, cultural and economic impact
- to manage and develop large facilities.

In addition to funding research and developing capacity, other key areas of Research Council activity include knowledge transfer and promoting public engagement with research.

Framework for the future

Public investment in research ensures that the UK is able to compete in the global economy. The RCUK 'Framework for the Future' aims to cultivate the essential research and skills to provide the bedrock for the UK to have a productive economy, healthy society and contribute to a sustainable world. In these three mutually supportive areas, RCUK spans the full range of challenges facing society by drawing together world-leading interdisciplinary research programmes.

Current cross-council research programmes address the themes of energy, living with environmental change, global uncertainties, lifelong health and wellbeing, nanoscience and the digital economy.

The cross-disciplinary challenges currently emerging include: food security, building resilient economies and the nature of future society when communities are connected by globalisation, mobilisation and digitalisation.

Key cross-cutting issues

- Real world issues invite **multidisciplinary and not single discipline solutions**. For example, climate change is a technical and scientific problem but also a 'people problem' in that solutions will depend not only on technical advances but upon people's behaviour and their willingness to change behaviour. Hence science needs to be understood in relation to society.
- **Establishing connections** between disciplines and disciplinary approaches will be crucial in addressing the key challenges of the 21st century.

Next steps

Taking priorities forward

At the first meeting of the SRAC, committee members discussed the scientific priorities for the DCMS that had emerged during the launch event. Committee members agreed on the following three priorities:

- **Climate change** – as it would not be appropriate to look at climate change in its entirely, committee members suggested that the adaptation of buildings and open spaces in the DCMS sector, including listed buildings and heritage sites, could be a key area of focus. The aim would be both to reduce their negative impact in the present and of coping with climatic changes in the future.
- **Performance data and evidence** – the issue of how to measure success in this field, especially in light of the current lack of baseline measurements, was recognised as a key priority as was the need to share data more effectively and to generate high-quality, longitudinal data.
- **Health and wellbeing** – a focus on the ageing population and obesity was proposed, taking a multidisciplinary approach, and examining the barriers that currently prevent people from working together more effectively on these issues.

To move forward on these priorities, the SRAC agreed to set up working groups for each theme. These three working groups will produce scoping papers that identify gaps in knowledge and suggest the next steps for SRAC.

Further information:

English Heritage
www.english-heritage.org.uk

English Institute of Sport
www.eis2win.co.uk

Foresight
www.foresight.gov.uk

Natural History Museum
www.nhm.ac.uk

Research Councils UK
www.rcuk.ac.uk

Science Media Centre
www.sciencemediacentre.org

Science Museum
www.sciencemuseum.org.uk

STEMNET
www.stemnet.org.uk

Membership of the Science and Research Advisory Committee

Permanent Members

Who	*Title*	*Organisation*	*Reason*
Dr Michael Dixon	Director	Natural History Museum	Chair
Anita Charlesworth	Director, Evidence and Analysis	Department for Culture, Media and Sport	Strategic overview
Dr David Saunders	Keeper, Department of Conservation and Scientific Research	British Museum	Conservation; Public understanding of science; science funding; national perspective
Professor May Cassar	Director, Centre for Sustainable Heritage	Bartlett School of Graduate Studies, University College London	Conservation; public understanding of science; Sustainability
Stephen Hackney	Head of Conservation Science	Tate	Conservation
Richard Boulderstone	Director, eStrategy	British Library	Conservation, Public understanding of science, Digital issues
Chris Scull	Research Director	English Heritage	Heritage and Conservation, Materials Science

Permanent Members (continued)

Who	*Title*	*Organisation*	*Reason*
Nancy Bell	Head of Collection Care	The National Archives	Conservation, Public understanding of science
Sarah Staniforth	Historic Properties Director	The National Trust	Heritage and Conservation
Peter Keen	Director of Performance	UK Sport	Sports Sciences
Dr Ken van Someren	Director of Science	English Institute of Sport	Sport and Health
Dr Nigel Reeve	Head of Ecology	The Royal Parks	Ecology
Kim Shillinglaw	BBC Commissioning editor, Science and Natural History	BBC	Digital media technology
Dr Anthony Whitehead	Joint Head of Science in Government	Government Office for Science	Strategic issues
Professor Rick Rylance	Chief Executive	Arts and Humanities Research Council	Strategic issues
Dr Beatriz Garcia	Director	Impacts 08 – The Liverpool Model	Regeneration, Olympics
Professor Lorna Walker	Director	Lorna Walker Consulting Ltd	Sustainability, Health and wellbeing
Professor Michael Thorne	Vice Chancellor	Anglia Ruskin University	Research links, Collaboration, Skills

External fixed term members

The SRAC membership will be augmented by other external experts appointed for a fixed term to cover the specific issues identified as priorities by the committee.

We can also provide documents
to meet the specific requirements
of people with disabilities.
Please call 020 7211 6200 or
email enquiries@culture.gov.uk

Department for Culture, Media and Sport

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