bbsrc
biotechnology and biological sciences research council

ANNUAL REPORT & ACCOUNTS 2007-2008

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in pursuance of Schedule 1, Sections 2 [2] and 3 [3] of the Science and Technology Act 1965.

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Contents

This Annual Report covers the period from 1 April 2007 to 31 March 2008.

The Biotechnology and Biological Sciences Research Council (BBSRC), established by Royal Charter in 1994, is the UK's principal funder of basic and strategic research across the biosciences (www.bbsrc.ac.uk). It is funded primarily by the Science Budget, through the Department for Innovation, Universities and Skills (DIUS). Our mission is to support high-class science and research training, and to promote knowledge transfer in support of bio-based industries and public engagement in bioscience.

RESEARCH COUNCILS UK

BBSRC works collaboratively with its sister Research Councils through Research Councils UK (RCUK).

Chairman's statement

Dr Peter S Ringrose

During the year we have made further significant progress in delivering economic and social impact from the research we fund. First, we have made commitments to increase funding to support collaborative research with industry and through the Technology Strategy Board. Second, we are introducing new processes to ensure that both our grant funding and our support for training and skills development address scientific areas of priority to UK industry, as well as academic scholarship. Third, we are increasing support to enable scientists to commercialise the outputs of their research. Fourth, we have reviewed, and learned lessons from, current knowledge transfer activities and industry-academic partnerships in our sponsored institutes and in university departments, in order to develop increasingly effective translation.

At the end of this reporting period, in May 2008, it was a particular pleasure to welcome Ian Pearson MP, the Minister for Science and Innovation, and Professor Jackie Hunter of GSK (GlaxoSmithKline) to speak at 'Bioscience:Biomillions'. In this event we showed examples of the contribution that bioscience research makes to the UK economy and policy making. Mutual recognition of the symbiosis between excellent fundamental science and innovation, by Government, industry and the research community, is one of the best guarantees we have that the UK can maintain its world pre-eminence in bioscience.

Speakers at 'Bioscience:Biomillions' where we celebrated the achievements of around 50 researchers whose science has made a major contribution to innovation and public policy in recent years. From left to right: BBSRC Interim Chief Executive, Steve Visscher; Council member and Senior Vice President of GlaxoSmithKline, Professor Jackie Hunter; Ian Pearson MP, Minister of State for Science and Innovation; and BBSRC Chairman, Dr Peter Ringrose.

"Bioscience researchers in the UK have not only pursued excellent, world-class research, but they have also been active in ensuring that we all benefit from their efforts. In order to remain globally competitive and meet the future challenges of living within our environmental limits, it is vital that bioscience researchers continue to maximise the positive economic and social impacts of their research and activities."

Ian Pearson MP
Minister for Science and Innovation

International and national awards, as well as key scientific publications, are important indicators of the success of our science; and several examples are provided in this report. Sometimes it may be tempting to take the excellence of our research base for granted; such is the UK's track record. To do so would be unwise. This excellence is the foundation of all of our activities; and continuing to invest in and reinforce it remains our number one priority. We have increased support for activities that enable researchers in the UK to develop new research technologies, resources and modes of working that optimise their flexibility and generate new scientific opportunities. This includes more support for larger research teams and projects, for embedding systems and other multidisciplinary approaches, and for networking to build research capacity in emerging areas of new bioscience such as synthetic biology. We are also successfully evolving institute-based science to maintain key national capabilities and to achieve longer term sustainability, notably through science-led strategic mergers and more tightly focused programmes that deliver for both national policy requirements and world-class science.

Although my term as Chairman of BBSRC continues until April 2009, this will be my last Annual Report. I would like to record my thanks for the hard work of all of those who have served on the Council over the past years. Together we have addressed several very challenging areas. Scientifically, we have helped the UK to progress rapidly in highly competitive areas such as systems biology and the informatics and post genomics technologies. Strategically, we have re-focused institute-based bioscience and given a new impetus to its role in the UK science base. In all of these areas, we have been very ably supported by the BBSRC executive office in Swindon and the staff of the institutes and by the members of our boards, panels and committees.

I would like to record my thanks to Professor Julia Goodfellow who left BBSRC in August 2007. I also record my and the Council's gratitude to Steve Visscher who has very effectively led BBSRC since, including through the very challenging period following the FMD outbreak at Pirbright, and the complexities associated with ensuring that institute infrastructures and governance best support the science.

Dr Peter S Ringrose
June 2008

Steve Visscher, BBSRC Interim Chief Executive, Ian Pearson MP, Minister of State for Science and Innovation, and Professor Wayne Powell, Director Designate of the Institute of Biological, Environmental and Rural Studies, Aberystwyth University, at BBSRC's 'Bioscience:Biomillions' event in May 2008.

The Rt Hon. John Denham MP, Secretary of State for Innovation, Universities and Skills, officially opened the RCUK China Office with the Chinese Vice-Minister for Science and Technology, Mr Li Xueyong, as part of a special UK-China symposium in November 2007.

Humfrey Malins MP with Drs David Schley and Zhidong Zhang during his visit to IAH Pirbright as part of the Royal Society's MP-Scientist pairing scheme.

'Hope not Hype', the joint BBSRC/MRC touring exhibition on stem cell science was presented at the Cheltenham Science Festival in 2007.

Her Excellency Madame Fu Ying, Ambassador of the People's Republic of China, officially opened the new Meditrina, the newest Bioincubator building at the Babraham Research Campus. With her are (left to right): Richard Ellis, Chair EEDA (East of England development agency); Paul Whiteway, Head of International Sales, UKTI (UK Trade & Investmen); Professor Michael Wakelam, Director of Babraham Institute; Sir Robin Young, Chair East England International; Mr Wang Yonghui, Chairman of the Board of Guangzhou Xiangxue Pharmaceuticals Co.; and Dr David Hardman, CEO Babraham Bioscience Technologies Ltd.

The UK National Stem Cell Network was launched in 2007, with support from four Research Councils, including BBSRC which also provides media support.

Steve Killeen, Chair of the Environment Research Funders' Forum (ERFF) discusses how electricity can be generated from waste, at the BA Festival of Science in York. BBSRC took part in the event organised by ERFF, which showcased research by University of Birmingham scientists (see page 21).

Chief Executive's report

Steve Visscher

Five elements have been critical in shaping BBSRC's activities during the year. They are

- an extremely good allocation from the Science Budget with allocations rising by 22% over the three years to £471M in 2010-2011, under what was a tight fiscal framework, reflecting the success of UK biosciences in recent years. This has enabled us to pursue our priorities, for example, in Systems Biology, support for Tools & Resources and launch a new initiative in Bioenergy. We also plan for significant increases in collaborative research with industry and in skills development and training, whilst also maintaining the drive for a sustainable science base through providing 80% Full Economic Costing on grants;

- an increasing emphasis on identifying and evaluating the economic and social impact of our science in ways that will enable us to build on successful approaches and make a step-change in impact. Through interactions with the Technology Strategy Board and in our own academic-industry partnerships we have achieved greater focus around those areas of fundamental bioscience that address industrial priorities;

- strengthening national capabilities through the establishment, in May and March 2008, of major new integrated research centres in Edinburgh and Aberystwyth, through university mergers respectively with the Roslin Institute and part of the former Institute of Grassland and Environmental Research (IGER); and the re-focusing around strategic priorities at IGER North Wyke in partnership with Rothamsted Research;

- our response, both scientifically and organisationally, to the August 2007 outbreak of Foot-and-Mouth Disease from the Pirbright site shared by the Institute for Animal Health (IAH) and Merial Animal Health;

- increasing harmonisation of BBSRC's activities with those of other funders, most notably through Research Councils UK in cross-Council programmes of research, international partnerships, research careers development and public engagement; and operationally through the Shared Services Centre.

Taking forward our science

UK bioscience remains a world leader, in an increasingly competitive field internationally. We have made good progress on our top strategic priority, namely the development of multidisciplinary approaches to tackle major research challenges. These particularly involve using insights from the physical, engineering and computational sciences to provide the quantitative and predictive elements to drive systems based research and to provide the capability for scale-up to real-world applications. We have introduced measures to strengthen mathematical skills and resources within our research community, and are continuing to take this forward. We are also increasingly embedding social science perspectives in our programmes, most notably in sustainable agriculture and land use, and in the emerging area of Synthetic Biology.

Institute-based bioscience provides the UK with focused, long-term and, often unique, research facilities in nationally strategic areas such as land use and animal health. We are implementing new ways of funding institute research, through Strategic Programme Grants, rather than single core grants, to sharpen focus around national policy and scientific priorities; and we continued to work with Institute Directors and Governing Bodies to identify the best governance arrangements for each, that will provide optimal support and clarity of purpose for institute science. We have developed an outline agreement with the University of East Anglia (UEA) and the Institute of Food Research (IFR), for the future embedding of IFR within UEA. In parallel, a broader science vision is evolving which includes opportunities to build on relationships between the parties on the Norwich Research Park, one manifestation of which is a new strategic alliance on Earth and Life Systems between the John Innes Centre and UEA.

We have reaffirmed our commitment to the planned redevelopment of the Pirbright site of IAH. The expert reviews that followed the 2007 outbreak of foot-and-mouth disease from the Pirbright site gave us a unique opportunity to bring together insights from a range of perspectives. These have informed our ongoing discussions with Defra (Department for Environment, Food and Rural Affairs) to ensure that we learn the lessons from the 2007 incident, and find the most sustainable option for national capability in disease detection and prevention that will meet the scientific challenges of the next 20-30 years. In 2007, BBSRC commissioned an independent panel, chaired by Professor Sir John Beringer CBE, to advise on future funding, governance and risk management at IAH. In April 2008, BBSRC Council accepted the review and inaugurated actions on the most pressing recommendations, earlier than the report indicated. This includes taking responsibility for, and implementing as soon as possible, an unambiguous, single line of management and governance. We have established a small expert working group to review the Institute's current research portfolio, and to advise on issues raised in the review around possible relocation of research from its Compton site to Pirbright.

Professors David Hume of Roslin Institute and Elaine Watson of the Royal (Dick) School of Veterinary Studies Edinburgh. The Institute, including the former Neuropathogenesis Unit of IAH, moved into the University of Edinburgh as part of a new research centre within the College of Medicine and Veterinary Medicine. A new £57M building for the Institute, funded by BBSRC, the University and SAC is planned, to accommodate around 55 project leaders and 450-500 staff and students.

Increasing the impact of our science

We have worked with industry to develop how we harness top class research to meet strategic and generic needs of bio-industries – from animal physiology and structural biology for drug discovery, to predictive modelling to maintain crop yields, to microbiology to control livestock diseases, maintain food safety and combat hospital acquired infections.

We have increased the number of top rate responsive mode grants supported jointly with industry, and have identified priorities with the Technology Strategy Board where we have announced our intention to fund up to £34M to support high value knowledge-based industries in the UK.

A study of the economic impact of the Research Councils, published by PA Consulting Group in October 2007, identified how research translates into: development of human capital; business and commercial outputs; policy impacts; and 'quality of life' impacts. BBSRC examples included: significant licensing deals from the Biomolecular Science Committee portfolio; IAH's role in tackling infectious diseases that have potentially huge costs to the UK economy and in supporting UK development policy goals; and investments raised by 'alumni' of Biotechnology YES (Young Entrepreneurs Scheme).

Our Bioscience for Industry Panel is taking forward, within RCUK, our response to the findings of a user satisfaction survey, conducted for the Research Councils by PricewaterhouseCoopers LLP in summer 2007, and the 'Sainsbury Review' published in October 2007. External review of our Follow-on Fund showed that nine spin-outs were formed from the first 24 awards. Eighteen new companies have been established from 41 bioscience ideas mentored through early rounds of the Business Plan Competition, some of which have since been acquired by, and concluded significant deals with, major international partners.

Professor David Delpy, EPSRC Chief Executive, Dr Peter Ringrose, BBSRC Chairman, Professor Nigel Brown, BBSRC Director of Science and Technology, and Professor Linda Partridge, University College London, at 'Lifelong Health: the bioscience of ageing', an exhibition launched in autumn 2007 by BBSRC and MRC.

We commissioned PSP Ltd to review economic impact and academic-industry interactions in ten university departments that receive significant funding from BBSRC, and will use the findings to share best practice and identify opportunities to increase impact. We have announced plans for the BBSRC-sponsored institutes to report publicly on the economic and social impacts of their activities by summer 2008.

Researchers at the Institute of Biotechnology at the University of Cambridge have received significant BBSRC funding since its inception. We are delighted that the Institute was awarded the Queen's Anniversary Prize for Further and Higher Education in 2007 in recognition of its entrepreneurial approach to exploiting biotechnological research.

In the Swindon Office, we are drawing together activities of our Science and Technology Group and Business and Innovation Unit under specialist Directors, but within a single grouping. We are also integrating research training and career development in this framework so that we can address coherently the skills needs of academia and industry.

BBSRC-funded science addresses seven of the eight Cabinet Office Strategic Challenges for Britain. I am delighted that the longstanding research of scientists at Rothamsted Research to understand soil processes such as carbon cycling, has been recognised with them becoming 'certified recipients' of the 2007 Nobel Peace Prize for their substantial contribution to the work of the International Panel on Climate Change. I am also very pleased to record, as an example of the international standing of BBSRC-supported researchers, the election of Professor Caroline Dean OBE FRS of the John Innes Centre to the USA's National Academy of Sciences.

Global food security is now a major issue for governments in the developed world, as well as the developing world. BBSRC has become a member of the UK Collaboration on Development Sciences,and we have also made our first awards on Sustainable Agriculture for International Development (SARID, see pages 13 and 21).

Lord Steel of Aikwood talks to Dr Ken Wilson, from Lancaster University, at the launch of SARID (see pages 13 and 21).

The Institute of Biological, Environmental and Rural Studies (IBERS) was launched at Aberystwyth University in April 2008. (clockwise from left) Professor Wayne Powell, Director Designate of IBERS; Steve Visscher, Interim Chief Executive of BBSRC; Professor Mervyn Humphreys, former Director of IGER; Ieuan Wyn Jones, Deputy First Minister, Welsh Assembly Government; Professor Noel Lloyd, Vice-Chancellor of the University; Jane Hutt, Minister for Children, Education and Lifelong Skills.

In a UK context, we are using informatics and other technologies to translate outputs from fundamental plant science to help enable plant breeders and farmers sustain UK production under changing climate and market conditions. This typically involves a pipeline of BBSRC, Defra and industry-funded research. Key issues of sustainable land use will be informed by the new Institute of Biological, Environmental and Rural Studies – which brings together plant science and expertise in grassland systems from the former IGER, with complementary research within Aberystwyth University.

Working with others

Increasingly we operate collaboratively with our sister Research Councils through RCUK. Most notably, we are contributing to development of the Shared Services Centre in Swindon.

Cross-Council Research areas:

- **Ageing, lifelong health and wellbeing**
- **Nanotechnology**
- **Plant and animal science relevant to tackling global threats to security**
- **Renewable bioenergy**
- **Neurological Basis of Mental Health and Wellbeing**
- **Collaborative Scheme for Systematics Research**
- **Stem cells**

I am grateful to the Chairman and BBSRC Council, and to colleagues in DIUS and the institutes, for the support I have received following the departure of the former Chief Executive, Professor Julia Goodfellow, in August 2007. I also acknowledge the tremendous contribution of Swindon colleagues to many of BBSRC's successes, including that of Professor Nigel Brown, who leaves BBSRC in September 2008 to take up post as Vice-Principal and Head of the College of Science and Engineering at the University of Edinburgh, and Dr Doug Yarrow who retires in late 2008. I thank them and colleagues across BBSRC for their hard work and dedication.

Steve Visscher
Interim Chief Executive
June 2008

Supporting world class research

The UK is without doubt a world leader in bioscience. Bioscientists here carry out international calibre science, and the aim for BBSRC is to ensure that the UK continues to be at the forefront of bioscience research. We have continued to use funding initiatives to 'kick-start' and increase research and training capacity in emerging areas, and to focus activity around scientific and national strategic priorities. This complements our support for 'investigator-led' responsive mode grants for new ideas, across our remit.

The current major bioscience challenges are complex, and can increasingly only be solved and applied to real world issues through multidisciplinary approaches. Within this, our major priority remains the development of partnerships particularly between bioscience and the mathematical and physical sciences, and to effect a culture change in UK bioscience so that researchers work in more multidisciplinary teams. To support this, we are moving from reliance upon the traditional one principal investigator/one postdoctoral researcher projects to support larger, multidisciplinary teams working on longer projects with more funding. One mechanism for achieving this is our Longer Larger Grant Applications (LoLAs) scheme, introduced in 2006. In 2007-08 we awarded funding, totalling £15.5M for five full proposals, from the universities of Manchester, Cambridge, Birmingham, St Andrews, and University College, London.

We continue to fund Systems Biology Centres (see page 11) to facilitate the necessary culture change that is required to embed this field in UK bioscience. We have also continued to give priority funding for the development of the new research tools and resources needed to underpin these areas of research. This includes extension of the Tools and Resources Development Fund, further investing £1.5M on top of Spending Review 2004 monies; grants totalling £6.4M awarded through the Bioinformatics and Biological Resources Fund for databases, genetic and other resources; and jointly with EPSRC £7.5M in grants to develop novel techniques for the biosciences through the Technology Development Research Initiative.

We are working more and more closely with our sister Research Councils in joint-funded multidisciplinary programmes (see page 12-13).

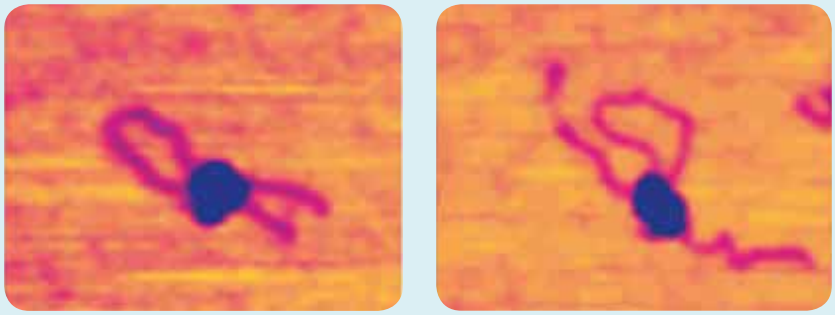
During the period of this report, the main emerging area of research has been, and continues to be, Synthetic Biology. In this, the key feature is the application of the principles of engineering to the biosciences, so that biological components and systems can be constructed and modulated rationally, and in common and standardised ways.

BBSRC is leading a major national initiative to increase the UK's capacity and competitiveness in Synthetic Biology – where the research market is predicted to rise to £1.8Bn in the next ten years. Synthetic Biology is an approach, not a discrete area of activity with clearly defined boundaries. BBSRC established a Working Group on Synthetic Biology in 2006. A seminal workshop in 2007 led to our strategy for support, which includes:

- multidisciplinary Networks to facilitate working between bioscience and engineering research groups and to support the development of new research tools and shared approaches (see page 12)
- individual grants in 'responsive mode'
- core research in areas such as computational networking and modelling, and biomolecular simulation and mimicry
- underpinning research in broader areas, such as protein and metabolic engineering.

In total our investment is around £43.5M.

Scientists reveal first-ever real time footage of DNA-enzyme interaction



Enzyme complex bound to, and looping, short lengths of DNA. Each panel is approximately 600 x 600nm.

Working with researchers in Edinburgh, Japan and India, scientists from the University of Cambridge produced the first ever real-time footage of a protective enzyme unravelling the DNA of a virus that is infecting a bacterial host. They achieved this using a revolutionary Scanning Atomic Force Microscope in Japan, and a technique known as fast-scan atomic force microscopy (AFM). Before now, scientists could only make assumptions as to how proteins and DNA interact, based on indirect evidence. The research has major implications for scientists studying DNA repair. *(Dr Robert Henderson and Dr Neal Crampton).*

Key funding data

Research funding: Analysis of gross expenditure

(£M)	Universities	BBSRC-sponsored Institutes	Other organisations	Total
Responsive research grants	118.1	13.5	11.5	143.1
Core Strategic Grants (CSG)	0.0	69.0	0.0	69.0
Research initiatives	49.5	6.5	4.8	60.8
Equipment and facilities	10.6	1.2	0.7	12.5
Capital and buildings	0.0	44.5	3.6	48.1
Training awards and fellowships	41.9	3.6	1.0	46.5
TOTAL:	**220.1**	**138.3**	**21.6**	**380.0**

Summary of grant applications and success rates

	2006-07				2007-08			
	Spring	Summer	Autumn	Winter	Spring	Summer	Autumn	Winter
Number	465	486	383	405	339	402	401	445
% success	29	26	26	24	25	26	27	23

Support for larger grants (see page 6) inevitably reduces the percentage of applications funded, but not the volume of research.

Applications and success rates by gender

Percentage of successful applications from total applications

	2005		2006		2007	
	Male	Female	Male	Female	Male	Female
Project grants	27.0	24.5	27.2	23.0	25.6	23.2
Programme grants	42.9	39.7	41.3	45.7	44.8	55.1
New investigators	40.8	33.3	31.7	35.0	36.7	30.6
Fellowships	16.9	5.6	16.7	9.1	12.5	13.6

Percentage of female applicants for peer-reviewed funding

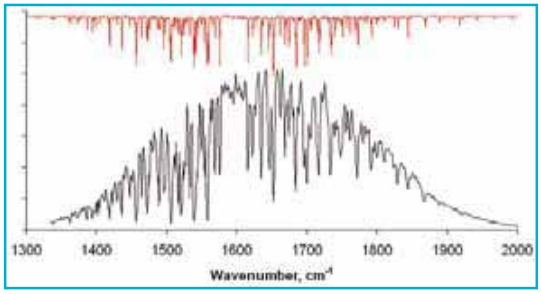
	2005	2006	2007
Project grants	21.4	21.9	19.7
Programme grants	19.4	18.1	12.6
New investigators	29.7	27.8	24.8
Fellowships	35.6	42.3	37.9

Analysis of final reports

	2005-06	2006-07	2007-08
Research grants delivering high-class work adding significantly to knowledge in the field (%)	78	79	85

New laser for analysis at femtosecond scale

A new facility for bioscientists – Ultra-sensitive Life Science Time-Resolved Analysis (ULTRA) – at the Rutherford Appleton Laboratory has been established through joint funding from BBSRC and the Science and Technology Facilities Council (totalling £1.8M). This will enable investigation of biological processes in the range of femtoseconds (a thousand million millionth of a second) to microseconds.



A snapshot of the infrared spectrum demonstrating the wide wavelength range generated by ULTRA in a single pulse.

Top 25 universities by grant funding

	University	Research grants (£M)
1	Manchester	17.47
2	Cambridge	15.25
3	Oxford	10.30
4	University College, London	9.39
5	Imperial College, London	9.33
6	Nottingham	8.98
7	Edinburgh	8.57
8	Glasgow	7.93
9	Sheffield	5.86
10	Leeds	5.82
11	Birmingham	5.39
12	Newcastle	5.26
13	Bristol	4.62
14	Warwick	3.96
15	King's College, London	3.92
16	York	3.82
17	Liverpool	3.67
18	Cardiff	3.46
19	East Anglia	3.22
20	Aberdeen	3.04
21	Leicester	2.72
22	Dundee	2.45
23	St Andrews	2.34
24	Southampton	2.21
25	Sussex	2.06

3 universities account for 25% of our grant funding, 8 account for 50%, 18 for 75% and 88 for 100%.

Publications from BBSRC-sponsored institutes

	2005	2006	2007
Refereed publications per scientist	2.2	2.1	2.4
Total publications per scientist	4.5	4.5	4.3

Institute funding (£M)

	BBSRC CSG	Other BBSRC funding	Defra/ FSA	Industrial Contract Income	Other Research Income*	EC/ International	Other Sources	TOTAL Revenue Income	BBSRC Capital Funding
Institute for Animal Health	10.2	4.1	7.7	0.1	0.6	1.1	4.0	27.7	17.6
Roslin Institute	6.4	2.9	3.1	0.3	3.0	1.2	1.4	18.3	2.3
TOTAL:	**16.6**	**7.0**	**10.8**	**0.4**	**3.6**	**2.3**	**5.4**	**46.0**	**19.9**
Babraham Institute	12.5	2.5	-	0.6	2.2	0.2	5.1	23.1	10.1
Institute of Food Research	9.8	1.7	1.0	0.5	0.5	2.1	0.4	16.0	1.3
TOTAL:	**22.3**	**4.2**	**1.0**	**1.1**	**2.7**	**2.3**	**5.5**	**39.1**	**11.4**
Sustainable agriculture and land use									
Institute of Grassland and Environmental Research	4.7	1.2	5.4	1.5	1.4	0.3	1.0	15.5	4.1
John Innes Centre	13.4	7.2	1.3	0.1	1.0	2.2	2.6	27.8	2.6
Rothamsted Research	12.0	5.3	3.7	1.9	1.6	0.5	1.9	26.8	6.4
TOTAL:	**30.1**	**13.7**	**10.4**	**3.5**	**4.0**	**3.0**	**5.5**	**70.1**	**13.1**
TOTAL:	**69.0**	**24.9**	**22.2**	**5.0**	**10.3**	**7.6**	**16.4**	**155.2**	**44.4**

* Including charities and Government Departments

New target for allergy treatments

A team of scientists from St Bartholomew's Hospital and The London School of Medicine and Dentistry has found an important target that holds significant promise for millions of people suffering from allergies, asthma, rheumatoid arthritis and a range of other inflammatory diseases. This work confirms that a key component of the body's own response to allergy-causing agents (allergens) can be targeted to reduce allergic reactions in mice. The team led by Professor Bart Vanhaesebroeck and Dr Khaled Ali has shown that by targeting a molecule called p110delta it is possible to interfere in the allergic reaction before symptoms occur, but without shutting down the immune system. Indeed, p110delta controls the machinery that allergic cells depend on to cause disease symptoms. The next step to develop p110delta blockers is now ongoing in industry, and is expected to proceed into the preclinical arena in humans in the near future.

New clue to immune defences

Researchers at the Babraham Institute have found that a small microRNA called miR-155 plays a critical role in immune defence. Mice lacking the gene that produces miR-155 have defective immune systems and respond poorly to vaccination. The research, conducted collaboratively with scientists at the Wellcome Trust Sanger Institute, The Gurdon Institute and the Universities of Cambridge and Birmingham was published in *Science* in April 2007. It provides new insights into how immune systems function and how molecules like miR-155 might be harnessed as therapeutics. *(Drs Martin Turner, Elena Vigorito, Anthony Rodriguez, Professor Allan Bradley).*

Bioinformatics leads to 'pipeline' for gene content analysis

A new software tool that enables scientists to analyse, visualise and estimate the gene content of closely related organisms from the known sequence of a reference genome has been developed in a collaboration between researchers at the John Innes Centre and the Institute of Food Research. They have produced a Microarray-to-Phylogeny Pipeline (MPP) that calculates and represents the relationship between related organisms. MPP has been used successfully on organisms as diverse as yeast, *E. coli* and pea plants. *(Dr Jo Dicks, Dr Ian Roberts, Dr Robert Davey and Dr George Sawa).*

The National Collection of Yeast Cultures, a world-leading resource benefiting from MPP.

Finding the genes that make a big difference

Dr Paula Kover of the University of Manchester and Professor Richard Mott from the Wellcome Trust Centre for Human Genetics (Oxford) have developed a new and unique resource for improving QTL analysis in plants – the identification of several or more genes whose combined action alters a complex trait such as growth. This comprises 1000 recombinant inbred lines of *Arabidopsis*. It will accelerate dramatically gene identification in *Arabidopsis*, which is a 'roadmap' for finding comparable genes in important crop species.

Dr Kover

Single origin of human life

Research led by Dr Andrea Manica of the University of Cambridge, and published in *Nature* in July 2007 has provided definitive evidence for the single origin of humans in sub-Saharan Africa. The research showed that human genetic diversity decreased in populations the further removed they are from Africa. Measurements of skull size and shape matched this pattern and rate of change in variation exactly. The data do not support the alternative theory of an additional non-African origin.

Subsaharan Africa (Nigeria)

Subsaharan Africa (South Africa)

Australia (South Australia)

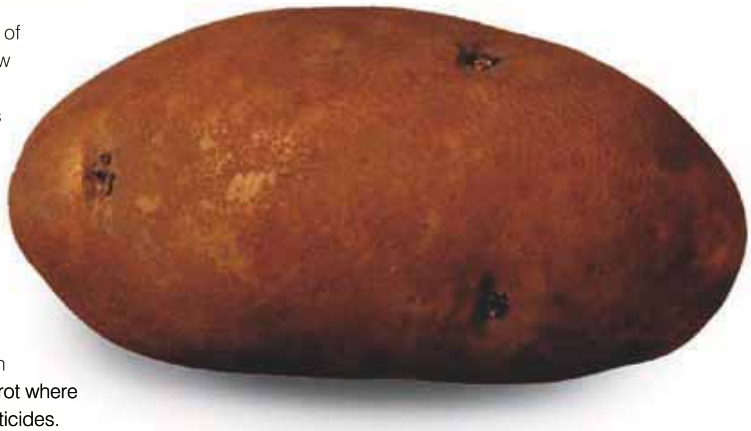
Australia (New South Wales)

Declining bumblebee populations

Bumblebees are important crop and wild plant pollinators, but their populations have declined dramatically over the past 50 years. A BBSRC-funded study led by Dr Juliet Osborne of Rothamsted Research found that Britain's gardens are vital habitats for nesting bumblebees. Gardens contain the highest densities of bumblebee nests (36 nests per ha), followed by hedgerows, fence lines and woodland edges (20-37 nests/ha). Nest densities were lower in woodland and grassland (11-15 nests/ha). This is the most detailed report yet about which habitats are best for bumblebee nests.

New targets for controlling potato diseases

Research led by Dr Martin Welch at the University of Cambridge has identified a potential target for new pesticides to prevent blackleg and soft rot in potatoes. These economically important diseases of crop and stored potatoes are caused by the bacterium *Erwinia carotovora*, which secretes enzymes that breakdown and release nutrients from potato cell walls. The Cambridge team showed that inhibiting a gene called relA, which is involved in sensing nutrient levels, abolished the bacteria's ability to breakdown the cell walls. The finding has been welcomed by the Potato Council as an important contribution towards novel disease control, especially for soft rot where there is no inbuilt resistance and no available pesticides.



Embedding Systems Biology

The critical feature of Systems Biology is the mutual reinforcement derived from integrating hypothesis-driven experimental bioscience and data generation with theoretical analysis and predictive computational approaches.

Since 2004, BBSRC has committed over £85M for research, training, infrastructure and resources for Systems Biology, including establishing six Systems Biology Centres across the UK (see for example page 20).

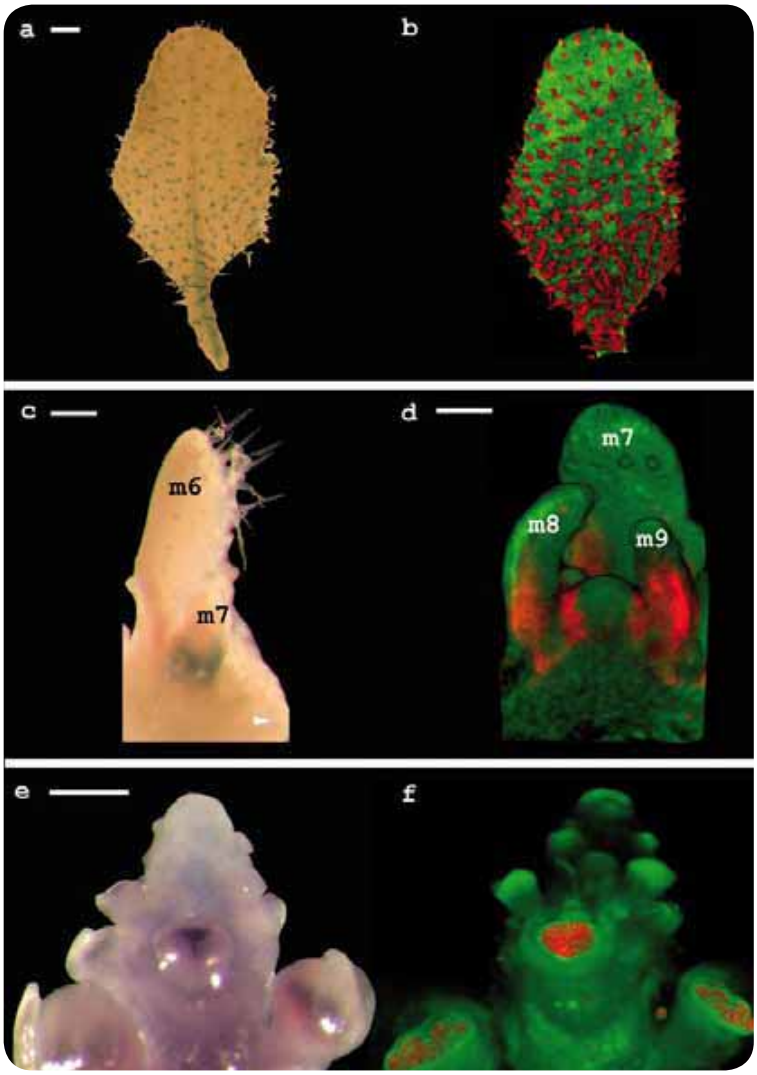
We are committing £23M to support six projects that won funding under our Systems Approaches to Biological Research (SABR) initiative. EPSRC is committing a further £2.9M. The awards will support research in a total of 13 universities and institutes across the UK. Five of the projects are being awarded studentships to help build research capacity and the skills base in the UK. The topics covered by SABR range from the systems analysis of signalling pathways in mammals and plants, to stress responses in plants and pathogenic fungi, and the development of tools for integration of systems biology data.

We are supporting a LINK project on Exploiting Systems Biology between researchers at the University of Nottingham, Royal Holloway London and Syngenta.

We made five awards totaling £387k, from 12 applications under our Mathematical Tools for Systems Biology initiative, which aims to increase capacity at the mathematics/systems interface.

Ten joint projects are being funded under the BBSRC-Agence Nationale de la Recherche (ANR France) collaboration on systems biology of animals, plants and microorganisms at a total of £6.5M. Each project has at least one UK and one French partner institution. Topics range from: applied statistical and mathematical modelling of the role of memory-like T cells in immune response; and a systems biology approach to virus transmission events that lead to epidemics such as foot and mouth; to investigating how insects process smells through the brain's primary olfactory centres.

Credit: Image courtesy of Karen Lee.



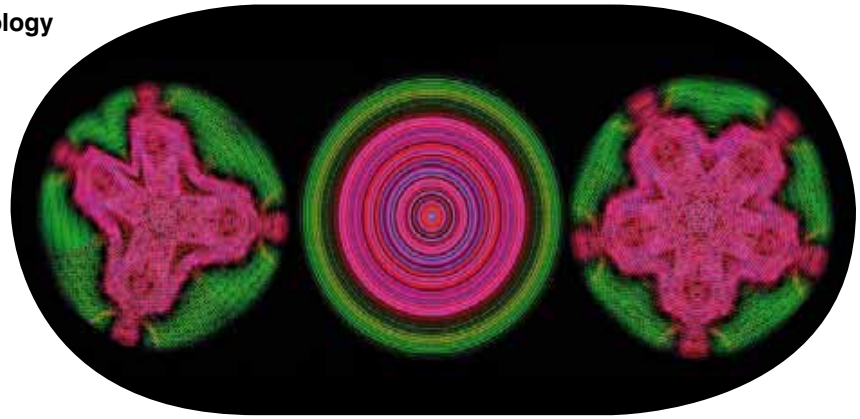
One SABR award will support research at the John Innes Centre (JIC) and the University of East Anglia into the effects of genes on leaf growth, shape and patterns. It brings together genetic analysis, image processing and computer modelling, and involves live 3-D tracking of leaf growth. Modelling growth and gene regulation in flowers is also being supported through a project between JIC, the University of East Anglia, INRA Lyon, INRIA Montpellier and CNRS Grenoble, under the collaboration with ANR. *(Professor Enrico Coen, Professor Andrew Bangham).*

(left) An *Arabidopsis* leaf and meristem and an *Antirrhinum* ower spike stained to reveal gene expression patterns. The leaf shows GLABRA2 gene expression in the blue stained hairs. The meristem reveals LEAFY gene activity stained blue in developing leaves, and the ower spike shows DEFICIENS gene expression as a purple stain in emerging petals and stamens. (right) Combined OPT volume views: gene expression is highlighted in red.

Major collaborative and multidisciplinary programmes

Networks in Synthetic Biology

BBSRC is leading on the development of Networks of researchers in universities that will increase the UK's research capacity in Synthetic Biology. The Networks, co-funded with EPSRC, will be launched in 2008. To ensure coverage of the economic, social and legal aspects of Synthetic Biology, the Networks will have input from social scientists and others as appropriate, through funding from AHRC and ESRC.



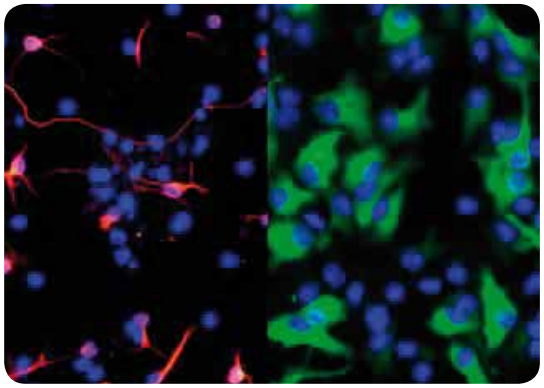
Credit: Alistair Gentry

Alistair Gentry's impression of Synthetic Biology from a video called Three Times True. Alistair was artist-in-residence at the ESRC Genomics Forum.

Stem Cells

UK National Stem Cell Network

BBSRC is one of four Research Councils providing initial three-year funding (totalling £50k pa) for the UK National Stem Cell Network (UKNSCN), which was formally launched in April 2007 in response to the Government's UK Stem Cell Initiative report of 2005. UKNSCN is an independent national body to promote research across the sub-disciplines of stem cell science to help to speed the translation of basic stem cell research into therapeutic applications in the control of degenerative diseases such as Alzheimer's, Parkinson's and diabetes. It also acts as the national focal point for disseminating information about UK stem cell research to overseas researchers, the public and the media. BBSRC hosts the Network's secretariat and press office.



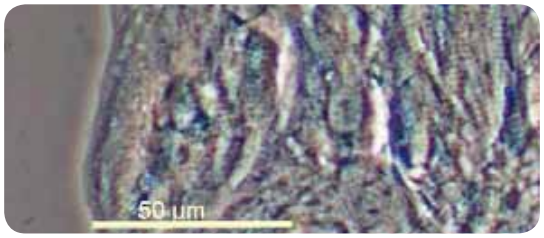
Credit: Austin Smith, ISCR, University of Edinburgh

Neural stem cells can make neurons or astrocytes

Providing a platform for stem cell repair of damaged hearts

Scientists at Imperial College London have overcome two significant obstacles to harnessing stem cells to build patches for damaged hearts. First, they have produced mature beating heart cells (cardiomyocytes) derived from embryonic stem cells. Second, they have developed the physical scaffolding needed to hold patches in place in the heart in clinical applications. The team demonstrated that beating embryonic stem cell-derived cardiomyocytes adopt the mature controls found in the adult heart approximately four months after their generation from embryonic stem cells. The team also developed a new biomaterial highly biocompatible with human tissue, with tailored elasticity and which can be programmed to degrade in anything from two weeks upwards depending on the temperatures used during synthesis. Project received 25% funding from EPSRC.

(Professor Sian Harding, Dr N. Ali, Dr Aldo Boccaccini)



Credit: N Ali, Imperial College, London

Human embryonic stem-cell derived cardiomyocytes maturing in the laboratory at 150 days.

Dr Chris Denning and colleagues at the University of Nottingham are developing a new system to monitor cardiomyocytes in real time as they differentiate from stem cells into beating heart cells. This is the first time the system, which uses electrophysiology to record the electrical properties of a cell, is being used in the UK to study cardiomyocyte cells.

Use of animals in research

(see also page 28)

BBSRC is significantly increasing its support, with other major funders, for the National Centre for the Replacement, Refinement and Reduction of Animals in Research (NC3Rs). We will increase funding to over £3M from 2008-09 to 2010-11. This is an increase from £66k in 2005-06, £404k in 2006-07 and £553k in 2007-08. During the year, three awards were made under the joint NC3Rs/BBSRC programme on tissue engineering to replace animal experiments. These projects were co-funded by EPSRC.

Optimising the use of biopesticides

Natural biopesticides such as pathogenic fungi that kill insects could be used much more widely to control crop pests. However, few products are registered and available in the UK. Research into identifying and overcoming barriers to the use of biopesticides has been undertaken in a project by the Rural Economy and Land Use (RELU) programme, funded jointly by BBSRC, ESRC and NERC. Political scientists led by Professor Wyn Grant at the University of Warwick found that changes in the regulatory system are needed to encourage the development of biopesticides. Biologists at Warwick used a new technique, nested clade analysis, to understand how species released as control agents interact with established populations of the same species, and how specific biopesticides can be tailored to function effectively and sustainably in local conditions and habitats. The work supports Defra's Science and Innovation Strategy objective to reduce reliance on conventional pesticides by developing alternative plant protection technologies.

Entomopathogenic fungus *Lecanicillium longisporum* infecting an aphid.

International

Sustainable Agriculture for International Development (SARID)

Army worms: a voracious pest of tropical plants.

In partnership with the Department for International Development (DFID) we have developed a programme aimed at using high calibre bioscience research to improve crop productivity and food security in developing countries. The assessment panel for funding included members from the Philippines, China, India and Ghana. Twelve projects are being supported at a total of £7M. These include developing crops resistant to the noxious parasitic plant witchweed, and using a virus as a biological control for the army worm, a voracious pest of tropical plants.
A second grant round on animal health is planned for 2008.

We have launched USA Partnership awards to support UK/US research collaborations. This sits alongside our ongoing Partnering Award schemes with China, India and Japan.

BBSRC contributes to developing RCUK's international strategy: www.rcuk.ac.uk/international

Researchers from the Institute of Food Research (IFR) led by Dr Pradeep Malakar are collaborating with scientists from Beijing, Shanghai and Yangzhao on the molecular epidemiology of neurotoxin-producing *Clostridia* strains in China. Another project is exploring the risk of neurotoxin production in minimally processed foods in China. BBSRC's China Partnering Award scheme funded the collaboration, which resulted from discussions between IFR and the Shanghai Academy of Agricultural Science.

Delivering economic and social benefits

We have announced our commitment to achieve a step-change in capturing economic and social impacts from the research we fund. Obtaining an accurate picture of the current situation across the board is important in setting a baseline for this process.

RCUK published a progress report Excellence with Impact with the outcomes of three independent consultancy projects: *Economic Impact Study* by PA Consulting and SQW; *User Satisfaction Survey* by PricewaterhouseCoopers LLP, and *Knowledge Transfer Categorisation and Harmonisation Project* by DTZ. In parallel, BBSRC commissioned People Science & Policy Ltd to investigate the business interactions and impacts of university departments that receive significant BBSRC funding.

Collaborative research with industry

Industrial Partnering Awards (IPAs)

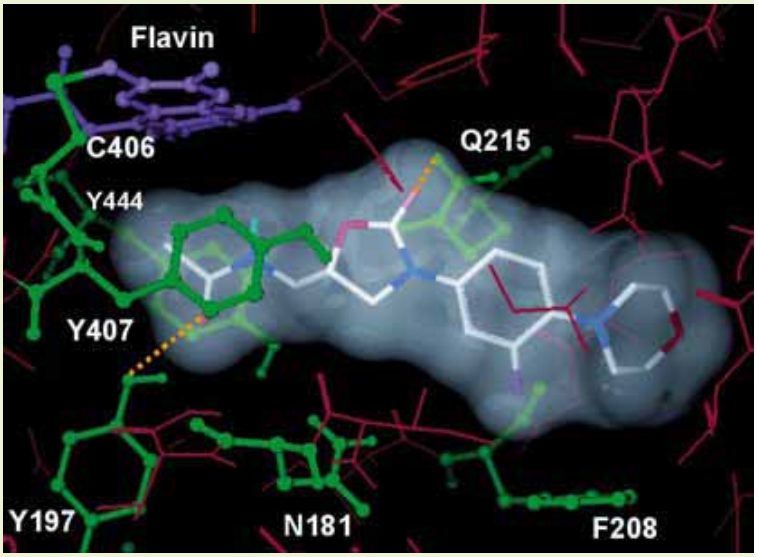
IPAs support science-led, responsive mode projects where an industrial partner contributes in cash at least 10% of the full economic cost. Under our Combating Endemic Disease in Farmed Animals (CEDFAS) initiative (see page 21), we made three IPAs, two with Pfizer, and one with Biobest and the British Pig Executive, which together committed over £0.5M. These support respectively: population genetics and genomics of nematode parasites in sheep (University of Glasgow); detecting pathogen and host factors critical to the pathogenesis of bovine mastitis due to *Streptococcus uberis* (University of Nottingham); and, the aetiology, pathogenesis and immunology of post-weaning multi-systemic wasting syndrome in pigs (Royal Veterinary College).

As world food security declines, there is renewed interest in breeding for increased yields, especially in environments where climate change threatens productivity. Initially, as part of an alliance with Sygenta and following on with grant support from Defra, scientists at John Innes Centre (JIC) and the University of Nottingham have revealed the effects of genes acting together (quantitative trait loci or QTLs) that have a particularly marked influence on yields in wheat. The research, which also involves collaboration with Nickerson-Advanta, provides the first 'physiological handle' on traits that could be used by plant breeders to increase yield by adapting varieties to changed and 'hostile' environments. The research is led by Professor John Snape at JIC and Dr John Foulkes at the University of Nottingham.

We have allocated just over £1M through four awards to BBSRC-sponsored institutes to support additional knowledge transfer activities.

Collaboration to deliver safer drugs

Joint research between BBSRC-funded scientists at the University of St Andrews, the BBSRC's Scottish Circular Dichroism Facility in Glasgow and AstraZeneca has revealed the molecular 'fit' by which inhibitor compounds block the action of monoamine oxidase enzymes (MAOs).
This is important because MAOs are involved in controlling levels of signalling molecules between some nerve cells. Some inhibitors for the enzymes are powerful antidepressants but can have potentially lethal side effects. On the other hand, some other medicines have the unintended side effect of blocking MAOs. This research, led by Dr Rona Ramsay, opens the way to new drugs rationally designed to overcome these problems.



Modelled position of an oxazolidinone derivative in the active site of MAO A.

Credit: University of St Andrews

Technology Strategy Board (TSB)

We have announced our intention to contribute up to £34M for complementary and collaborative activity with the TSB. With guidance from our Bioscience for Industry Strategy Panel and extensive discussions with industrial stakeholders, we have identified emerging areas most likely to raise industrial competitiveness over the next decade.

BBSRC is partnering EPSRC and the TSB in Technologies for the Development and Manufacture of Biopharmaceuticals. We are co-funding three proposals totalling £1M.

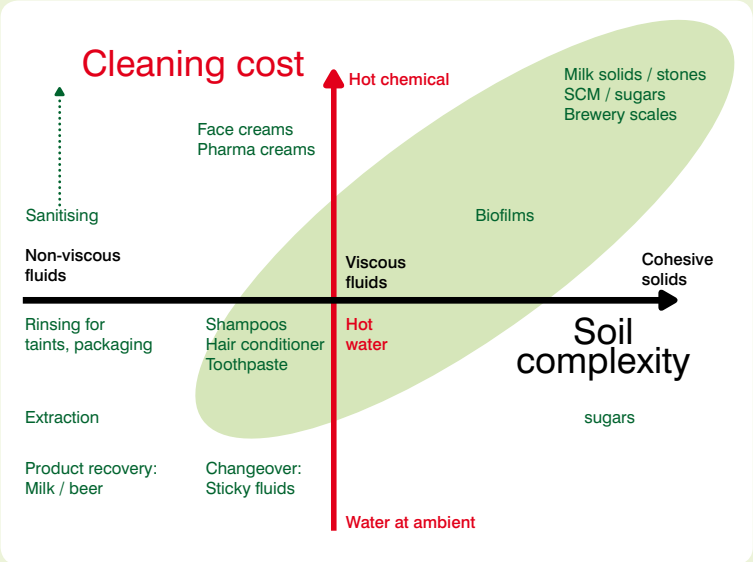
We have funded the academic component of four projects (totalling £900k) under the Smart and Bioactive and Nano-structured Materials for Health programme.

We plan to co-fund (up to a total of £1M) projects with a high academic component in the area of Cell Therapy.

Solving cleaning problems in the manufacture of Fast Moving Consumer Goods (FMCGs)

BBSRC-funded research to determine the underlying process engineering parameters relevant to solving problems of pipework fouling and cleaning in the manufacture of FMCGs is being taken forward through a £3.6M project consortium funded by the Technology Strategy Board.

The BBSRC focus is on developing models of how contaminating food materials can be removed from surfaces.
This is beginning to identify processes that employ smaller amounts of chemicals and lower temperatures so reducing environmental impact and cleaning and changeover times for commercial operators. The project is led by Professor Peter Fryer of the University of Birmingham, with research groups at the University of Newcastle and Imperial College, London. The industrial partners are Unilever, GlaxoSmithKline, Cadbury, Scottish and Newcastle, Alfa Laval, Bruker, Ecolab and GEA.



The cleaning continuum: fouling problems plotted against soil complexity and cleaning cost – the green shaded region indicates where research can have most impact.

A fouled plate heat exchanger, showing a port clogged with protein deposit.

Delivering economic and social benefits

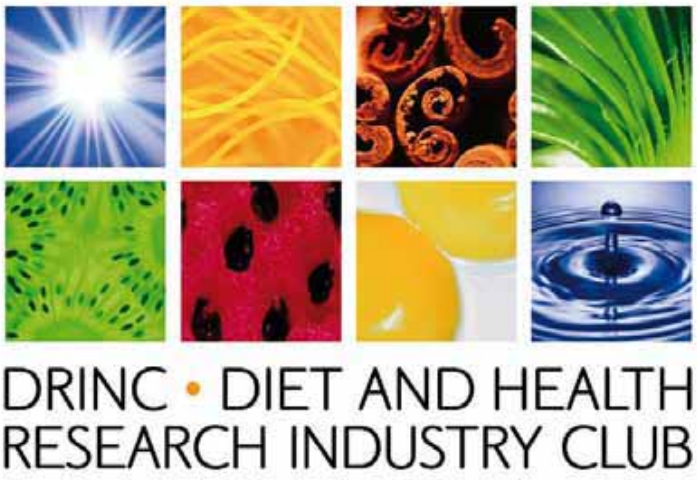
Research Technology Clubs

Our Research Technology Clubs (RTCs) are proving of considerable interest to UK bioindustries.

BRIC – We have supported a further seven projects at a total of £3.6M under our **Bioprocessing Research Industry Club** (in addition to nine established in the previous year. The total investment so far committed is £8.6M.) Three new members with a focus on stem cell therapy products joined in 2007, bringing the total to 19.

BBSRC is exploring with TSB, EPSRC and bioProcessUK the longer-term strategic development of research in bioprocessing.

DRINC – From 114 outline applications from our first call for proposals under our **Diet and Health Research Industry Club**, we have invited 74 full applications for assessment in May 2008. DRINC has 13 company members, together contributing £1M.



We are exploring possible new RTCs in:

- Biorefineries (where we have announced our commitment of up to £4M to support high quality industrially-relevant research)
- Biopharmaceutical Design
- Mitigating Impacts of Ageing
- Integration and Analysis of Large Data Sets for Predictive Biology
- Stem Cell Bioprocessing
- Bioinstrumentation
- Crop Improvement

BBSRC funding often provides a focus for research activity, around which additional investment from private sector engagement can be accrued. An example is the award of £200k from the North West Development Agency to support a Business Development Manager to enhance academic-industry interactions in the University of Manchester project supported under our Capacity Building Awards in Integrative Mammalian Biology programme.

Commercialising research outputs

Biotechnology YES

A record 318 individuals participated in 2007's Biotechnology Young Entrepreneurs Scheme (YES), to produce the best business plan for a hypothetical new company. Sixty-four teams competed in the final. The winner was a University of Cambridge team, with an idea for using fluorescing quantum data to analyse blood chemistry.
The competition was run in parallel with the first ever India YES, sponsored by UK Trade and Investment and the Foreign & Commonwealth Office, which attracted 69 teams. A team from the International Centre for Genetic Engineering and Biotechnology won first prize for their hypothetical business idea for a probiotic deodorant.
Biotechnology YES is organised by BBSRC and the University of Nottingham Institute for Enterprise and Innovation, with significant sponsorship from industry, charities, and Regional Development Agencies.

Members of ProBioVision, the first ever India YES winners with Patrick Bragoli, Foreign and Commonwealth Office; Dr Doug Yarrow, Steve Visscher and Dr Simon Cutler, all BBSRC.

Enterprise Fellowships

Our Enterprise Fellowships give scientists aiming to commercialise their research a year's time out to prepare themselves for the world of business. Administered through the Royal Society of Edinburgh, the Fellowships provide a salary to commercialise the idea, coupled with mentoring, and business training. This year we funded four Enterprise Fellows:

- Dr Andrew Almond, of the University of Manchester – determining the 3-D structure of key small molecules to expedite drug discovery.
- Dr Michael McArthur, of the John Innes Centre – DNA-based therapies to control antibiotic resistance in pathogenic bacteria (see page 19)
- Mr Sri Vasudevan, of the University of Oxford – virtual screening, an innovative method for drug discovery and development
- Dr Chris Ward, of the University of Manchester – novel embryonic stem cell technology.

The Countess of Wessex presented the 2007 Research Medal of the Royal Agricultural Society of England (RASE) and the 2007 RASE Technology Award respectively to: Dr Angela Karp of Rothamsted Research for her work on bioenergy and biomass crops; and the Institute of Grassland and Environmental Research, now part of the Institute of Biological, Environmental and Rural Studies at Aberystwyth University, for its plant breeding research, which has developed varieties that have had a significant impact on the market and end-use over the last 20 years.

Delivering economic and social benefits

Follow-on Fund

We commissioned Qi3 Ltd to evaluate how well our Follow-on Fund was meeting its aims of increasing and accelerating research ideas by providing funds to bring them to a stage where commercial opportunities (e.g. licensing, seed or equity funds) can be secured. The review found that the Fund was successfully meeting its aims and had generated nine spin-out companies from the first 24 projects. In response to the review's recommendation to broaden the range of funding available, we are introducing a Pathfinder award, aimed at better informing academics on the commercial prospects of their discoveries before they apply for funding.

Connexin-based treatments for faster wound healing

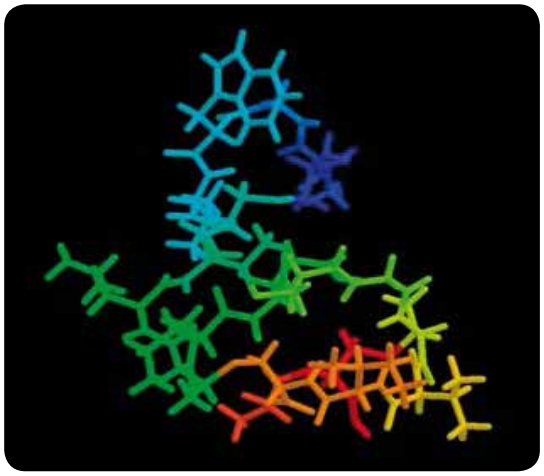
BBSRC-funded research into the role of membrane-spanning proteins, called connexins, in wound healing helped underpin development of Nexagon™, by the spin-out company CoDa Therapeutics.
Dr David Becker and colleagues at University College, London found that transiently reducing levels of one particular connexin accelerated wound healing and reduced levels of inflammation. They founded CoDa Therapeutics, which reached the final stages of the 2001-02 Bioscience Business Plan Competition. The company has since attracted $20M in financing from Domain Associates (USA) and GBS (Australia) to take Nexagon™ to toxicology testing and clinical trials.
With ongoing BBSRC support, research at UCL found that connexin responses to skin wounding in patients with diabetes are the opposite from normal. Early evidence suggests Nexagon™ could help improve this rate of healing to normal or better.

Business Plan Competition

The 2007-08 competition is the third run on a cross-Council basis. Designed to help researchers commercialise their research outputs, it began in autumn 2007. 115 competitors, from PhD students to principal investigators, submitted one page business plans, one third of which were relevant to BBSRC's science remit. All were invited to submit five page business plans, from which 46 have been invited to participate in the coaching and mentoring stage, over the summer of 2008. Again, about one third of these are relevant to BBSRC science.

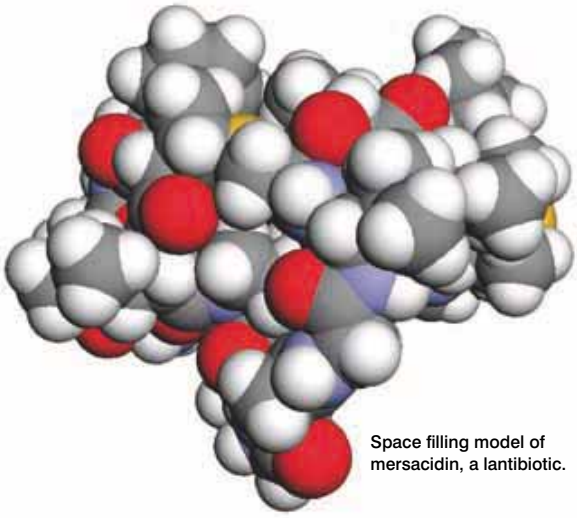
Spin-out wins £3.5M to support pre-clinical development

Novacta Biosystems Ltd, an anti-infective therapeutics company, spun out from the John Innes Centre has attracted £3.5M from the Wellcome Trust to progress its pre-clinical drug candidates into human clinical trials.
This is a good example of how strategic research at a BBSRC-sponsored institute has been translated towards commercial application, with additional funding from CASE and LINK awards, support from the Small Business Research Initiative and seed funding from the Rainbow Fund.



Courtesy of Novacta Biosystems Ltd.

3D picture of the lantibiotic acatagardine.



Courtesy of Novacta Biosystems Ltd.

Space filling model of mersacidin, a lantibiotic.

Transferring knowledge (BBSRC-sponsored institutes)

	2004-05	2005-06	2006-07	2007-08
Industrial income (£k)	10,661	8,829	7,979	7,618
Income from intellectual property (£k)	443	415	551	455
Patents awarded	13	19	15	10
Commercial licensing agreements	56	37	41	53
Spin-out companies trading	15	16	17	16
Refereed publications co-authored with industry	69	65	82	71

Financial figures are subject to audit

New spin-outs from BBSRC-supported research

Absynth Biologics

BBSRC-funded research by Professor Simon Foster and colleagues at the University of Sheffield has helped to identify a unique group of surface-exposed proteins of *S. aureus* that are essential for the bacterium's survival, and are very similar in all strains, including MRSA, one of the major hospital infections. These proteins are good novel targets for a vaccine and for prophylactic or therapeutic antibodies to control infections. The combined market value of such treatments is estimated to reach $5Bn by 2020. The research findings are being taken towards clinical application by Absynth Biologics. This company was launched by the University's Life Science IP commercialisation partner, Biofusion plc, which has invested £325k to help take the early-stage research to the production of lead candidates for clinical trials.

www.absynthbiologics.co.uk

Procarta Biosystems Ltd

Procarta aims to develop novel proprietary therapeutics against drug-resistant pathogens. It draws upon the expertise in bacterial gene expression of Dr Michael McArthur and Professor Mervyn Bibb at the JIC. Working with Plant Bioscience Ltd, they have developed a novel way of characterising the regulatory proteins that interact with molecular 'switches' to turn bacterial genes on and off. This opens up the potential for targeting particular switches and turning off those that control genes that make the bacteria resistant to antibiotics. The scientists have also patented a way of discovering 'decoys' in bacteria, without necessarily having to know the genes involved. This means they can develop a product line of cost effective therapies targeting many of today's infectious diseases. *As well as core funding to JIC, BBSRC supported the commercialisation of this research through Follow-on Funding to demonstrate proof of principle, and an Enterprise Fellowship to Dr McArthur (see page 17).*

www.procartabio.com

Inspiralis Ltd

John Innes Centre (JIC) researchers launched Inspiralis Ltd, based around their expertise in DNA topoisomerases – enzymes that together help DNA molecules to unravel and wind up properly and not to become tangled during replication. Topoisomerases are already targets for several drugs, including anti-tumour drugs and antibiotics, such as ciprofloxacin. Inspiralis makes a range of topoisomerase products targeted to the pharmaceutical industry to enable drug discovery work in this area. Professor Tony Maxwell and his team at JIC are now searching for new ways to inhibit these enzymes. They have developed a new technique for rapidly screening the effectiveness of potential drugs in inhibiting topoisomerases. This high-throughput assay has been patented and is being marketed through Plant Bioscience Ltd (PBL), JIC's technology transfer company. Non-exclusive licences have already been granted to pharmaceutical companies. Inspiralis Ltd will develop the technique further as well as offering screening services to companies.

www.inspiralis.com

Tackling major challenges

Climate change

Dr Richard Harrington of Rothamsted Research (RRes) has shown that most of Europe's common aphid species, such as the peach–potato aphid *(Myzus persicae)*, start flying significantly earlier following milder winters. Milder winters also lead to more aphids flying in spring and early summer, when many crops are especially susceptible to damage. Aphids that continue to reproduce asexually year-round can grow, reproduce and move during warmer winters. This has important consequences for the transmission of *Barley yellow dwarf virus* in autumn-sown cereals. Researchers at Rothamsted alert farmers to the likely need for pesticides through weekly bulletins to industry sponsors.
(Data for this research came from the suction traps network operated by the Rothamsted Insect Survey and collaborators in the EU Thematic Network EXAMINE.)

With Defra funding, Professor John Snape and colleagues at the John Innes Centre and the University of Nottingham have identified a trait in winter wheat – green leaf area persistence – that correlates with maintained yield under drought. This opens up the possibility of breeding for varieties that are not only drought-tolerant but also maintain high yield in both the presence and absence of drought, i.e. do not have a yield penalty.

A dense cluster of peach potato aphids.

Ageing populations

Research at the Centre for Integrated Systems Biology of Ageing and Nutrition, University of Newcastle, has used mathematical models to explore the mechanisms underlying cellular ageing and how these give rise to a distinctive hallmark of the ageing process – namely, its variability. The models suggested that damage to mitochondria by reactive oxygen species (free radicals) holds the key, through interactions with the shortening of telomeres (protective tips at chromosome ends). Subsequent experimentation confirmed this and opened new windows into the complex molecular mechanisms causing age-related frailty and disease.
(Professor Tom Kirkwood, Professor Thomas von Zglinicki, Joao Passos)

Securing world food supplies

Pearl millet produces grain and fodder in hot, dry conditions in infertile soil, and provides food security for 500 million people, mainly in Asia and Africa. However, low and unpredictable rainfall severely reduces its yield. Researchers led by Dr Rattan Yadav from the Institute of Biological, Environmental and Rural Studies (formerly the Institute of Grassland and Environmental Research) at Aberystwyth University, are working with researchers in India led by Dr Tom Hash from ICRISAT, and Ghana to improve pearl millet's genetic tolerance to drought. This project is funded by BBSRC and the Department for International Development through the SARID initiative (see page 13).

Research by Professor Andrew Meharg and Dr Adam Price at the University of Aberdeen has helped to identify genetic determinants of the amount of arsenic rice plants can accumulate. Arsenic contamination of water used to irrigate rice paddies, and arsenic pollution from base and precious metal mining, are major problems across South East Asia. In collaboration with researchers in India, Bangladesh and China, a SARID-funded project is aimed at breeding varieties with lower uptake capacity, for use in contaminated soils.

Serological and molecular technologies developed by Dr John Anderson, Mandy Corteyn and Professor Tom Barrett at the Institute for Animal Health have played a major role in the Global Rinderpest Eradication Programme, which has virtually eliminated this deadly and economically devastating disease of cattle. This programme, spearheaded by the UN's Food and Agriculture Organization, aims to have eradicated the disease by 2010. Institute staff were also responsible for supplying standardised reagents and for transferring this technology to laboratories in developing countries.

Energy

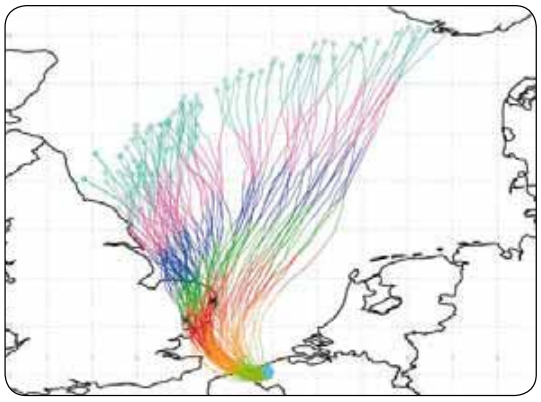
Research led by Professor Lynne Macaskie of the University of Birmingham has shown how bacterial fermentation of sugary wastes from food manufacturing can generate hydrogen for use in fuel cells to make electricity. Collaborative research with chemical engineers at Birmingham is optimising the efficiency of such fuel cells, where a key issue is the sustainable use of precious metal (PM) catalysts to split the hydrogen produced by the bacteria. This had led to development of a bio-recovery system to help recycle PMs from spent automotive catalysts. The net result is conversion of two types of industrial waste into zero-carbon electricity.

Professor Christine Raines and colleagues at the University of Essex have discovered a mechanism by which plants regulate their conversion of carbon dioxide (CO_2) into sugars in response to different levels of sunlight. They found that two enzymes involved in this process, phosphoribulokinase (PRK) and glyceraldehyde-3-phosphate dehydrogenase (GAPDH) bind together, inhibiting each other progressively as light levels decrease. As a result CO_2 fixation is reduced. As light levels rise, the enzymes rapidly break apart and synthesis of sugars accelerates. This finding will help underpin new strategies for increasing the amount of CO_2 absorbed by plants thereby increasing yield for food and biofuel production.

UK disease security

We are funding ten new projects at a total of £11.5M under our Combating Endemic Diseases of Farmed Animals (CEDFAS) initiative. These include two Government Partnering Awards with Defra, which committed a total of about £500k.

The deadly farm animal disease bluetongue arrived in Britain for the first time in September 2007. Predictive models produced by Laura Burgin and John Gloster at the Met Office and Professor Philip Mellor, Dr Chris Sanders and Dr Simon Carpenter at the Institute for Animal Health indicate the most likely date and source for the introduction of infected midges to the UK. These maps were provided to Defra each day from 01 April to 30 November, and enabled surveillance and defensive action to be targeted to where it is most needed. This work was funded by Defra.



Credit: The Met Office

The trajectories of 100 midges taking off from Ostend, Belgium at 18:00 on 4 August 2007. These trajectories pass over both initial disease outbreaks near Ipswich and Lowestoft. Meteorological conditions were nearly ideal for transporting infected midges.

Dr Nigel Ferris of IAH Pirbright collaborated with Svanova Biotech AB (Sweden) and Dr Emiliana Brocchi of IZS, Brescia (Italy) to develop a rapid pen-side test for foot-and-mouth disease virus (FMDV), which is now commercially available. It involves the same technology as in home pregnancy tests, and diagnosis can be achieved within ten minutes.

People, skills, training and knowledge flows

We have continued to refine our support for research training and skills development against three key issues: the need to ensure that the UK has highly trained early career researchers in strategically important areas of the biosciences, both for academic research and for work in and with industry; that we help provide secure career development pathways that attract and retain skilled researchers in the UK; and that we enable top calibre scientists to dedicate themselves full time to research at different stages of their careers through Fellowships.

Masters Training Grants (MTGs)

We have successfully launched our first year of MTGs, through which we provide departments with three-year awards to fund students on specific Masters programmes. This gives departments much greater flexibility to seek joint funding with other sponsors, or award higher stipends to attract the best students compared to the provision of single studentships. The MTGs were awarded through a rigorous competition which targeted a number of key areas:

- Data handling;
- Interdisciplinary courses providing e.g. mathematical or physical skills training for biological science students or biological skills training for students from a mathematics or physical sciences background;
- 'Omics' skills;
- Mathematical modelling and computational approaches to biological systems;
- Whole animal physiology (including pharmacology);
- Masters degrees providing strategically important training for industry

We are supporting exciting MSc and MRes courses in topics such as Bioinformatics and Systems Biology (Imperial College, London), Computational Biology (York), and Drug Discovery Skills (Kings College, London). We made grants to a total of 15 universities and institutes, and these are supporting a total of 110 full awards.

Modular Training for Industry

The Modular Training for Industry programme provides flexible, up-to-date technical training for graduates working in industry. We are funding three new Masters level courses, with clusters of modules in experimental therapeutics and bioinformatics at the University of Oxford and brewing science at the University of Nottingham.

PhD studentships

We have announced our intention to move all PhD studentships to a four-year funding basis, and so increase the number of PhD students we support from 2000 to around 2,400 by 2010-2011. This represents an increase in investment from £39M to £51M by 2010-2011, including stipend increases in line with inflation. The minimum student stipend for the academic year 2007-08 is £12,600 p.a.

From October 2007, all new starting studentship awards have been made in the form of flexible Doctoral Training Grants (DTGs), using a standard four-year studentship cost. This includes our Industrial CASE scheme and the Industrial CASE Partnership scheme. The DTG enables departments to take control of the funding, and use it more flexibly for maximum strategic impact.

We continue to place high priority on the quality of the training environment. Our major Quota DTG competition in 2007 sought to focus funding on departments combining the very highest quality research training, together with broader bioscience skills (including quantitative skills, ethical and social issues, and commercial awareness), and professional and transferable skills.

Working within RCUK, we have agreed to develop a longitudinal study on career paths followed by our PhD students, to expand the data we currently have on first destinations immediately after graduating.

We have continued to make 50 awards a year for Targeted Priority Studentships that support training in strategically and economically important areas, especially those related to our Research Technology Clubs (see page 16). We have announced our intention to double this to 100 awards a year as part of our expansion of support for postgraduate training, starting with the competition in 2009.

In order to improve administrative efficiency in our studentship work, we launched an electronic application system in 2007 for all our competitions using the RCUK joint electronic submission system (Je-S). In 2007 we also adopted the Je-S Student Researcher Data Portal to collect information on the students funded from Training Grants.

Priority areas:			
New for Oct 2007		**New for Oct 2008**	
Bioprocessing	5	Systems Biology	30*
Comparative Genomics	9	Bioprocessing	9
Crop Science	9	Ageing	12
Integrative Mammalian Physiology	12		
Regenerative Medicine	6		
Selective Chemical Intervention in Biological Systems	9		

* 20 in association with awards made in the SABR initiative (see page 11); 10 in Systems Biology Doctoral Training Centre with EPSRC.

Top 25 universities by postgraduate funding

	University	Funding (£M)	No. of post-graduates as at 31.03.08	No. of fellowships as at 31.03.08
1	Manchester	3.96	194	5
2	Cambridge	2.89	116	4
3	Imperial College, London	2.34	93	3
4	Nottingham	2.22	127	2
5	Leeds	2.15	111	2
6	Edinburgh	2.06	79	1
7	University College, London	1.99	74	2
8	Oxford	1.67	51	3
9	Sheffield	1.64	84	1
10	York	1.62	65	1
11	Birmingham	1.58	74	2
12	Bristol	1.49	60	2
13	Glasgow	1.34	47	3
14	Liverpool	1.15	49	2
15	Newcastle	1.05	58	1
16	Warwick	0.96	45	-
17	Dundee	0.91	36	1
18	East Anglia	0.84	28	1
19	Bath	0.80	34	-
20	Aberdeen	0.76	36	1
21	King's College, London	0.73	30	1
22	Royal Veterinary College	0.72	39	2
23	Southampton	0.69	29	1
24	Leicester	0.66	32	-
25	Reading	0.60	31	-

Training first rate people

	2004-05	2005-06	2007-08
Students qualifying from Masters courses (%)	97	95	87
	2001-05	**2002-06**	**2003-07**
Students submitting PhD theses within 4 years (%)	73	79	80

First destination data of PhD students

	Completing in 2005-06 academic year*
% known destination	
Government and public sector	11
Higher education	37
Industrial and commercial sector	34
Further training	8
School teaching/other	4
Not employed	6

*Collected on behalf of Research Councils by HESA (Higher Education Statistics Agency), new categories introduced for data collection for students starting in 2001-02

Credit: USDA/Science Photo Library

All Studentships	
DTG CASE	392
DTG Research	831
Ind CASE	303
Other CASE	51
Other Research	81
Targeted research	297
Masters	111
Total	**2,066**

Industrial CASE studentships

The Industrial CASE scheme is an annual competition awarding DTG (Doctoral Training Grants) to universities for collaborative student projects, and where the company partner takes the lead in specifying the project area. In 2007-08 we awarded DTGs funding 36 students on collaborative projects with a total of 29 companies.

Industrial CASE Partnership Awards

The Industrial CASE Partnership scheme awards three-year quotas of studentships to major UK bio-sector companies, giving them the flexibility and control to select the academic groups with which they want to work. In 2007-08 a total of 13 companies held our quota awards, and directed the award of Doctoral Training Grants funding 78 students to universities of their choice.

Dr James Logan

Dr James Logan was a BBSRC-funded research student at Rothamsted Research and the University of Aberdeen. He identified compounds in human odour that elicit neural responses in mosquitoes, and found that the ratio of these varied between individuals who were 'attractive' or 'non-attractive' to the insects. James, who now works in Rothamsted's Centre for Sustainable Pest and Disease Management, was awarded the Royal Entomological Society Wallace Award for his PhD research.

Postdoctoral researchers

Through RCUK, we have contributed to the development of a new *Concordat to Support the Career Development of Researchers*, in partnerships with universities, Funding Councils and other major UK researcher funders. This new Concordat will replace the 1996 version and will set out up-to-date national expectations with regard to support and career development for postdoctoral researchers. This is scheduled for publication in June 2008.

Also in 2007 we introduced a new criterion for the assessment of responsive mode grants, in order to allow Committees to take account of the extent to which a grant represents a long-term investment in a researcher as well as research outputs. Committees can now consider grants in terms of the science training and development opportunities which will benefit the researcher, and the science base, beyond the completion of the project.

As part of RCUK we have helped to revise and expand the contract for the UK Grad programme. This new programme, which is scheduled for launch in September 2008, will now support transferable skills training for postdoctoral researchers as well as for PhD students. We are also continuing to make allocations of 'Roberts' funding to institutions hosting our PhD students and postdoctoral researchers, in order to support the local provision of the key professional skills needed by the next generation of research leaders.

Fellowships

BBSRC led a cross-Research Council harmonisation group that has identified a common set of terms and conditions for fellowship grants, and this has led to the issuing, for the first time, of a single set of terms and conditions covering both grants and fellowships. We have launched our second round of Institute Fellowships, on the theme of Integrative Mammalian Physiology. This follows last year's theme of Sustainable Agriculture and Land Use. Two awards have been made to researchers at Roslin Institute.

Fellowships portfolio 2007	
David Phillips	7*
Institute Career Path	2
Research Development	2
Institute Development	1
Enterprise	4
Professorial	2

* two of these offered Fellowships were not taken up

Undergraduates

We are continuing to fund 100 Vacation Bursaries a year in leading research-led bioscience departments. These popular awards help raise the profile of research careers within a department, and give undergraduate students the opportunity to gain a more realistic experience of working as a research scientist.

Dr Jon Pittman

Dr Jon Pittman of the Plant Sciences Research Group at the University of Manchester was awarded a BBSRC David Phillips Fellowship in 2005. His research focuses on the ways plants regulate their accumulation and partitioning of metals, including those that are essential for growth, and also how they are able to tolerate concentrations of potentially toxic metals, which in crops significantly limit agricultural productivity.
Dr Pittman won the 2006 President's Medal of the Society of Experimental Biology.

Dr Matt Dalby

BBSRC David Phillips Fellow Dr Matt Dalby of the University of Glasgow won the Nexxus Young Life Scientist of the Year Award. His work has contributed to an improved understanding of cell biology and translating fundamental biological discoveries into practical applications. It could underpin new clinical approaches to degenerative diseases, in particular for hip replacements and bone grafts.

Embedding our science in society

We deliver our objectives – for example, ensuring that societal issues are addressed in BBSRC policy-making and funding decisions; equipping and encouraging researchers to engage with the public; providing opportunities for people to engage with contemporary science; and helping to enthuse young people about science – through:

- participation and funding of nationwide activities through Research Councils UK
- topic-based and multilateral partnerships with other Research Councils
- collaborations with and between BBSRC-sponsored institutes
- new BBSRC projects on priority and emerging issues

Opinion gathering and public dialogue

Low-carbon, renewable energy sources

The Society for Experimental Biology's Photosynthesis Congress provided BBSRC with an opportunity to discuss the development of low-carbon, renewable energy sources, including bioenergy, with members of the public. A panel of experts, chaired by BBC Radio 4's Quentin Cooper, considered how improved understanding of photosynthesis might contribute. Issues raised included the role of genetic modification in developing biofuels, the timescales involved in developing efficient artificial photosynthesis and whether research would deliver results sufficiently quickly and cost effectively, land use issues, and the best way to fund research to help combat both dwindling oil reserves and the UK's reliance on imported energy.

Stem cells

A consortium led by BMRB Social Research ran a series of public workshops on stem cell science, as part of a Government-supported programme run by the BBSRC and the Medical Research Council (MRC). These took place in London, Edinburgh, Cardiff, Newcastle and Bristol. This Sciencewise-funded programme is the largest ever study of UK public attitudes towards, and awareness of, stem cell research. Outputs from the year-long dialogue will help to inform policy developed by BBSRC and MRC, the two largest public funders of UK stem cell science. The first workshop, in London in March 2008, explored people's 'visions for stem cell research'. Subsequent workshops will examine the sources and clinical application of stem cells.

"It was a fantastic opportunity to engage with the public, and an invaluable exercise for me as a sociologist."

Dr Dana Wilson-Kovacs,
ESRC Centre for Genomics in Society,
University of Exeter after a workshop in Bristol.

Professor Paul Mitchell, Professor Christine Raines (see page 21), Quentin Cooper, Professor James Barber, Professor Steve Yearley at the Photosynthesis Congress.

Nanotechnology

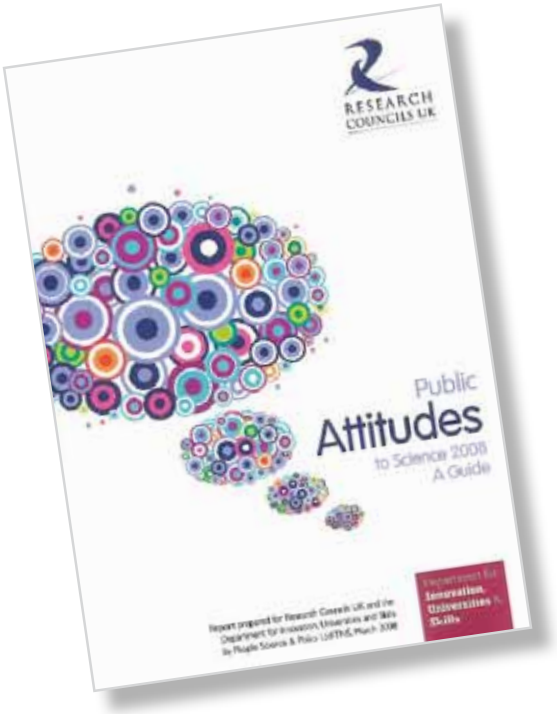
In partnership with EPSRC, we part-funded and contributed to one of the experiments in the Sciencewise 'Nanodialogues' project led by the think-tank Demos (www.demos.co.uk/publications/nanodialogues). This brought together 14 local citizens, and scientists funded by BBSRC and EPSRC.

"Here was an example of true 'upstream engagement', the idea – often suspiciously received by scientists – that both the public and scientists have something to gain from discussing future research prospects as an input to research funding. Most encouraging for researchers was the strong support by public participants for fundamental science."

Nature 448, 7149, 5 July 2007, p2.

Public Attitudes Survey

BBSRC contributed to RCUK management of the third Public Attitudes to Science Survey, published in partnership with DIUS in March 2008. For the first time the survey included a booster sample of young people exploring the views of 16-24-year-olds in detail. The report is accessible at www.rcuk.ac.uk/sis/pas.htm.



BBSRC supports and contributes to the following, which are coordinated through the RCUK Science in Society Unit:

- Beacons for Public Engagement (with the Wellcome Trust and Funding Councils)
- Researchers in Residence (scientist placements in schools)
- BA CREST Awards (school research projects)
- Nuffield Science Bursary Scheme (school student placements in research laboratories)
- CPD for teachers through Science Learning Centres
- BA Perspectives (public presentations by postgraduates)
- Presentations at the Association for Science Education
- ASE schoolscience website
- Awards for National Science Week

Outreach and engagement

In 2007, BBSRC's Bioscience for Society Strategy Panel established a Working Group to explore the issues raised by Synthetic Biology and how these are best addressed through public engagement.

The Group commissioned a review by Dr Paul Martin of the Institute for Science and Society, University of Nottingham. This will be presented to BBSRC Council to help inform our policymaking. BBSRC is working closely with EPSRC and other funders on a collaborative approach to public engagement on Synthetic Biology.

Dr Gladys Onambele-Pearson of Manchester Metropolitan University was a speaker at a SPARC (a joint BBSRC-EPSRC programme of research on ageing) community event held in conjunction with Camden Active Health Team of Camden Council. Her talk, and the BBSRC exhibition, focused on the value of exercise to the quality of life for older people.

Touring exhibitions/discussion meetings

During the year BBSRC science has been presented at a number of exhibitions and other public events. These include meetings on stem cell science, ageing, photosynthesis and biodiversity.

BBSRC hosted two displays as part of an Environment Research Funders' Forum (ERFF) exhibit at the BA Festival of Science in York in September 2007. The event showed how different funding bodies are working together to tackle environmental challenges. BBSRC displays were 'Coping with Climate Change' and 'Today's Waste, Tomorrow's Fuel' – which also appeared at the Royal Society Summer Exhibition (see below).

We published a new brochure identifying the impact of bioscience on the problem of hospital acquired infections.

We provided support for two displays at the prestigious Royal Society Summer Exhibition in 2007. These addressed: (pictured) sustainable energy from urban and industrial waste (universities of Birmingham and Cardiff and Valeswood ETD Ltd) and primate roots of human language (University of St Andrews).

BBSRC is coordinating a display at the 2008 Exhibition that illustrates the role of mathematical modelling in predicting and controlling disease of crops and livestock. This will feature research from the University of Cambridge, the Institute for Animal Health and Rothamsted Research.

BBSRC has worked jointly with the MRC, NERC, the Wellcome Trust and NC3Rs to publish common guidelines for using animals in research. These outline the funders' expectations regarding the use of animals in research. They will be published in 2008 (see also page 13).

Darwin 200

BBSRC is leading for RCUK on developing a variety of 'touring' public engagement activities in 2009 to celebrate the 150th anniversary of *On The Origin of Species* and the 200th anniversary of the birth of Charles Darwin. In partnership with Dr Jeremy Pritchard of the University of Birmingham, we have led on the production of a new interactive website that invites people to explore and comment upon the impact of Darwin's ideas on contemporary research in bioscience, robotics, design, sociology and the arts.

Engaging young people in science

We support activities to engage young people in science, largely through the BBSRC-sponsored institutes and RCUK-coordinated activities. These include the BA CREST scheme, a science project award scheme, and Researchers in Residence, which gives scientists the opportunity to work alongside teachers in the classroom. We also support the Nuffield Bursary Scheme, in which school students take part in real research projects in laboratories during the summer holidays.

We support a network of local coordinators, now at 18 locations across the UK. Their activities included: inviting 60 Bradford school students to spend a day in the laboratories at the University of Manchester; an interactive exhibition on photosynthesis and life at the Glasgow Science Centre, and lending laboratory and other equipment to schools to run bioscience experiments. BBSRC also provides several downloadable web resources for teachers.

The Babraham Institute won the Work with Schools Employer Engagement Awards Scheme 'Large Business Award' for its work to inspire school students to pursue careers in science. From left to right: Amanda Burton, Cambridge Biologists' Network; Dr Ian Harvey, Head of Biology, Hills Road 6th Form College and founder of the Cambridge Biologists' Network; Dr Frank Ellis, School Liaison Manager, GSK and Dr Claire Cockcroft, Babraham Institute.

Making our science accessible

	·2006-07	2007-08
Media releases	64	47
Corporate publications*	11	7*
Exhibitions	13**	8
Public meetings and events	5	6
Grants for National Science Week (awarded through RCUK)	7⁺	9
Public engagement awards	7	6
Local schools' coordinators	22	20
Science communication courses	8˙	8˙

·excludes publications produced with Research Council partners
·· includes nine with other Research Councils
⁺ out of a total of 42 awards
˙ includes two developed with other Research Councils, and two university-led courses

Corporate information

Council

Council determines BBSRC policies and strategies. It comprises the Chair, the Chief Executive and between 10-18 members, at least half of whom are appointed for their qualification in science and engineering. Users of research, in Government and industry, are also represented.

All members are appointed by the Secretary of State for Innovation, Universities and Skills. They are required to abide by a code of practice that covers conflicts of interest and general conduct.

The Council approves the membership of the six Boards that report to it, namely Appointments, Audit, Estates & Equipment, Human Resources, Remuneration, and Strategy Boards. The Chair of each Board is required to report regularly on the work of their respective Boards and to take forward specific tasks as directed by Council.

The Council is also expected to ensure that the position of Clerk to Council, which provides an administration interface between the Chair, Council and the BBSRC Executive, is of an appropriate standing and experience. The Clerk to the Council is a senior official in BBSRC Swindon Office.

Page 65 contains details of related party transactions.
Registers of interest for Council, Boards and Committees can be found at www.bbsrc.ac.uk.

Council Membership
(as at 1 April 2008)

Dr Peter Ringrose
Chair

Dr David Brightman
Brightman Farms

Professor John Coggins FRSE
University of Glasgow

Professor Anne Dell FRS
Imperial College, London

Professor Peter Fryer FREng
University of Birmingham

Professor Chris Gilligan
University of Cambridge

Mrs Sarah Haywood
Department of Business, Enterprise and Regulatory Reform

Professor A Jackie Hunter
GlaxoSmithKline plc

Dr David Lawrence
Syngenta

Professor Quintin McKellar FRSE
Royal Veterinary College

Professor Christopher Pollock CBE
Welsh Assembly Government

Dr Andrew Richards
Babraham Bioscience Technologies Ltd

Professor Dame Nancy Rothwell FRS
University of Manchester

Dr John Stageman
MedImmune

Professor Robert Watson
Department for Environment, Food and Rural Affairs

Professor Malcolm Weir
Heptares Therapeutics Ltd

Mr John Neilson
Observer for the Secretary of State for Innovation, Universities and Skills

Council Members who also served in 2007-08 were: the late Professor Sir Howard Dalton FRS, Defra; Professor David Delpy FRS, University College, London; Professor Robert Freedman, University of Warwick; Professor Julia Goodfellow CBE, Chief Executive and Deputy Chair of BBSRC; Dr Alistair Penman FIFST, Independent.

Boards, Panels and Committees

(as at 31 March 2008)

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Council Member

Professor John Coggins FRSE
University of Glasgow

Professor Robert Freedman
University of Warwick
Council Member

Professor Jane Hurst
University of Liverpool

Dr Malcolm Skingle
GlaxoSmithKline
Chair, Bioscience for Industry Strategy Panel

Professor Alison Smith OBE
John Innes Centre
Chair, Plant & Microbial Sciences Committee

Audit Board

(two vacancies)

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Independent

Professor Robert Freedman
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Council Member

Professor Quintin McKellar FRSE
Council Member

Mr Mike Samuel
Independent

Estates and Equipment Board

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BBSRC Interim Chief Executive

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Chair JIC Governing Council

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BBSRC Director Science & Technology

Mr Dev Biddlecombe
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Mr Paul Gemmill
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Dr Alistair Penman FIFST
Independent, Chair Audit Board

Mr Mike Phipps
University of Bristol

Mr Richard Shaw
Institute for Animal Health

Human Resources Strategy Board

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Dr Frances Green
Medical Research Council

Ms Jan Juillerat
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University of York

Professor Martin Shirley
Director, Institute for Animal Health

Mr Peter Swinburne
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Mr Steve Visscher
BBSRC Interim Chief Executive

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Professor Dame Nancy Rothwell FRS
Council Member

Mr Steve Visscher
BBSRC Interim Chief Executive

Professor Malcolm Weir
Council Member

Strategy Board

Mr Steve Visscher (Chair)
BBSRC Interim Chief Executive

Professor David Fell
Chair, Integrative & Systems Biology Strategy Panel

Professor Russell Foster
Chair, Healthy Organism Strategy Panel

Professor Chris Gaskell
Chair, Sustainable Agriculture Strategy Panel

Professor Simon Gaskell
Chair, Tools & Resources Strategy Panel

Professor Maggie Gill
Independent

Professor Chris Gilligan
Council Member

Professor Alan Irwin
Chair, Bioscience for Society Strategy Panel

Professor Ottoline Leyser FRS
Chair, Studentships & Fellowships Strategy Panel

Dr Fiona Marston
Independent

Professor Michael Wakelam
Independent

Corporate information

Bioscience for Industry Strategy Panel

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GlaxoSmithKline plc

Mr Mark Carver
Avecia Biologics Ltd

Professor John Coggins FRSE
University of Glasgow

Dr Lloyd Czaplewski
Prolysis Ltd

Professor Colin Dennis
Campden and Chorleywood Food Research Association

Sir Ben Gill
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Sarah Haywood
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Isis Innovation Ltd

Dr Harren Jhoti
Astex Therapeutics

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University of Manchester

Dr Linda Magee
Northwest Development Agency

Dr C Natraj
Unilever Corporate Research

Professor Katherine Smart
University of Nottingham

Dr Lewis Smith
Syngenta Crop Protection AG

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Dr Louise Archer
King's College London

Professor Derek Bell
Association for Science Education

Dr David Boak
Independent

Professor Kenneth Boyd
University of Edinburgh

Professor Derek Burke CBE
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Dr Mike Collis
Physiological Society

Professor Robert Dingwall
University of Nottingham

Dr Richard Dyer OBE
Biosciences Federation

Dr Brian Johnson
Independent

Dr Mairi Levitt
Lancaster University

Dr Tom MacMillan
Food Ethics Council

Professor Christine Nicol
University of Bristol

Ms Vivienne Parry
Independent

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University of Reading

Professor Stephen High
University of Manchester

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University of Liverpool

Professor Janet Lord
University of Birmingham

Professor John Mathers
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Pfizer Global R&D

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Scottish Crop Research Institute

Dr Caroline Edmonds
Babraham Institute

Professor Keith Goulding
Rothamsted Research

Dr Steve Rawsthorne
John Innes Centre

Ms Beverley Rowe
Norwich Bioscience Institutes

Ms Jill Skinner
Babraham Institute

Dr Trevor Wang
John Innes Centre

Dr Mari Williams
BBSRC, Head of Evaluation and Policy

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University College Dublin

Dr Aileen Allsop
AstraZeneca

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Professor Ian Booth
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National Physical Laboratory

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Agriculture and Horticulture Development Board

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Consultant

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Mr Chris Warkup
Genesis Faraday Partnership

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Department for Environment, Food and Rural Affairs

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University of Oxford

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Rowett Research Institute

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Professor Charles Penn
University of Birmingham

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University of Newcastle

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Food Standards Agency

Animal Sciences Committee

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Professor Andrew Loudon
University of Manchester

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University of Glasgow

Dr (Elizabeth) Amanda Parker
University of Kent

Dr Lynne Sneddon
University of Liverpool

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Scottish Government

Biochemistry & Cell Biology Committee

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Dr Stephen Delaney
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Professor Colin Dingwall
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Professor Beverly Griffin
Imperial College, London

Professor Chris Hawes
Oxford Brooks University

Dr Markus Kirkilionis
University of Warwick

Professor Michael McPherson
University of Leeds

Professor Andrew Munro FRSC
University of Manchester

Professor Peter Piper
University of Sheffield

Professor Emma Raven
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Dr Alastair Reith
GlaxoSmithKline R&D Ltd

Dr Len Stephens
Babraham Institute

Professor Anne Willis
University of Nottingham

Dr Rose Zamoyska
National Institute for Medical Research

Biomolecular Sciences Committee

Professor Rod Hubbard (Chair)
University of York

Professor Tom Brown
University of Southampton

Dr Julea Butt
University of East Anglia

Professor Harry Gilbert
University of Newcastle

Dr Sophie Jackson
University of Cambridge

Dr Marisa Martin-Fernandez
Science and Technology Facilities Council

Professor Michael Overduin
University of Birmingham

Dr Martin Packer
AstraZeneca

Dr Christopher Phillips
Pfizer Global Research & Development

Dr Andrew Pitt
University of Glasgow

Professor Christopher Schofield
University of Oxford

Professor Nigel Scrutton
University of Manchester

Dr Chris Tate
Medical Research Council

Professor David Westhead
University of Leeds

Professor Malcolm White
University of St Andrews

Dr Xiaodong Zhang
Imperial College, London

Engineering & Biological Systems Committee

Professor Robert Beynon (Chair)
University of Liverpool

Professor Andy Baker
University of Glasgow

Dr Declan Bates
University of Leicester

Dr Walter Cook
Pfizer Global R&D

Professor Alicia El Haj
Keele University

Dr Brendan Fish
Cambridge Antibody Technology

Professor Alex Gray
Cardiff School of Computer Science

Professor Chris Hewitt
Loughborough University

Professor Marta Kwaitkowska
University of Oxford

Dr Kathryn Lilley
University of Cambridge

Professor Paul O'Shea
University of Nottingham

Professor Chris Mason
University College, London

Professor Johnjoe McFadden
University of Surrey

Dr Tracy Melvin
University of Southampton

Dr Gill Stephens
University of Manchester

Professor Michael Stumpf
Imperial College, London

Professor Dek Woolfson
University of Bristol

Dr Martin Anthony (Observer)
Department of Business, Enterprise and Regulatory Reform

Dr Caroline Batchelor (Observer)
Engineering and Physical Sciences Research Council

Genes & Developmental Biology Committee

Professor Elizabeth Jones (Chair)
University of Warwick

Dr Tim Allsopp
Stem Cell Sciences Ltd

Professor John Brookfield
University of Nottingham

Professor Hugh Dickinson
University of Oxford

Professor Ray Dixon FRS
John Innes Centre

Professor Jon Frampton
University of Birmingham

Professor Andrew Hudson
University of Edinburgh

Dr Andrea Münsterberg
University of East Anglia

Dr Sarah Newbury
University of Sussex

Dr Helen Ougham
IGER (now the Institute of Biological, Environmental and Rural Studies, Aberystwyth University)

Professor Nancy Papalopulu
University of Manchester

Dr Penny Rashbass
University of Sheffield

Professor Mike Stark
University of Dundee

Dr Max Telford
University College London

Dr Mark Wilkinson
Natural History Museum

Plant & Microbial Sciences Committee

Professor Alison Smith OBE (Chair)
John Innes Centre

Professor James Beynon
University of Warwick

Professor Stephen Busby FRS
University of Birmingham

Professor Andrew Fleming
University of Sheffield

Dr Christopher Grant
University of Manchester

Professor Sarah Gurr
University of Oxford

Professor Jay Hinton
Institute of Food Research

Professor Michael Holdsworth
University of Nottingham

Professor Marc Knight
Durham University

Professor Johnathan Napier
Rothamsted Research

Professor Anthony O'Donnell
University of Newcastle

Professor Tracy Palmer
University of Dundee

Professor Peter Palukaitis
Scottish Crop Research Institute

Professor Margaret Smith
University of Aberdeen

Dr Helena Thomaides
Prolysis Ltd, University of Oxford

Professor Colin Turnbull
Imperial College, London

Professor Simon Turner
University of Manchester

Organisational developments

Efficiency

This year BBSRC delivered efficiency savings worth £48.6M against a target of £38.2M. We did this by reducing the proportion that we spend on administration; reprioritising programme spend; through more co-funding of research with industrial and other partners; and by increasing efficiency at our sponsored institutes. These savings were delivered through:

- Re-prioritisation of funded programmes, including training (£24.8M)
- Proportional reduction of administration costs (£2M)
- Increased efficiency of our sponsored institutes, including better use of capital infrastructure (£8M)
- More co-funding (£13.7M)

We are planning further savings to continue in the next comprehensive spending review period, beginning 2008-09.

BBSRC's administration costs represented 2.46% of the Science Budget Income (resource and capital including non-cash) for 2007-08. This continues the downward trend previously achieved over the Gershon period (2.95% in 2004-05, 2.78% in 2005-06 and 2.67% in 2006-07) and is once again within target.

Research Council harmonisation

Five Research Councils (excluding MRC and NERC) harmonised their pay and grading systems with effect from 1 July 2007. This was part of a three-year pay deal, submitted to and agreed by DIUS and subsequently negotiated and agreed with the Trade Union Sides of the five Councils in question. Final agreement was reached towards the end of March 2008, so the 2007 increases and the grade restructuring were back-dated to 1 July 2007.

Operational activities in the fields of finance, human resources, procurement and IS/IT are scheduled to transfer to a Research Councils-wide Shared Services Centre (SSC) in 2008-09. Grants work will transfer in 2009-10. This initiative involves the transfer under the Transfer of Undertakings (Protection of Employment) Regulations (TUPE) of a number of BBSRC employees to RCUK Shared Services Centre Ltd. Work to identify the relevant activities and staff affected in BBSRC Swindon Office and the institutes has been undertaken, with some TUPE transfers effective from 1 April 2008.

Risk management

BBSRC utilises a range of techniques to ensure that risk is managed in a manner that ensures a proper balance is struck between prudent management and innovative approaches to issues. We use a formal structure of operational risk registers, longer term strategic risks and business critical projects and this year have been supported by a review of risk appetite. These are regularly reviewed by the executive management of BBSRC and the BBSRC Audit Board, and annually by internal and external auditors. Our procedures are supported by Statements of Internal Control from the Chief Executive, and Group and Institute Directors, which draw on evidence from the work of the Audit Board, the annual report from the Head of Internal Audit, the risk management frameworks developed by BBSRC and its sponsored institutes, responses to external audit management letters which identify where control gaps exist and the Funding Assurance Programme report. In addition, for significant programmes such as the Pirbright Development, the Office of Government Commerce's Gateway process is used.

Staff report

On 1 April 2008, 2,069 staff were employed on indefinite contracts in institutes sponsored by BBSRC and in the BBSRC Office. Of the indefinite contract staff, 932 were in the science category, of which 93% were graduate or equivalent level. A further 291 members of staff, mainly scientists, held period appointments in BBSRC directly. Women occupy 20% of senior posts in BBSRC [Band 1 to 4]. The comparable figure for 2006-07 was 22%.

These figures exclude staff employed at IGER who transferred to Aberystwyth University on 31 March 2008, but include 197 staff at the Roslin Institute and the NeuroPathogenesis Unit who will transfer to the University of Edinburgh on 1 May 2008.

Environmental policy

BBSRC and its sponsored institutes are committed to reducing their carbon footprint. We have formalised and strengthened our commitment to promoting environmental best practice in connection with our operations and have set our institutes key energy and environmental objectives to measure and reduce CO_2 emissions, energy consumption and waste. These are reported on annually.

Over the last five years our institutes have consistently reduced their energy consumption and have implemented plans to reduce and recycle waste. BBSRC and its institutes have also implemented video conferencing facilities at all main sites, which has enabled a reduction in travel. Our institutes have undergone environmental reviews with benchmarking against ISO4001 and are working towards achieving accreditation.

The Swindon-based Research Councils are developing plans for a travel policy, and figures for waste disposal on the site show that approximately 70% of waste is recycled.

Health and Safety

A key objective for this year was to continue developing and implementing health and safety policies across the BBSRC, integrating as far as possible already established systems to ensure minimal changes to working practices. The following policies/guidance have been ratified and implemented:

- Lone Working
- Radiation Protection
- Control of Substances Hazardous to Health (COSHH)
- Accident Prevention.
- Health and Safety Executive (HSE)

BBSRC participated in an HSE funded project on stress management competencies. Our results compared favourably to other organisations involved in the project.

BBSRC has achieved accreditation from the Institution of Occupational Safety and Health (IOSH) to run their certificated training course entitled Working Safely, and has run a number of courses at different sites.

Over the last year incident reporting has improved. Accident reporting is now quick and accurate.

The total number of Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) reports to the HSE in the year 1 April 2007 to 31 March 2008:

Reportable Incident Category
(defined as in RIDDOR 1995)

	2006-07	2007-08
Fatality (suicide)	0	1
Contact with moving machinery or material being machined	1	0
Hit by a moving, flying or falling object	0	0
Hit by a moving vehicle	0	0
Hit by something fixed or stationary	0	1
Injured while handling, lifting or carrying	3	4
Slipped, tripped or fell on the same level	4	4
Fell from a height	0	3
Trapped by something collapsing	0	0
Drowned or asphyxiated	0	0
Exposed to, or in contact with, a harmful substance	0	2
Exposed to fire/heat/extreme cold or other physical agent	0	0
Exposed to an explosion	0	0
Contact with electricity or an electrical discharge	0	0
Injured by an animal	1	0
Physically assaulted by a person	0	0
Another kind of accident	2	1
Total accidents	**11**	**16**
Cases of occupational disease	1	1
Dangerous occurrence	2	2
Overall total	**14**	**19**

Diversity

BBSRC aspires to provide opportunity and respect for all employees, inclusivity and the elimination of unlawful discrimination.

We have revised and defined the key aims of our Diversity Strategy for 2008 to 2010. Our priorities are:

- promoting diversity awareness
- reviews of the merit promotion and recruitment and selection processes
- work-life balance (and the flexibility to accommodate individual needs)
- a review of the appointments process, training and membership of boards and panels
- assessing impact.

Our published equality schemes and actions plans set out how we will meet our general and specific legal duties in relation to race, gender, and disability, and progress mainstreaming equality and diversity throughout the organisation and its activities. For 2008-09, the actions plans have been reviewed and combined to form an Equality Duty Action Plan, which now covers all strands of equality and diversity, including age, sexual orientation, religion and belief. The revised strategy, equality schemes and action plan are fundamental to mainstreaming diversity into our core business.

The vast majority of our staff have attended diversity awareness training and we have developed plans to further embed diversity through refresher training.

The merit promotion review has recommended development of a single scheme, open to all. The review of recruitment and selection has been completed; the final report, issued to all BBSRC establishments, identified barriers that lead to under-representation and recommended good practice.

Equality Impact Assessment guidance is available on the BBSRC website. It has been supplemented by production of a model impact assessment that demonstrated the process.

All BBSRC establishments have either achieved Two-Ticks status or are actively seeking accreditation, and our institutes are again reviewing access to premises and facilities for those with disabilities.

For all under-represented groups, we have conducted an equal pay audit, which identified several actions designed to eliminate any perceived pay gaps.

Our negotiating and consultative committees have continued to be held locally and nationally as the primary mechanisms for communication between senior management and Trade Union representatives. The Equality and Diversity Joint Committee provides a forum in which diversity issues can be discussed and the Trades Union side has made a valuable contribution to the development of our diversity strategy, policies and plans. Communicating with employees is increasingly delivered via the BBSRC website, the staff extranet and our IT network, although direct letters and corporate publications are still used. We have developed plans to utilise role models at open days, careers fairs and elsewhere to demonstrate that employment in BBSRC is open to all. We are developing a document that profiles the careers of researchers from diverse backgrounds.

Protected personal data related incidents

There have been no personal data related incidents in 2007-08 or in previous financial years. BBSRC will continue to monitor and assess its information risks in order to identify and address any weaknesses, and ensure continuous improvements of its systems.

TABLE 1: SUMMARY OF PROTECTED PERSONAL DATA RELATED INCIDENTS FORMALLY REPORTED TO THE INFORMATION COMISSIONERS OFFICE IN 2007-08

Statement on Information Risk	**Not required 2007-08**			
Date of incident (month)	**Nature of incident**	**Nature of data involved**	**Number of people potentially affected**	**Notification Steps**
None	0	0	0	0
Further action on information risk	BBSRC will continue to monitor and assess its information risks in order to identify and address any weaknesses and ensure continuous improvement in its systems. Planned steps for the coming year include: - Implementation of DSO/KPMG recommendations on Information Assurance under the guidance of external body. - Review and revise as appropriate current Information Security Policy.			

TABLE 2: SUMMARY OF OTHER PROTECTED PERSONAL DATA RELATED INCIDENTS IN 2007-08

Incidents deemed by the Data Controller not to fall within the criteria for report to the Information Commissioner's Office but recorded centrally within the Department are set out in the table below.

Category	Nature of incident	Total
I	Loss of inadequately protected electronic equipment, devices or paper documents from secured Government premises	0
II	Loss of inadequately protected electronic equipment, devices or paper documents from outside secured Government premises	0
III	Insecure disposal of inadequately protected electronic equipment, devices or paper documents	0
IV	Unauthorised disclosure	0
V	Other	0

TABLE 3: YEAR-ON-YEAR TOTAL NUMBERS OF PROTECTED PERSONAL DATA RELATED INCIDENTS PRIOR TO 2007-08

Total number of protected personal data related incidents formally reported to the Information Commissioner' Office, by category number

	I	II	III	IV	V	Total
2006-07	0	0	0	0	0	0
2005-06	0	0	0	0	0	0
2004-05	0	0	0	0	0	0

Total number of other protected personal data related incidents, by category number

	I	II	III	IV	V	Total
2006-07	0	0	0	0	0	0
2005-06	0	0	0	0	0	0
2004-05	0	0	0	0	0	0

Financial review

Financial highlights

- As part of the final settlement of the Spending Review 2004, the grant-in-aid allocation, including funding for the Pirbright redevelopment, rose by £16.5M to £393.6M.
- The increased grant-in-aid enabled a rise in research and capital grants of £27.1M (9%) to £333.5M. Expenditure on training and fellowship awards rose by £2M (5%) to £46.5M.
- Net expenditure for 2007-08 rose by £23.1M.
- A total of £2.6M has been expensed as Shared Services Centre (SSC) related costs. This consists of BBSRC's share of the expensed project spend (£1.0M), BBSRC's directly incurred SSC costs including support to Institutes (£0.8M) and provisions for restructuring and system termination (£0.8M). In addition £3.2M of set-up costs has been capitalised as an asset under construction.
- Other operating costs for the year increased by £2.2M. This included the expensed SSC set-up costs (£2.6M). When removing the SSC set-up costs, other operating costs are level with 2006-07.
- Other recoveries also increased by £1.5M, predominately as a result of the recovery of costs from the migration of Roslin Institute staff to the University of Edinburgh, and BBSRC's hosting of RCUK transparent approach to costing (TRAC) and funding assurance programme (FAP).
- Restructuring costs for the year were £5.5M. £3.2M of this represents the estimated cost of transferring ex-IGER Institute staff pensions to the University of Aberystwyth. The balance of the restructuring costs are a mix of unprovided redundancy, and small additions to restructuring and legal provisions.
- The Net Book Value of BBSRC's fixed asset base rose by £15.0M to £224.5M. £9.6M of this increase is the valuation of the work to date on the IAH Pirbright redevelopment. £3.2M of the increase is represented by the aforementioned BBSRC share of capitalised SSC set-up costs.
- The investment in Plant Biosciences Ltd was impaired by a further £0.1M to take its holding value to £0.5M.
- Forward commitments on approved research grants increased by £46.3M to £481M. Capital commitment also rose, by £45.8M, with the most significant new project being the £22.2M funding approved in principle for IAH business continuity and compliance work. BBSRC's share of the capital commitments of the SSC project were £4.9M.
- The BBSRC sponsored IGER Institute formally transferred to the University of Aberystwyth on 31 March 2008. As part of the transfer BBSRC agreed to contribute to any redundancy costs should the University's programme grant income fall between 1 April 2008 and 31 March 2014. The level of BBSRC's contribution is dependent on both the level and year of the reduction. The potential costs to BBSRC are unknown therefore a provision for these costs has not been made in these accounts and the agreement has been disclosed as a contingent liability.

Shared Services Centre (SCC)

The seven Research Councils have agreed to establish a Shared Services Centre (SSC), to be based in Swindon. The SSC will provide finance, grants, human resources, information systems, procurement and payroll operational services to each of the Councils and their institutes. The Councils are setting up the SSC with the aim of reducing spend on administration and achieving procurement savings through sharing and standardising processes. The SSC has been incorporated during the year as RCUK Shared Services Centre Limited and is in the process of establishing itself to be ready for the transfer of services. There is a phased implementation plan for transferring the councils' services during 2008-09.

EPSRC is currently acting as host for the SSC project on behalf of all Councils and has contracted for the development and establishment of the SSC. The Councils have agreed to share all these costs and BBSRC's agreed share is 20.54%. The 2007-08 costs have been accounted for in BBSRC's books as £956,000 expensed, £789,000 as provisions for redundancy and system termination costs and £3,224,000 as assets in the course of construction. The transition to the Shared Services Centre is regarded as a business critical project and is referred to in our Statement of Internal Control.

Developments since 31 March 2008

The BBSRC sponsored Roslin Institute formally transferred the majority of its activities to the University of Edinburgh on 13 May 2008. As part of the transfer BBSRC entered into a number of agreements to compensate the University of Edinburgh, including the following:

- Compensation for any additional pension benefits ex-Roslin employees are entitled to under the Research Councils' Pension Schemes as opposed to the Universities Superannuation Schemes. The Government Actuary's Department (GAD) estimated the difference at £3M, on the assumption all employees take up the option to transfer their accrued pension benefits.

- Indemnity for any potential legal cases brought against the University as a result of past actions of the Institute. The proportion of the settlement BBSRC will fund declines on an annual basis and is limited to claims up to the fifteenth anniversary of the completion of the transfer. The likely cost of these is unknown.

- Should the University of Edinburgh experience a fall in research grant income (including BBSRC grants), BBSRC will contribute to the cost of any redundancies that arise as a direct result. The proportion of BBSRC's contribution to the redundancy cost is dependent upon both the level and the year of the income reductions. An accurate estimate of such costs is unavailable.

- BBSRC has also agreed to an indemnity for Roslin's Neuropathogenesis Unit (formerly part of the Institute for Animal Health) to cover any shortfall in grant income as a result of the transfer. The cost of this is estimated at £1M.

As the transfer occurred after the year-end, no provision has been made for the points stated above, other than to disclose as a post balance sheet event.

Pensions

The employees of the Council are members of the Research Councils' Pension Schemes (RCPS) which are defined benefit schemes funded from annual grant-in-aid on a pay-as-you-go basis. The benefits are by analogy to the Principal Civil Service Pension Scheme, except that while the schemes provide retirement and related benefits based on final or average emoluments, redundancy and injury benefits are administered and funded by the Council.

The scheme is administered by the Research Councils' Joint Superannuation Service with the associated grant-in-aid managed by BBSRC. The schemes' accounts are prepared by BBSRC, on behalf of the BBSRC Chief Executive as the Accounting Officer for the RCPS. Separate accounts are published for the Pension Schemes. Employees' contributions vary between 1.5% and 3.5%. The employer's contribution is agreed by the RCPS Board of Management on the recommendation of the Government Actuary's Department (GAD) and is set at 21.3% of pensionable pay.

The RCPS is an unfunded multi-employer defined benefit scheme. The Council is unable to identify its share of the underlying assets and liabilities of the scheme on a consistent and reasonable basis and therefore, as required by FRS 17 'Retirement Benefits', accounts for the scheme as if it were a defined contribution scheme. As a result, the amount charged to the Statement of Net Expenditure account represents the contributions payable to the scheme in respect of the accounting period. A full actuarial valuation was carried out on 31 March 2006 with results expected to be announced in August 2008. The valuation carried out on 31 March 2002, which changed the employers' contribution rate from 10.1% to 21.3% from 1 April 2005, therefore applies to these accounts. Details are available in the accounts of the RCPS, which can be found at www.bbsrc.ac.uk.

For 2007-08, employers contributions of £1,719k were payable to the RCPS (2006-07 £1,670k) at 21.3% of pensionable pay, based on the salary bands. Employer contributions are to be reviewed every four years following a full scheme valuation by GAD. The contribution rates reflect benefits as they are accrued, not when the costs are actually incurred, and reflect past experience of the scheme.

Creditor payment policy

BBSRC adheres to the principles of the Prompt Payers' Code, and makes every effort to ensure compliance with the agreed terms of payment of creditors' invoices and endeavours to pay them within 30 days of receipt of goods or services. During 2007-08 88% of payments were made within 30 days (2006-07: 93%).

The Late Payment of Commercial Debts Regulations (2002) provides all businesses, irrespective of size, with the right to claim statutory interest for the late payment of commercial debts. No such claims were received during the reporting year.

Audit board

The Chair and at least three non-executive committee members of BBSRC's Audit Board are appointed by the Council, being members independent of management and free of any relationship that, in the opinion of the Council, would interfere with the exercise of independent judgement as Board members. Audit Board meets three times a year to monitor standards of risk management, corporate governance, internal control reports from the Research Councils' Internal Audit Service, external audit reports and to review BBSRC's Accounts.

Auditors

BBSRC's Accounts are audited by the Comptroller and Auditor General in accordance with Section 2(2) of the Science and Technology Act 1965. The audit fee for the year was £47,500 (2006-07: £44,500). No non-audit work was performed by the Auditors during the year. In so far as the Accounting Officer is aware, there is no relevant audit information of which BBSRC's auditors are unaware, and the Accounting Officer has taken all the steps that he ought to have taken to make himself aware of any relevant audit information and to establish that the BBSRC's auditors are aware of that information.

Remuneration report

Council Chair and Council Members except Chief Executive

Policy

Remuneration rates are the same across the Research Councils. The rates are reviewed each year by the Department for Innovation, Universities and Skills. In considering the new rates, the Department may take into account the increase given to the senior civil service. The Department consults with the Research Councils and the agreed change is implemented in October.

Appointments are non-pensionable and there is no entitlement to compensation for loss of office. No fee is payable in respect of Civil Servants, employees of Research Councils and their institutes and other Non-Departmental Public Bodies and Agencies.

Remuneration (audited information)

The standard fee paid to Council Members was:

	From 1 October 2007 £	Until 30 September 2007 £	
Council Chair	15,780	15,410	per annum
Council Members who also chair Committees	8,750	8,540	per annum
Council Members	6,570	6,410	per annum

	Appointments		Remuneration £000s	
	From	To	2007-08	2006-07
Chair - Dr Peter Ringrose	01/05/2003	30/04/2009	16	15
Deputy Chair and CE - Professor Julia Goodfellow CBE	01/01/2002	31/08/2007	77	130
Council Members				
Mr David Brightman	01/08/2003	31/03/2009	7	6
Professor Howard Dalton FRS	01/04/2002	31/03/2010	0	0
Professor Anne Dell FRS	01/04/2007	31/03/2010	6	0
Professor David Delpy FRS	01/04/2004	31/08/2007	3	6
Professor Robert Freedman	01/04/2002	31/03/2008	9	10
Professor Peter Fryer FREng	01/05/2006	30/04/2009	7	6
Professor Chris Gilligan	01/04/2003	31/03/2009	7	6
Mrs Sarah Haywood	24/10/2005	23/10/2009	0	0
Professor Jackie Hunter	01/04/2004	31/03/2010	7	6
Professor Quintin McKellar FRSE*	01/04/2005	31/03/2011	9	6
Dr Alistair Penman FIFST	01/04/2002	31/03/2008	9	8
Professor Dame Nancy Rothwell FRS*	01/04/2005	31/12/2008	7	6
Dr Malcolm Weir*	01/04/2005	31/03/2011	7	6

*During 2007-08, the Department for Innovation, Universities and Skills approved the reappointment of Professors McKellar and Rothwell and Dr Weir to Council.

The total emoluments of the Chairman were honoraria of £15,750 (2006-07: £15,255). The Chairman's appointment is non-pensionable and there is no entitlement to compensation for loss of office. Dr Peter S Ringrose was appointed Chairman of BBSRC initially for a period of four years from 1 May 2003. This was subsequently extended by a further two years with his appointment ending 30 April 2009. The role of Deputy Chair was not replaced during 2007-08 following the end of Professor Goodfellow's fixed term period appointment.

Committee Chairs and members

The remuneration of Committee Chairs and Members is set by the Financial Management Group of the Research Councils.

	2007-08	2006-07	
Committee Chairman	£230	£215	per day
Committee Members	£170	£160	per day

Research Directors of Sponsored Institutes

Details of sponsored research institute Directors' emoluments are published in the statutory company and charity accounts prepared by each institute.

Chief Executive and BBSRC Directors

Remuneration Committee

The Chief Executive's remuneration is determined by the Permanent Secretary of the Department for Innovation, Universities and Skills. The Permanent Secretary is advised by a Remuneration Committee chaired by the Director General of Research Councils. The Chair of BBSRC is consulted.

BBSRC Remuneration Board

The remuneration of BBSRC Directors and Directors of sponsored institutes is reviewed and adjusted annually by the Council Remuneration Board. The Board is chaired by the Chair of Council and other membership comprises the Chief Executive and three Council Members, at least one of whom must have an industry background. Members of the Remuneration Board are listed on page 31.

Policy

Subject to successful performance, the Chief Executive's salary rises by a cost of living increase and a pre-determined incremental increase up to a salary ceiling. In addition, a non-consolidated, non-pensionable annual bonus may be awarded for performance towards objectives agreed by BBSRC and the Chief Executive.

The BBSRC Remuneration Board reviews performance against a series of objectives, categorised between fundamental, value-added or breakthrough, in determining each Director's annual salary level and any bonus. The Board will also take account of public sector pay constraints, relativities, job weight and any special factors. Increases are normally awarded from 1 July annually.

Contractual policy

Following a two-year extension, Professor Julia M Goodfellow's fixed term period appointment as Chief Executive ended on 31 August 2007. As at 31 March 2008 the recruitment process for a new Chief Executive was continuing, with an appointment expected during 2008-09. Mr Visscher was promoted from Executive Director to Interim Chief Executive for the intervening period.

The total emoluments of Professor Goodfellow and Mr Visscher are detailed overleaf. There were no receipts or benefits in kind for either.

BBSRC Directors are members of the BBSRC Executive Group. The Directors are on indefinite contracts, similar to the majority of BBSRC staff, with notice periods between one and three months. Mr Gemmill was promoted from Deputy Executive Director to Interim Executive Director for the duration of Mr Visscher's tenure as Interim Chief Executive.

Directors' remuneration for 2007-08 are detailed overleaf. No Director is in receipt of benefits in kind. The remuneration of Mr Gemmill and Mr Visscher are shown for 12 months, covering their standard and interim positions.

Remuneration of senior employees (audited information)

	Chief Executive To 31 August 2008	Interim Chief Executive From 1 September 2008	Director of Science and Technology Group	Director of Human Resources Group	Interim Executive Director From 1 September 2008	Director of Corporate Science Group
	Professor Julia Goodfellow	Mr Steve Visscher	Professor Nigel Brown	Mr Peter Swinburne	Mr Paul Gemmill	Dr Doug Yarrow
Salary and allowances paid in 2007-08	£76,757	£124,859	£107,015	£84,726	£77,681	£91,913
Salary and allowances paid in 2006-07 (restated)	£121,897	£111,417	£102,714	£81,820	£70,004	£86,764
Real increase in pension and lump sum at age 60	£5,000 – 7,500	£15,000 – 17,500	£0 – 2,500	£2,500 – 5,000	£0 – 2,500	£10,000 – 12,500
Total accrued pension and lump sum at age 60 as at 31 March 2008	£165,000 – 170,000	£185,000 – 190,000	£5,000 – 10,000	£55,000 – 60,000	£5,000 – 10,000	£155,000 – 160,000
Cash equivalent transfer value as at 1 April 2007	£852,000	£777,000	£79,000	£395,000	£47,000	£817,000
Cash equivalent transfer value as at 31 March 2008	£884,000	£974,000	£128,000	£485,000	£78,000	£995,000
Real increase in cash equivalent transfer value 2007-08	£32,000	£197,000	£49,000	£90,000	£31,000	£160,000

The average annual salary increase for the above senior employees was 7% for 2007-08. This includes the additional payments for staff temporarily deputising in higher band roles.

Salary and allowances

Salary and allowances covers both pensionable and non-pensionable amounts and includes: gross salaries; performance pay or bonuses; over-time; allowances and any ex-gratia payments. It does not include amounts which are a reimbursement of expenses directly incurred in the performance of an individual's duties.

Benefits in kind

The monetary value of benefits in kind covers any benefits provided by the employer and treated by HM Revenue and Customs as a taxable emolument.

Cash Equivalent Transfer Value (CETV)

A Cash Equivalent Transfer Value (CETV) is the actuarially assessed capitalised value of the pension scheme benefits accrued by a member at a particular point in time. The benefits valued are the member's accrued benefits and any contingent spouse's pension payable from the scheme. A CETV is a payment made by a pension scheme or arrangement when the member leaves a scheme and chooses to transfer the benefits accrued in the former scheme. The pension figures shown relate to the benefits that the individual has accrued as a consequence of their total membership of the pension scheme, not just their service in a senior capacity to which disclosure applies. The CETV figures include the value of any pension benefit in another scheme or arrangement which the individual has transferred to the Research Councils' pension arrangement and for which the CS Vote has received a transfer payment commensurate with the additional pension liabilities being assumed. They also include any additional pension benefit accrued to the member as a result of their purchasing additional years of pension service in the scheme at their own cost.

Real increase in the value of the CETV

The real increase in the value of the CETV reflects the increase effectively funded by the employer. It takes account of the increase in accrued pension due to inflation, contributions paid by the employee (including the value of any benefits transferred from another pension scheme or arrangement) and uses common market valuation factors for the start and end of the period.

Mr Steve Visscher Date: 26 June 2008
Interim Chief Executive and Accounting Officer

Annual Accounts 2007-08

Statement of Responsibilities of Council and Chief Executive as Accounting Officer

Under Section 2(2) of the Science and Technology Act 1965, the Secretary of State for Innovation, Universities and Skills with the consent of the Treasury has directed BBSRC to prepare for each financial year a statement of accounts in the form and on the basis set out in the Accounts Direction. The accounts are prepared on an accruals basis and must give a true and fair view of the state of affairs of BBSRC and of its net expenditure, recognised gains and losses and cash flows for the financial year.

In preparing the Accounts, the Accounting Officer is required to comply with the requirements of the Government Financial Reporting Manual (www.financial-reporting.gov.uk) and in particular to:

- observe the Accounts Direction issued by the Secretary of State for Innovation, Universities and Skills, including the relevant accounting and disclosure requirements, and apply suitable accounting policies on a consistent basis;
- make judgements and estimates on a reasonable basis;
- state whether applicable accounting standards as set out in the Government Financial Reporting Manual have been followed, and disclose and explain any material departures in the financial statements; and
- prepare the financial statements on a going concern basis.

The Secretary of State has designated the Chief Executive as Accounting Officer of BBSRC. The responsibilities of an Accounting Officer, including responsibility for the propriety and regularity of the public finances for which the Accounting Officer is answerable, for keeping proper records and for safeguarding BBSRC's assets, are set out in the NDPB Accounting Officer Memorandum issued by the HM Treasury and published in *'Managing Public Money'*.

Statement By Chief Executive On Internal Control

1. Scope of Responsibility

As Accounting Officer, I have responsibility for maintaining a sound system of internal control that supports the achievement of BBSRC's policies, aims and objectives, whilst safeguarding the public funds and department assets for which I am personally responsible, in accordance with the responsibilities assigned to me and disclosed in 'Managing Public Money'.

The DIUS Accounting Officer has designated me as the Accounting Officer of BBSRC, responsible for the effective, safe and efficient operation of the Council in accordance with the Management Statement.

2. The Purpose of the System of Internal Control

The system of internal control is designed to manage risk to a reasonable level rather than eliminate all risk of failure to achieve policies, aims and objectives; it can therefore only provide reasonable and not absolute assurance of effectiveness. The system of internal control is based on an ongoing process designed to identify and prioritise the risks to the achievement of BBSRC's policies, aims and objectives, to evaluate the likelihood of those risks being realised and the impact should they be realised, and to manage them efficiently, effectively and economically. The system of internal control has been in place in BBSRC for the year ended 31 March 2008 and up to the date of approval of the annual report and accounts, and accords with HM Treasury guidance.

3. Capacity to Handle Risk

BBSRC gives leadership to the process by a number of means, including:

1) setting out a risk management policy and strategy;
2) signing up to risk management assurance statements at the most senior levels within BBSRC and its sponsored institutes;
3) updating and reviewing the register of key risks at least quarterly by senior management and at every Audit Board meeting;
4) reinforcing risk management at staff level through the development and implementation of group-level risk registers in support of those at corporate level;
5) a formal PRINCE 2 based project management approach with embedded risk management is used for major activities, including the business critical projects listed below;
6) hosting the RCUK project for transparent approach to costing (TRAC) methodology and the funding assurance programme (FAP).

The interests of key stakeholders and operational partners are also considered.

4. The Risk and Control Framework

Risk management and internal control are considered on a regular basis by BBSRC Executive and Audit Board during the year. The Audit Board meets three times a year and plays an important role in overseeing the internal control arrangements for BBSRC and its sponsored institutes. The Board reviews the external audit management letters arising from BBSRC and from BBSRC sponsored institutes, and approves the internal audit programme plan for the year in the light of the key risks identified as part of the risk management framework. In particular business critical projects are picked out for special assessment by the BBSRC Executive and Audit Board on an ongoing basis.

The activities of the Research Councils' Internal Audit Service (RCIAS) in respect of BBSRC and its sponsored institutes are reviewed by Audit Board and the scope of the internal audit plan for the coming year, which is based on the overall assessment of risk, is agreed. With this overarching view of audit activities, Audit Board plays a pivotal role in evaluating and reviewing the evidence supporting the Chief Executive's assurance statement on internal control.

The Council's role, in terms of risk management, is to oversee the work of Audit Board through review of Audit Board minutes and key risks highlighted by the Audit Board Chair.

BBSRC Executive Group and Audit Board regularly review the strategic and operational risk management registers and framework and receive reports on business critical projects pertaining through the year.

The business critical projects at 31 March 2008 were:

1. IAH Pirbright redevelopment. The project is planned to replace the current facilities with state-of-the-art flexible facilities including areas with the highest level of bio-security. This unit, allied to the relocation of the Virology Department of the Veterinary Laboratories Agency of the Department for Environment, Food and Rural Affairs (Defra), will be able to respond to future national threats such as outbreaks of the Bluetongue virus.

2. IAH long-term sustainability. Ensure that IAH is sustainable for the long-term taking account of the impact of Full Economic Costing, changes in Defra funding and the review following the 2007 Foot and Mouth Disease outbreak.

3. Roslin Institute, University of Edinburgh. A new international centre of research in the biosciences will bring together researchers currently at the Roslin Institute, Royal (Dick) School of Veterinary Studies of the University of Edinburgh, the Neuropathogenesis Unit and TSE Programme of the IAH and the Scottish Agricultural College. The Institute will also benefit from collaborative links with the adjacent Moredun Research Institute.

4. Impact of Defra funding changes on institute sustainability. Focusing investment on protecting key science capabilities that underpin BBSRC's mission.

5. Governance changes. Implement the post Follett review governance changes of the BBSRC-sponsored institutes.

6. Deliver a Shared Services Centre (SSC) for all back office transactional services for BBSRC whilst minimising the risk to BBSRC core business.

The SSC implementation project will deliver a single administrative support service for all UK Research Councils. Initially the SSC will provide HR, Finance, Procurement and IS services, however in the longer term it is also planned to add Grants Processing. This project is business critical for BBSRC as it fundamentally changes the way back-office services are provided, effectively through outsourcing them to the new SSC organisation. The project operates across all seven Councils and is directed by a Project Board comprised of representatives of each Council, the SSC itself and a number of independent members, the Board is chaired by the Chair of the RCUK Executive Group. The principal risks for the Project, and therefore for the seven Councils, are the potential for cost and time overruns and benefit realisation and these are a clear focus for the Project Board. In June 2008 there is an exercise in hand to revisit plans for shared services implementation that will result in delays in the previous timetable. As a stakeholder in the Project, BBSRC has its own Group who manages its participation and associated risks in the Project. The high level risks and mitigation strategies are regularly scrutinised by BBSRC's Executive Management Group. Governance arrangements are regularly monitored by BBSRC's Audit Board.

Directors' Assurance Statements on Internal Control (DASIC) are completed by each BBSRC Institute Director and Swindon Office Group Director. The DASIC provides assurance to the BBSRC Chief Executive that a sound system of internal control has been in place throughout the BBSRC and its sponsored institutes for the year. For 2007/08 this included evaluation of assurance in areas including risk management, corporate governance, financial and project management, research quality assurance and SSC transition.

On behalf of RCUK, BBSRC host the Research Councils funding assurance programme (FAP) which reviews the regularity of expenditure on Research Council grants at universities and other research organisations. The programme examines the control environment and is an important element of the risk management framework. BBSRC also host the quality assurance and validation (QAV) of the TRAC methodology for determining the full economic cost of research in universities. This has been agreed as an additional assurance requirement for all Councils following the introduction of Dual Support reform and the implementation of full economic costing by research organisations. An annual report for the Accounting Officers is produced. This states the level of assurance obtained through the FAP and QAV processes in the course of the year.

5 Review of Effectiveness

As Accounting Officer, I have responsibility for reviewing the effectiveness of the system of internal control. My review of the effectiveness of the system of internal control is informed by the work of the internal auditors, and the Executive Directors within BBSRC who have responsibility for the development and maintenance of the internal control framework, and comments made by the external auditors in their management letter and other reports. I have been advised on the implications of the result of my review of the effectiveness of the system of internal control by Council and Audit Board and a plan to address weaknesses and ensure continuous improvement of the system is in place.

The principal elements of support for the Accounting Officer's assurance statement are the work of the Audit Board and the BBSRC Executive including the review of Business Critical projects, the annual report from the Head of RCIAS, the DASIC, the risk management frameworks developed by BBSRC and its sponsored institutes and responses to external management letters which identify where control gaps exist.

BBSRC received a positive reasonable assurance rating from the Director of Internal Audit for 2007-08, which included substantial assurances for Swindon Office, the hosted joint units and all but one BBSRC institute. The RCIAS plan for 2008/09 includes audits for HR, financial transactions, business continuity planning, Shared Services Centre transition and the institute strategic programme grants.

As part of BBSRC's response to the 2007 Foot and Mouth Disease outbreak, BBSRC commissioned Sir John Beringer to lead an independent review of IAH's funding, governance and risk management. Sir John reported to BBSRC Council on 9 April 2008 and the Executive will be taking forward his recommendations during 2008/09.

The BBSRC sponsored institutes have their own Risk Management Assurance Framework as part of the accounting requirements within the charity sector and to underpin BBSRC's approach.

In general, controls are in place which can provide a reasonable degree of assurance that operational, financial and reputational risks are managed appropriately. This is not based on a culture of risk aversion but one where risks are considered as part of the decision making process.

Mr Steve Visscher Date: 26 June 2008
Interim Chief Executive and Accounting Officer

The Certificate And Report Of The Comptroller And Auditor General To The Houses Of Parliament

I certify that I have audited the financial statements of Biotechnology and Biological Sciences Research Council for the year ended 31 March 2008 under the Science and Technology Act 1965. These comprise the Statement of Net Expenditure, the Balance Sheet, the Cashflow Statement and Statement of Recognised Gains and Losses and the related notes. These financial statements have been prepared under the accounting policies set out within them. I have also audited the information on the Remuneration Report that is described in that report as having being audited.

Respective responsibilities of the Council, Chief Executive and Auditor

The Council and Chief Executive as Accounting Officer, are responsible for preparing the Annual Report, the Remuneration Report and the financial statements in accordance with the Science and Technology Act 1965 and Secretary of State for the Department for Innovation, Universities and Skills directions made thereunder and for ensuring the regularity of financial transactions. These responsibilities are set out in the Statement of Council and Chief Executive's Responsibilities.

My responsibility is to audit the financial statements and the part of the remuneration report to be audited in accordance with relevant legal and regulatory requirements, and with International Standards on Auditing (UK and Ireland).

I report to you my opinion as to whether the financial statements give a true and fair view and whether the financial statements and the part of the Remuneration Report to be audited have been properly prepared in accordance with the Science and Technology Act 1965 and Secretary of State for the Department for Innovation, Universities and Skills directions made thereunder. I report to you whether, in my opinion, certain information given in the Annual Report, which comprises the Chairman's statement, Chief Executive's report and the rest of the Management Commentary, is consistent with the financial statements. I also report whether in all material respects the expenditure and income have been applied to the purposes intended by Parliament and the financial transactions conform to the authorities which govern them.

In addition, I report to you if the Biotechnology and Biological Sciences Research Council has not kept proper accounting records, if I have not received all the information and explanations I require for my audit, or if information specified by HM Treasury regarding remuneration and other transactions is not disclosed.

I review whether the Statement on Internal Control reflects the Biotechnology and Biological Sciences Research Council compliance with HM Treasury's guidance, and I report if it does not. I am not required to consider whether this statement covers all risks and controls, or form an opinion on the effectiveness of the Biotechnology and Biological Sciences Research Council's corporate governance procedures or its risk and control procedures.

I read the other information contained in the Annual Report and consider whether it is consistent with the audited financial statements. I consider the implications for my report if I become aware of any apparent misstatements or material inconsistencies with the financial statements. My responsibilities do not extend to any other information.

Basis of audit opinion

I conducted my audit in accordance with International Standards on Auditing (UK and Ireland) issued by the Auditing Practices Board. My audit includes examination, on a test basis, of evidence relevant to the amounts, disclosures and regularity of financial transactions included in the financial statements and the part of the Remuneration Report to be audited. It also includes an assessment of the significant estimates and judgements made by the Council and Accounting Officer in the preparation of the financial statements, and of whether the accounting policies are most appropriate to the BBSRC's circumstances, consistently applied and adequately disclosed.

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

Opinions

Audit Opinion

In my opinion:

a) the financial statements give a true and fair view, in accordance with the Science and Technology Act 1965 and directions made thereunder by the Secretary of State for the Department for Innovation, Universities and Skills, of the state of the Biotechnology and Biological Sciences Research Council's affairs as at 31 March 2008 and of its Net Expenditure for the year then ended;

b) the financial statements and the part of the Remuneration Report to be audited have been properly prepared in accordance with the Science and Technology Act 1965 and Secretary of State for the Department for Innovation, Universities and Skills directions made thereunder; and

c) information given within the Annual Report, which comprises the Chairman's statement, Chief Executive's report and the rest of the Management Commentary is consistent with the financial statements.

Audit Opinion on Regularity

In my opinion, in all material respects the expenditure and income have been applied to the purposes intended by Parliament and the financial transactions conform to the authorities which govern them.

Report

I have no observations to make on these financial statements.

T J Burr
Comptroller and Auditor General
Date: 4 July 2008

National Audit Office
151 Buckingham Palace Road
Victoria
London SWIW 9SS

Statement of Net Expenditure for the year ended 31 March 2008

	NOTE	£'000	2007-08 £'000	2006-07 £'000
EXPENDITURE				
Research and Capital Grants	2	**333,472**		306,349
Training Awards and Fellowships	2	**46,546**		44,542
Staff costs	3	**9,152**		9,089
Other operating costs	4	**13,386**		11,190
Research institute staff restructuring	6	**5,494**		11,608
Depreciation and impairment	9	**7,473**		7,606
Notional Cost of Capital	5	**8,097**		7,673
TOTAL OPERATING COST FOR THE YEAR			**423,620**	398,057
INCOME AND OTHER ADJUSTMENTS				
Other Operating Income		**819**		551
Recovery of IT service to institutes		**3,270**		2,750
Other recoveries		**2,143**		672
Loss on disposals and demolition of fixed assets	8	**(157)**		(375)
			(6,075)	(3,598)
NET EXPENDITURE FOR THE YEAR			**417,545**	394,459
General Reserve Surplus Brought Forward			**57,493**	54,246
Net Expenditure for the year		**(417,545)**		(394,459)
Net Parliamentary Funding from DIUS	14	**393,626**		377,070
Net Parliamentary Funding from other Research Councils	14	**7,859**		4,777
Net Parliamentary Funding from other Government Departments	14	**4,312**		2,703
Net Parliamentary Funding from other bodies	14	**405**		463
Reversal of Notional Cost of Capital	5	**8,097**		7,673
Transfer to match depreciation	15	**5,508**		4,921
Transfer to match net book value of disposals	15	**-**		99
CHANGE IN GENERAL RESERVE SURPLUS FOR THE YEAR			**2,262**	3,247
GENERAL RESERVE SURPLUS CARRIED FORWARD			**59,755**	57,493

All activities are regarded as continuing

The notes on page 53 to 67 form part of these accounts

Balance Sheet as at 31 March 2008

	NOTE	31 March 2008 £'000	31 March 2008 £'000	31 March 2007 £'000
FIXED ASSETS				
Tangible	11	**224,516**		209,546
Investments	10	**536**		666
			225,052	210,212
CURRENT ASSETS				
Debtors:				
- due within one year	12i	**29,398**		28,310
- due after one year	12ii	**17,161**		16,750
		46,559		45,060
Cash at bank and in hand	16iii	**8,239**		1,565
		54,798		46,625
CURRENT LIABILITIES				
Creditors falling due within one year	13	**(23,344)**		(18,544)
NET CURRENT ASSETS			**31,454**	28,081
TOTAL ASSETS LESS CURRENT LIABILITIES			**256,506**	238,293
Provisions for liabilities	7		**(14,104)**	(11,416)
NET ASSETS			**242,402**	226,877
Financed by:				
RESERVES				
Revaluation reserve	15		**182,647**	169,384
General reserve	15		**59,755**	57,493
TOTAL GOVERNMENT FUNDS			**242,402**	226,877

Mr Steve Visscher
Interim Chief Executive and Accounting Officer

Date: 26 June 2008

The notes on page 53 to 67 form part of these accounts

Cash Flow Statement for the year ended 31 March 2008

	NOTE		2007-08 £'000	2006-07 £'000
NET CASH OUTFLOW FROM OPERATING ACTIVITIES	16(i)		**(395,901)**	(384,265)
CAPITAL EXPENDITURE				
Payments to acquire tangible fixed assets	16(v)	**(3,603)**		(4,741)
Purchase of investments	16(v)	**-**		(500)
(Payments)/Receipts from sale of fixed assets	16(vi)	**(24)**		53
NET CASH OUTFLOW FROM CAPITAL EXPENDITURE AND RECEIPTS			**(3,627)**	(5,188)
NET CASH OUTFLOW BEFORE FINANCING			**(399,528)**	(389,453)
NET CASH INFLOW FROM FINANCING	14		**406,202**	385,013
INCREASE/(DECREASE) IN CASH	16(ii)		**6,674**	(4,440)

Statement of Recognised Gains and Losses for year ended 31 March 2008

		2007-08 £'000	2006-07 £'000
Net Expenditure for the Year		**(417,545)**	(394,459)
Valuation additions	11	**10,200**	1,750
Revaluation by indexation	9	**8,571**	14,284
RECOGNISED (LOSSES) AND GAINS FOR THE YEAR		**(398,774)**	(378,425)

The notes on page 53 to 67 form part of these accounts.

Notes to the Accounts

1. ACCOUNTING POLICIES

a) Basis of Accounting

i) These accounts have been prepared in accordance with the Accounts Direction issued by the Secretary of State for the Department for Innovation, Universities and Skills (DIUS), pursuant to Section 2(2) of the Science and Technology Act 1965 and follow the 2007-08 Government Financial Reporting Manual (FREM) www.financial-reporting.gov.uk. The accounting policies contained in the FReM follow UK generally accepted accounting practice for companies (UK GAAP) to the extent that it is meaningful and appropriate to the public sector. BBSRC's accounting policies have been applied consistently in dealing with items considered material in relation to the accounts.

ii) BBSRC is dependent on funding from DIUS to meet liabilities falling due within future years. As part of the Comprehensive Spending Review 2007, funding has been agreed to 2010/11. BBSRC have no reason to believe that future funding from DIUS will not be forthcoming after this spending review period, therefore the accounts are produced on a going-concern basis.

b) Accounting Convention

i) These accounts have been prepared under the historical cost convention modified to account for the revaluation of fixed assets.

c) Tangible and Intangible Fixed Assets

i) Capital expenditure includes the purchase of equipment valued at £3,000 or more, land and buildings.

ii) Tangible and intangible fixed assets are included at cost or valuation in existing use. The Council owns land and buildings, which are leased to a number of grant-aided institutes, all of whom are constituted as companies limited by guarantee and as registered charities and who prepare separate audited accounts. Additions to these assets may be funded wholly or in part from sources other than the BBSRC. Any funding contribution made by the BBSRC, in the form of capital grants, is included within Research Grants in the Statement of Net Expenditure.

Where institutes carry out developments that result in a material change in the value of the Council's owned assets, this is disclosed as a fixed asset valuation addition within these accounts based on a professional valuation at the Balance Sheet date.

iii) The basis of valuation is depreciated replacement cost in the case of specialised scientific buildings or open market value for non-specialised buildings. Valuations are adjusted annually to the Balance Sheet date by using appropriate published indices and statistics. A full revaluation of land and buildings is carried out at least every five years except for buildings under construction or sites being prepared for sale.

Some buildings with similar remaining lives have been grouped for valuation and depreciation purposes.

iv) Increased depreciation charges arising from the revaluation are matched by annual transfers from the revaluation reserve to the general reserve. On disposal of a revalued asset, that element of the revaluation reserve that becomes realised as a result is also transferred to the general reserve.

v) In the opinion of BBSRC, there is no material difference between the historic cost of equipment, fixtures and fittings and their current cost. Accordingly these assets have not been revalued and this position is kept under review.

vi) Provision is made for depreciation on all tangible fixed assets at rates calculated to write off the cost or the valuation of each asset (or group of assets) to its estimated residual value evenly over its expected useful life. An expected useful life is assessed at each location by the valuer. Buildings are not depreciated in the year of acquisition whilst a full year's depreciation is charged in the year of disposal. Expected useful lives are as follows:

Freehold Land	-	not depreciated
Depreciated replacement cost buildings	-	up to 60 years
Agricultural buildings	-	up to 60 years
Dwellings	-	up to 60 years
Office and Computing Equipment	-	3 to 5 years
System Software	-	5 years
Motor Vehicles	-	up to 4 years
Assets Under Construction	-	not depreciated until brought into use

d) Investments

Investments are stated at cost less provision for any impairment in value.

e) Ownership of Equipment Purchased with BBSRC Research Grants

Equipment purchased by an institution with research grant funds supplied by the Council belong to the institution and are not therefore tangible fixed assets of the Council. Through the Conditions of Grant applied to funded institutions, the Council reserves the right to determine how such equipment shall be disposed of and how any disposal proceeds are to be utilised.

f) Grant-in-aid

Grant-in-aid for revenue purposes is recognised as a financing flow and thus credited to the General Reserve. Grant-in-aid applied for the finance of specific assets is credited to the Government Grant Reserve and is released to income over the estimated useful lives of the related assets.

g) Research Grants

Research grants are charged to the Statement of Net Expenditure in the period to which they relate.

h) Foreign Currencies

Assets and Liabilities denominated in foreign currencies are translated at the rates of exchange ruling at the balance sheet date. Transactions in foreign currencies are recorded at the rate ruling at the time of the transaction. All exchange differences are taken to the Statement of Net Expenditure.

i) Value Added Tax

As the Council is partially exempt for VAT purposes, all expenditure and fixed asset additions are shown inclusive of VAT where applicable. Residual input tax reclaimable by the application of the partial exemption formula is taken to the Statement of Net Expenditure as Other Operating Income. Income is shown net of VAT.

j) Retirement Costs

Contributions to pension schemes (currently 21.3%) are recorded as expenditure. Payments by the Council of early retirement lump sums are recoverable from the Research Councils' Pension Schemes when recipients reach normal retirement age. Recoverable amounts are recognised as debtors in these accounts and set off against annual staff restructuring costs. See page 40 for further details.

k) Notional Cost of Capital

A charge, reflecting the cost of capital utilised by the Council is included in operating costs. The charge is calculated at the real rate set by HM Treasury (currently 3.5%) on the average of opening and closing assets less liabilities, except for balances with HM Paymaster General.

l) Provisions

When BBSRC has taken a decision to fund a programme of redundancies, then the associated costs are provided for. The provision for the on-going Annual Compensation Payments is transferred from the Major Institute Restructuring and any remaining balance released once the redundancies are complete.

Provisions have been made in accordance with FRS 12 for redundancy costs and system termination fees arising from the transition to the Shared Services Centre. See Note 7b.

2. RESEARCH & CAPITAL GRANTS AND TRAINING AWARDS

	2007-08 £'000	2006-07 £'000
Responsive Research Grants	**143,057**	126,313
Core Strategic Grants	**68,952**	73,641
Research Initiatives	**60,767**	52,168
Equipment and Facilities	**12,553**	11,736
Capital and Buildings	**48,143**	42,491
	333,472	306,349
Training Awards and Fellowships	**46,546**	44,542
	380,018	350,891
Beneficiaries:		
Universities	**220,084**	199,976
Research Institutes (See Note 21)	**138,314**	132,205
Other Research Councils and other organisations	**21,620**	18,710
	380,018	350,891

3. STAFF COSTS

For BBSRC Office, Bioscience IT Services (BITS) and hosted Research Councils' Joint Services.

	2007-08 £'000	2006-07 £'000
Salaries and wages	**8,666**	8,400
Social Security costs	**686**	673
Pension costs	**1,719**	1,670
Other fees and honoraria	**328**	344
	11,399	11,087
Less Joint Services staff	**(2,361)**	(2,144)
Administrative and BITS staff on payroll	**9,038**	8,943
Temporary Administration and BITS agency staff	**114**	146
TOTAL	**9,152**	9,089

AVERAGE STAFF NUMBERS

	Full Time Equivalents (FTE)	
	2007-08 No.	2006-07 No.
Administrative	**183.2**	184.8
BITS	**40.9**	41.2
Administrative and BITS staff on payroll	**224.1**	226.0
Joint Services	**59.5**	60.7
Staff on payroll	**283.6**	286.7
Temporary agency staff	**5.5**	4.0
	289.1	290.7

Further information on staff numbers and pensions are contained in the management commentary and remuneration report. Details of the pensions scheme are on page 40.

THE FOLLOWING NUMBER OF EMPLOYEES RECEIVED REMUNERATION FALLING WITHIN THE FOLLOWING RANGES:

	2007-08 No.	2006-07 No.
£140,000 to £149,998	1	-
£130,000 to £139,999	-	1
£120,000 to £129,999	1	1
£110,000 to £119,999	-	-
£100,000 to £109,999	2	2
£90,000 to £99,999	1	-
£80,000 to £89,999	1	2
£70,000 to £79,999	1	3

Remuneration includes Employers' Pension Scheme Contributions of 21.3% (2006-07: 21.3%).

4. OTHER OPERATING COSTS

	2007-08 £'000	2006-07 £'000
Maintenance, repairs and cleaning	**611**	583
Rent, rates and insurance	**237**	399
External audit	**44**	48
Internal audit	**207**	208
Office supplies	**378**	377
Computing expenses	**947**	980
Travel, subsistence and hospitality	**1,068**	972
Professional fees and management consultancy*	**1,788**	2,871
Central Purchasing by BITS	**3,586**	3,055
Shared Services Centre operating costs	**122**	-
Shared Services Centre set-up costs*	**2,456**	446
Other	**1,942**	1,251
	13,386	11,190

*Shared Services Centre set up costs of £446,000 for 2006-2007 were originally shown within professional fees and management consultancy.

5. NOTIONAL COST OF CAPITAL

	2007-08 £'000	2006-07 £'000
Notional Cost of Capital	**8,097**	7,673

This notional cost is included in the accounts to reflect a cost for the use of capital in the business in the year, as the Council has no specific interest bearing debt. In accordance with Treasury guidance, the calculation is based on a 3.5% (2006-07: 3.5%) rate of return on average net assets employed at cost or valuation.The net assets were £231.6M (2006-07: £219.2M) excluding the average cash balance with the Paymaster General of £3.1M (2006-07: £0.5M).

The reported notional cost is subsequently reversed in the Statement of Net Expenditure Account in accordance with the Government Financial Reporting Manual. Notional Interest as Cost of Capital is, however, reported in the Council's Departmental Expenditure Limit (DEL) under Resource Accounting and Budgeting where it forms part of Council's Resource control envelope account to Treasury.

6. RESEARCH INSTITUTE STAFF RESTRUCTURING

	2007-08 £'000	2006-07 £'000
Annual Compensation Payments (ACP)	**3,031**	2,583
Redundancy payments	**1,436**	6,599
Early Retirement Lump Sums (ERLS)	**887**	1,933
Other costs	**70**	4,701
	5,424	15,816
Recoverable ACP and redundancy payments	**(1,370)**	(4,243)
Recoverable ERLS	**(459)**	(2,042)
Provided for (See Note 7)	**(2,452)**	(4,234)
	1,143	5,297
Increase provision for ACP and restructuring cost (See Note 7)	**4,604**	6,327
Release from existing restructuring provisions (See Note 7)	**(253)**	(16)
Net Cost	**5,494**	11,608

The total number of redundancies during 2007-08 was 60 (2006-07: 171).

7. PROVISIONS FOR LIABILITIES

7a. PROVISIONS FOR RESTRUCTURING

	Annual Compensation Payments £'000	**Major Institute Restructuring £'000**	**Shared Services Centre (See Note 7b) £'000**	**Total 2007-08 £'000**	Total 2006-07 £'000
At 1 April 2007	**5,673**	**5,743**	**-**	**11,416**	9,339
Amount provided in year	**761**	**3,843**	**789**	**5,393**	6,327
Amount released in year	**-**	**(253)**	**-**	**(253)**	(16)
Transfers between provisions	**544**	**(544)**	**-**	**-**	-
Amount expended in year	**(1,526)**	**(926)**	**-**	**(2,452)**	(4,234)
Total Provisions at 31 March 2008	**5,452**	**7,863**	**789**	**14,104**	11,416

Annual Compensation Payments (ACP) are payments to early retirees in advance of their pension entitlements under the Research Councils' Pension Schemes.

Major institute restructuring includes provisions for redundancies due to the implementation of revised scientific strategies and the redeployment of Core Strategic Grant funding (£2.5M at 31 March 2008), provision for associated accommodation expenditure (£1.9M at 31 March 2008), provision for staff pension transfers (£3.2M at 31 March 2008) and legal costs (£0.3M at 31 March 2008).

7b. PROVISIONS FOR SHARED SERVICES CENTRE

The Research Councils and the RCUK Shared Services Centre Ltd are in the process of developing a Shared Services Centre to carry out the central functions of HR, Finance, Procurement and IS across the councils. As a result some research councils will incur redundancy costs, particularly where existing staff live a distance from Swindon where the Centre will be situated.

The Research Councils have collectively agreed that they will be jointly liable for all necessary redundancies. The Councils have calculated their likely redundancy liabilities in order to make a 2007/08 provision. A funding allocation model was developed and agreed by all the Research Councils and this identified the proportion of SSC project spend and liability that each individual Council would incur. The total provision for redundancies has been apportioned using this model.

The table below shows, for each council the amount that they need to provide for redundancies of their own staff in accordance with FRS 12 as determined at 31 March 2008. Some Councils will incur a cost for terminating their existing systems, and these costs are being shared between the councils. The provision for all seven councils are then split and shared in accordance with an agreed predetermined ratio as detailed in the table below. Each Council takes their agreed share of their own liability and then contributes or receives contributions from the other research councils to reach the provision which is recorded in their own balance sheet.

	AHRC £'000	**BBSRC £'000**	ESRC £'000	EPSRC £'000	MRC £'000	NERC £'000	STFC £'000	TOTAL £'000
Provision required for the Council's own redundancies	68	**152**	-	-	999	1,620	-	2,839
System termination fee	-	-	-	-	1,000	-	-	1,000
Total provision	68	**152**	-	-	1,999	1,620	-	3,839
% of liability to be borne by the Council	1.33%	**20.54%**	1.83%	8.24%	26.98%	20.54%	20.54%	100%
Amount borne by the Council	(1)	**(31)**	-	-	(540)	(333)	-	(905)
Contributions toward councils redudancy and system termination provision received from/provided to other councils	(16)	**668**	70	316	(423)	(499)	789	905
Net provision required for each Council	51	**789**	70	316	1,036	788	789	3,839

Further costs may be incurred in future years.

8. LOSS ON DISPOSALS OR DEMOLITION OF FIXED ASSETS

	2007-08 £'000	2006-07 £'000
Payments on disposals of fixed assets	**(126)**	(47)
Less: Net Book Value of assets sold/demolished	**(31)**	(328)
Loss on disposals and demolition of fixed assets	**(157)**	(375)

9. FIXED ASSETS

	TANGIBLE (See Note 11) £'000	INVESTMENTS (See Note 10) £'000	Total £'000
At 1 April 2007			
At cost or valuation	**311,980**	**2,000**	**313,980**
Depreciation and impairment	**(102,434)**	**(1,334)**	**(103,768)**
Net Book Value	**209,546**	**666**	**210,212**
Additions including valuation additions*	**13,773**	**-**	**13,773**
Depreciation and impairment	**(7,343)**	**(130)**	**(7,473)**
Disposals	**(31)**	**-**	**(31)**
Revaluation by indexation	**8,571**	**-**	**8,571**
Net Book Value At 31 March 2008	**224,516**	**536**	**225,052**
Comprising:			
At cost or valuation	**337,198**	**2,000**	**339,198**
Depreciation and impairment	**(112,682)**	**(1,464)**	**(114,146)**
	224,516	**536**	**225,052**

* See Accounting Policies (c) (ii)

10. INVESTMENTS

	At 1 April 2007 £'000	Movements in Year £'000	At 31 March 2008 £'000
Cost or Valuation			
Plant Bioscience Ltd (PBL)			
110 Ordinary Shares at 10p each, representing one third of the issued share capital of Plant Bioscience Ltd at a total subscription price of £2,000,000 payable in four instalments of:			
- At Completion of Agreement to Purchase £250,000	**250**	**-**	**250**
- On 1st June 2004 £750,000	**750**	**-**	**750**
- On 1st June 2005 £500,000	**500**	**-**	**500**
- On 1st June 2006 £500,000	**500**	**-**	**500**
Impairment	**(1,334)**	**(130)**	**(1,464)**
	666	**(130)**	**536**

Plant Bioscience Ltd is incorporated in England and Wales. www.pbltechnology.com.
The impairment follows BBSRC Executive's assessment of the current carrying value of the investment based on independent consultants' forecast of income to 31 March 2012.

RCUK Shared Services Centre (SSC)
During the year the council acquired one 'A' ordinary share of £1 in RCUK Shared Services Centre Limited (RCUK SSC Limited). Each of the seven Research Councils acquired one share and are all joint investors in the project. RCUK SSC Limited was incorporated on 1 August 2007 and has commenced setting up the Shared Services Centre. For the period ended 31 March 2008 the draft financial statements of RCUK Shared Services Centre Limited shows revenue of £1,225,593 and adminstration costs of £1,225,593 with a nil profit/loss result. The balance sheet totals are £7 from the share capital issued to the Research Councils and £7 cash. The investment has been classified as 'other investment' as each Council's individidual share is 14%. www.bepartofsomethingbetter.co.uk

Roslin BioCentre Ltd (RBL)
49 Ordinary Shares at 100p each representing 49 per cent of the issued share capital of Roslin BioCentre Ltd fully paid.
Roslin BioCentre Ltd is incorporated in Scotland. www.roslinbiocentre.co.uk

Rainbow Seed Fund
Partner's capital fund investment of £92. Independently managed evergreen venture capital fund established in 2001 by the Office of Science and Innovation to invest in technologies developed from publically funded research. www.rainbowseedfund.com

11. TANGIBLE FIXED ASSETS

	Land and Completed Buildings £'000	Buildings Under Construction £'000	SSC Assets Under Construction £'000	Plant & Equipment £'000	Total £'000
Cost or Valuation					
At 1 April 2007	**305,133**	**2,550**	**-**	**4,297**	**311,980**
Additions	**-**	**-**	**3,224**	**349**	**3,573**
Valuation additions*	**-**	**10,200**	**-**	**-**	**10,200**
Reclassification	**1,600**	**(1,600)**	**-**	**-**	**-**
Disposals	**(78)**	**-**	**-**	**(215)**	**(293)**
Revaluation	**11,738**	**-**	**-**	**-**	**11,738**
At 31 March 2008	**318,393**	**11,150**	**3,224**	**4,431**	**337,198**
Depreciation and Impairment					
At 1 April 2007	**99,632**	**-**	**-**	**2,802**	**102,434**
Provided during the year	**6,717**	**-**	**-**	**626**	**7,343**
Disposals	**(47)**	**-**	**-**	**(215)**	**(262)**
Revaluation	**3,167**	**-**	**-**	**-**	**3,167**
At 31 March 2008	**109,469**	**-**	**-**	**3,213**	**112,682**
Net Book Value					
At 31 March 2008	**208,924**	**11,150**	**3,224**	**1,218**	**224,516**
At 1 April 2007	205,501	2,550	-	1,495	209,546

Except for two sites that were being prepared for sale, the land and buildings were professionally valued as at 31 March 2006 by external valuers, Powis Hughes Chartered Surveyors, in accordance with SAVP and RICS guidance notes. In between formal professional valuations, management have used appropriate indicies to revalue the land and buildings.

The SSC Assets Under Construction represents the Council's individual share of the Shared Services Centre currently being developed by the seven Research Councils.

Analysis of Land and Buildings

	2007-08 £'000	2006-07 £'000
Land and Completed Buildings:		
Research and Administration Buildings at institutes	**176,162**	174,850
Dwellings at institutes	**28,745**	26,497
Institute Occupied Land and Buildings	**204,907**	201,347
Swindon Office	**4,017**	4,154
	208,924	205,501
Buildings Under Construction	**11,150**	2,550
Total Land and Buildings	**220,074**	208,051
Comprising:		
Freehold	**220,074**	208,018
Long Leasehold	**-**	33
	220,074	208,051

* See Accounting Policies (c) (ii)

12. DEBTORS

		2007-08	2006-07
	£'000	£'000	£'000
i) Due within one year:			
Trade debtors		**9,133**	8,131
Other debtors		**2,492**	4,210
Repayment of Early Retirement Lump Sums*		**967**	1,556
		12,592	13,897
Prepayments and accrued income:			
- Research grants	**4,645**		4,008
- Training awards	**9,024**		7,473
- Other	**3,137**		2,932
		16,806	14,413
		29,398	28,310
ii) Due after one year:			
Repayment of Early Retirement Lump Sums*	**4,972**		5,515
Other**	**12,189**		11,235
		17,161	16,750
		46,559	45,060

* Cash received from Research Councils' Pension Schemes (RCPS) in 2007-08 in repayment of Early Retirement Lump Sums (ERLS) was £1,590,796 (2006-07: £963,615)

** Other debtors due after one year include a £10.3M loan to Babraham Bioscience Technologies Ltd (BBT) for the development of Babraham BioPark. BBT is repaying the loan into an Escrow account over a six year period to 2011-12. BBSRC will receive the funds from the Escrow account in 2011-12.

13. CREDITORS: Amounts falling due within one year

		2007-08	2006-07
	£'000	£'000	£'000
Trade creditors	**105**		4
Deferred income	**1,941**		1,017
Purchase of tangible fixed assets	**-**		30
Shared Services Centre capital costs	**3,224**		-
Other creditors	**408**		1,033
		5,678	2,084
Accruals:			
- Research grants	**10,706**		14,362
- Other	**6,960**		2,098
		17,666	16,460
		23,344	18,544

14a. NET PARLIAMENTARY FUNDING

	2007-08 £'000	2006-07 £'000
Amount provided by the Department for Innovation, Universities and Skills under Request for Resources (RfR) 2 Subhead O	**393,530**	376,964
Grant-in-aid RfR 2 Subhead W	**96**	106
Net Parliamentary Funding	**393,626**	377,070

14b. NET PARLIAMENTARY FUNDING FROM OTHER BODIES

From other Research Councils	**7,859**	4,777
From other Government Departments	**4,312**	2,703
From other bodies	**405**	463
	12,576	7,943
TOTAL FINANCING	**406,202**	**385,013**

15. RECONCILIATION OF MOVEMENTS IN GOVERNMENT FUNDS

	Revaluation Reserve £'000	General Reserve £'000	Total Government Funds £'000
At 1 April 2007	169,384	57,493	226,877
Net Expenditure for year	-	(417,545)	(417,545)
Net Parliamentary Funding from DIUS - see Note 14a	-	393,626	393,626
Net Parliamentary Funding from other bodies - see Note 14b	-	12,576	12,576
Reversal of Notional Cost of Capital	-	8,097	8,097
Valuation additions*	10,200	-	10,200
Transfer to match depreciation	(5,508)	5,508	-
Professional revaluation	8,571	-	8,571
At 31 March 2008	**182,647**	**59,755**	**242,402**

* See Accounting Policies (c) (ii)

16. NOTES TO THE CASHFLOW STATEMENT

i) Reconciliation of net operating expenditure to net cash outflow from operating activities

	2007-08	2006-07
	£'000	£'000
Net Expenditure for year	**(417,545)**	**(394,459)**
Reversal of depreciation and impairment charge	**7,473**	7,606
Reversal of notional Cost of Capital	**8,097**	7,673
Reversal of net loss on disposals and demolition of fixed assets	**157**	375
Increase in provision for liabilities	**2,688**	2,077
Increase in debtors excluding those for fixed assets	**(1,601)**	(12,997)
Increase in creditors excluding those for fixed assets	**4,830**	5,460
Net cash outflow from operating activities	**(395,901)**	(384,265)

ii) Reconciliation of movement in cash to movement in net funds

	2007-08	2006-07
	£'000	£'000
Cash as at 1 April 2007	**1,565**	6,005
Increase/(decrease) from operating activities	**6,674**	(4,440)
Cash as at 31 March 2008	**8,239**	1,565

iii) Breakdown of Balances

	2007-08	2006-07
	£'000	£'000
HM Paymaster General	**5,647**	493
Barclays Bank plc	**3,286**	1,525
Less Held for third parties (see (iv))	**(694)**	(453)
	8,239	1,565

iv) Third Party Assets: Cash held on behalf of Institutes to cover unforeseen losses

	2007-08	2006-07
	£'000	£'000
At 1 April 2007	**453**	223
Net Inflow	**241**	230
At 31 March 2008	**694**	453

v) Movement in creditors and payments for fixed assets

	2007-08	2006-07
	£'000	£'000
Tangible fixed asset additions	**3,573**	4,606
Purchase of investments	**-**	500
Add decrease in fixed asset creditors	**30**	135
Payments to acquire tangible fixed assets	**3,603**	5,241

vi) Movement in debtors and receipts for fixed assets

	2007-08	2006-07
	£'000	£'000
Fixed asset debtors	**698**	800
Other debtors	**45,861**	44,260
Total debtors (see Note 12)	**46,559**	45,060
Payments on disposals of fixed assets (see Note 8)	**(126)**	(47)
Decrease in fixed asset debtors	**102**	100
Cash (paid)/received from sale of fixed assets	**(24)**	53

17. FORWARD COMMITMENTS ON APPROVED RESEARCH GRANTS

	2007-08 £M	2006-07 £M
2007-08	**-**	203.0
2008-09	**221.3**	128.3
2009-10	**145.4**	76.6
2010-11	**81.7**	18.8
2011-12	**23.1**	8.0
After 2011-12	**9.5**	-
	481.0	434.7

18. CAPITAL COMMITMENTS

The majority of capital expenditure funded by BBSRC is on contracts let by sponsored institutes. Capital commitments as at 31 March, for which no provision has been made, are as follows:

	2007-08 £'000	2006-07 £'000
Shared Services Centre	**4,930**	-
Authorised for contracts to be let	**28,150**	15,200
Funding approved in principle:		
- BBSRC contribution to the Pirbright redevelopment	**16,536**	16,700
- BBSRC contribution to the EBRC	**37,000**	34,300
- BBSRC contribution to IAH business continuity and compliance	**22,223**	-
- Other	**24,295**	21,100
	133,134	87,300

The SSC capital commitment represents the Council's individual share of the future committed spend on the Shared Services Centre. Costs incurred to 31 March 2008 have been recognised through the Income and Expenditure account and the SSC Assets in the Course of Construction.

19. OPERATING LEASE COMMITMENTS

BBSRC has annual operating lease commitments in respect of properities where the lease term expires as follows:

	2007-08 £'000	2006-07 £'000
Within 1 year	**-**	-
Between 2 and 5 years	**30**	-
After 5 years	**582**	582
	612	582

The average annual lease commitment of £582k represents a building leased on behalf of the Shared Services Centre and the Technology Strategy Board. At 31 March 2008 contracts to sublet this building to the SSC for the full cost and period of the head lease were in the process of being agreed. The signing of the sublease will mean that the net cost to BBSRC for the lease of the building is nil.

20. CONTINGENT LIABILITIES

The BBSRC sponsored IGER institute formally transferred to the University of Aberystwyth on 31 March 2008. As part of the transfer BBSRC agreed to contribute to any redundancy costs should the University experience a reduction in programme grant income between 1 April 2008 and 31 March 2014. The proportion of BBSRC's contribution to any directly related redundancy costs is dependent upon both the level and the year of income reductions. The level of income reductions, redundancy costs and BBSRC's contributions to these were thus not capable of realistic estimation as at 31 March 2008.

21. RELATED PARTY TRANSACTIONS

The BBSRC is a Non-Departmental Public Body sponsored by the Department for Innovation, Universities and Skills (DIUS).

For the purposes of Financial Reporting Standard 8, DIUS are regarded as related parties. During the year, the BBSRC has had various material transactions with DIUS and entities for which DIUS is regarded as the parent department, viz.: Arts and Humanities Research Council, Economic and Social Research Council, Engineering and Physical Sciences Research Council, Medical Research Council, Natural Environment Research Council, Science Technology and Facilities Council, Technology Strategy Board. Debtors include balances with other government bodies within the boundary set for the Whole of Government Accounts (WGA) of £10.6M (2006-07: £5.2m). The £10.6M includes £0.7M owed by the Medical Research Council being the balance due on a sale of land for £2.7M. Debtors with non-WGA bodies include £10.3M with Babraham Bioscience Technologies Limited (BBT) for the development of the Babraham BioPark.

During the year, the following material payments with Council Members' organisations took place in respect of research and training grants funded by the BBSRC:

	Awards	**£**
Professor Sir Howard Dalton FRS	**1**	28,120
Professor Anne Dell FRS	**3**	228,202
Professor Robert Freedman	**2**	138,949
Professor Peter Fryer FREng	**1**	74,495
Professor Chris Gilligan	**3**	413,445
Dame Nancy Rothwell FRS	**1**	446,860

The following Council Members held positions on the Governing Bodies of sponsored research institutes:

Dr David Brightman	Rothamsted Research
Professor Quintin McKellar FRSE	Institute for Animal Health

Registers of interest for Council, Boards and Committees can be found at www.bbsrc.ac.uk

Related Party Transactions

	Grants (See Note 2)		**Debtors (including loans)**		**Major Provision In Year**	
	07-08	06-07	**07-08**	06-07	**07-08**	06-07
	£M	£M	**£M**	£M	**£M**	£M
Transactions with BBSRC-sponsored institutes:						
Babraham Institute*	**25.1**	23.4	**0.4**	0.5	**-**	-
Institute for Animal Health*	**31.9**	33.8	**1.2**	1.9	**-**	-
Institute of Food Research*	**12.8**	14.7	**0.3**	1.0	**-**	0.2
Institute of Grassland and Environmental Research*	**10.0**	7.6	**0.1**	-	**3.2**	1.1
John Innes Centre	**23.2**	23.7	**2.9**	3.1	**-**	-
Roslin Institute*	**11.6**	7.8	**0.6**	0.8	**-**	-
Rothamsted Research	**23.7**	21.2	**3.4**	3.5	**0.1**	1.7
Total	**138.3**	132.2	**8.9**	10.8	**3.3**	3.0
Silsoe Research Institute**	**-**	-	**-**	-	**-**	2.1
	138.3	132.2	**8.9**	10.8	**3.3**	5.1

* Institutes occupying BBSRC owned estate at peppercorn rents.
** Former BBSRC-sponsored institute

Non-Institute Debtors:

	2007-08 £M (See Note 12)	2006-07 £M (See Note 12)
Within the WGA Boundary:		
Other Research Councils	**2.7**	3.8
Other Government Organisations	**2.0**	1.4
Reseach Councils' Pensions Schemes	**5.9**	7.1
Non WGA Debtors:		
Babraham Bioscience Technologies Ltd	**10.3**	10.3
Other Debtors (including Universities)	**16.8**	11.7
	37.7	34.3
BBSRC-sponsored institutes	**8.9**	10.8
	46.6	45.1

22. DERIVATIVES AND OTHER FINANCIAL INSTRUMENTS

FRS 13, Derivatives and Other Financial Instruments, requires disclosure of the role which financial instruments have had during the year in creating or changing the risks an entity faces in undertaking its activities. Because of the non-trading nature of its activities and the way in which BBSRC are financed, BBSRC is not exposed to the degree of financial risk faced by business entities. Moreover, financial instruments play a much more limited role in creating or changing risk than would be typical of the listed companies to which FRS 13 mainly applies. BBSRC has very limited powers to borrow or invest surplus funds and financial assets and liabilities are generated by day-to-day operational activities and are not held to change the risks facing the Council in undertaking its activities.

As permitted by FRS 13, debtors and creditors which mature or become payable within 12 months from the Balance Sheet date have been omitted from the currency profile.

Liquidity risk
The BBSRC's net revenue resource requirements are financed by resources voted annually by Parliament, and administered as Grant-in-aid through the Department for Innovation, Universities and Skills, just as its capital expenditure largely is. BBSRC is not therefore exposed to significant liquidity risks. As disclosed in note 1a, BBSRC is dependent on funding from DIUS to meet liabilities falling due in future years, but there is no reason to believe that this funding will not be forthcoming.

Interest rate risk
None of the Council's financial assets or liabilities is subject to interest, therefore the Council is not exposed to interest rate risk.

Foreign currency risk
The BBSRC's exposure to foreign currency risk is insignificant. Foreign currency income is nil and foreign currency expenditure at less than 0.1 per cent of total expenditure is also negligible.

23. POST BALANCE SHEET EVENTS

The BBSRC-sponsored Roslin Institute formally transferred the majority of its activities to the University of Edinburgh on 13 May 2008. As part of the transfer BBSRC entered into a number of agreements to compensate the University of Edinburgh, including the following:

- Compensation for any additional pension benefits ex-Roslin employees are entitled to under the Research Councils' Pension Schemes as opposed to the Universities Superannuation Scheme. The Government Actuary's Department (GAD) has estimated the difference as £3M, assuming that all employees take up the option to transfer their accrued pension benefits.

- Indemnity for any potential legal cases brought against the University as a result of past actions of the Institute. The proportion of settlement BBSRC will fund declines on annual basis and is limited to claims up to the fifteenth anniversary of the completion of the transfer. The likely cost of these are unknown.

- Should the University of Edinburgh experience a fall in research grant income (including BBSRC grants), BBSRC will contribute to the cost of any redundancies that arise as a direct result. The proportion of BBSRC's contribution to the redundancy cost is dependent upon both the level and the year of the income reductions. An accurate estimate of such costs is unavailable.

- BBSRC has also agreed to an indemnity for Roslin's Neuropathogenesis Unit (formerly part of the Institute for Animal Health) to cover any shortfall in grant income as a result of the transfer. The cost of this is estimated at £1M.

FRS 21 Events after the balance sheet date require the disclosure of the date on which the financial statements were "authorised for use" and who gave that authorisation. The financial statements were authorised for issue on 4 July 2008 by Mr Steve Visscher. There have been no events after the balance sheet date requiring an adjustment to the financial statements.

ACCOUNTS DIRECTION GIVEN BY THE SECRETARY OF STATE FOR INNOVATION, UNIVERSITIES AND SKILLS (WITH THE APPROVAL OF HM TREASURY) IN ACCORDANCE WITH SECTION 2 (2) OF THE SCIENCE AND TECHNOLOGY ACT 1965

This direction applies to the Biotechnology and Biological Sciences Research Council (BBSRC).

BBSRC shall prepare accounts for the financial year ended 31 March 2008 and subsequent financial years in compliance with the accounting principles and disclosure requirement of the edition of the Government Financial Reporting Manual issued HMR Treasury ("the FReM") which is in force for the financial year for which the accounts are being prepared.

The accounts shall be prepared so as to:

a) give a true and fair view of the state of affairs at 31 March 2008 and subsequent financial year-ends, and of the income and expenditure, recognised gains and losses, and cash flows for the financial year then ended; and
b) provide disclosure of any material expenditure or income that has not been applied to the purposes intended by Parliament or material transactions that have not conformed to the authorities which govern them; and
c) treat grants and grant in aid from the Department for Innovation, Universities and Skills as financing (as require by FReM) i.e. credited to reserves and not treated as income.

Compliance with the requirements of the FReM will, in all but exceptional circumstances, be necessary for the accounts to give a true and fair view. If, in these exceptional circumstances, compliance with the requirements of the FReM is inconsistent with the requirement to give a true and fair view, the requirement of the FReM should be departed from only to the extent necessary to give a true and fair view. In such cases, informed and unbiased judgement should be used to devise an appropriate alternative treatment which should be consistent with both the economic characteristics of the circumstances concerned and the spirit of the FReM. Any material departure from the FReM should be discussed with the Department for Innovation, Universities and Skills and with HM Treasury.

This direction supersedes the direction dated 27 November 2001.

Signed for and on behalf of the Secretary of State for Innovation, Universities and Skills

R Louth

Dated 5 April 2007

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BBSRC-sponsored research institutes

Sustainable Agriculture and Land Use

- John Innes Centre www.jic.ac.uk
- Rothamsted Research www.rothamsted.ac.uk

Animal Health and Welfare

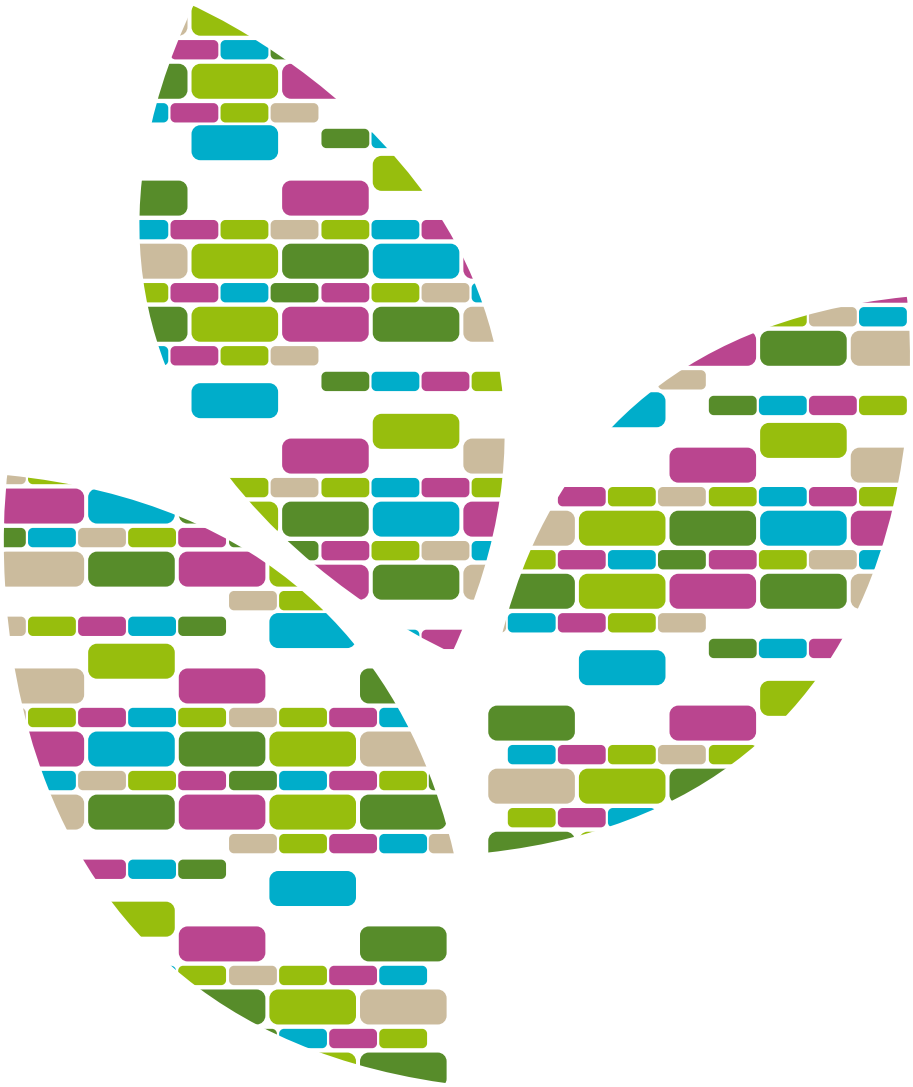
- Institute for Animal Health www.iah.ac.uk

Biomedical and Food Sciences

- Babraham Institute www.babraham.ac.uk
- Institute of Food Research www.ifr.ac.uk

Systems Biology centres

- Centre for Integrated Systems Biology of Ageing and Nutrition (CISBAN) (University of Newcastle)
- Centre for Integrative Systems Biology at Imperial College (CISBIC) (Imperial College London)
- Manchester Centre for Integrative Systems Biology (MCISB) (University of Manchester)
- Centre for Systems Biology at Edinburgh (CSBE) (University of Edinburgh)
- Centre for Plant Integrative Biology (CPIB) (University of Nottingham)
- Oxford Centre for Integrative Systems Biology (OCISB) (University of Oxford)



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