Biotechnology and Biological Sciences Research Council

Annual Report and Accounts

2004 - 2005

Presented to Parliament by the Secretary of State, and by the Comptroller and Auditor General, in pursuance of Schedule 1, Sections 2 (2) and 3 (3) of the Science and Technology Act 1965.

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The Biotechnology and Biological Sciences Research Council, as required by Schedule 1 to the Science and Technology Act 1965, submits the following Report on its activities during the period 1 April 2004 to 31 March 2005.

Dr Peter S Ringrose
Chairman

Professor Julia Goodfellow CBE
Deputy Chairman and Chief Executive

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This Report summarises progress against the key objectives outlined in the BBSRC Strategic Plan 2003-08 (www.bbsrc.ac.uk/strategicplan) and BBSRC's activities in support of the high level objectives of the Science & innovation investment framework 2004-2014, (www.hm-treasury.gov.uk/spending_review/spend_sr04/associated_documents/spending_sr04_science.cfm)

The Biotechnology and Biological Sciences Research Council (BBSRC) is the UK's principal public funder of basic and strategic research across the biosciences. (See www.bbsrc.ac.uk).

It is funded primarily by the Science Budget through the Office of Science and Technology (OST, Department of Trade and Industry); and is part of the Research Councils UK (RCUK) partnership.Throughout this Report we give examples of collaborative work with the Council for the Central Laboratory of the Research Council's (CCLRC), the Economic and Social Research Council (ESRC), the Engineering and Physical Sciences Research Council (EPSRC), the Medical Research Council (MRC) and the Natural Environment Research Council (NERC).

RESEARCH COUNCILS UK

Cover image: *E coli* (red) adhering to bovine gut wall (See page 8).

Chairman's report

The Biotechnology and Biological Sciences Research Council has made significant progress during the year on a range of challenging issues. I am particularly pleased that we have not ducked difficult, and in some cases painful, decisions. In so doing we have addressed a broad range of factors that will determine the long-term health of UK bioscience, and not focused narrowly or exclusively on individual elements.

Supporting scientific excellence remains the single most important component from which all else derives, but it in turn depends on the correct infrastructure and intellectual environment. This is where we have invested considerable energy and effort. BBSRC can be justifiably proud of its establishment of the first centres for integrative systems biology. BBSRC has also responded to the Government's Science and Innovation Framework by announcing ambitious plans for further enhancing knowledge transfer and collaboration with industry. Another important development has been the successful securing of funding for the redevelopment of the Pirbright Laboratory of the Institute for Animal Health, for which our feasibility study was recorded in the 2003-04 Annual Report.

I would also like to emphasise the way in which Council members have defined and driven an agenda for increasing cohesion in BBSRC's high level strategic planning and operation. The successful establishment of the Strategy Panels is one outward sign of this changed culture. In particular, I pay tribute to the thoughtful and constructive deliberations that culminated in the Delivery Plan for 2005–08 (www.bbsrc.ac.uk/deliveryplan) and, as described in the Plan, the planned development of new long-term science and innovation, and estates strategies for the BBSRC-sponsored institutes. The Plan provides a solid platform for advancement without impairing either support for free-flowing fundamental research or entrepreneurial development and commercialisation of research. Indeed, as we recognise, and this Report demonstrates, these two activities are intimately related and mutually beneficial to academic research and the UK's knowledge economy.

Dr Peter S Ringrose
Chairman
July 2005

Council membership (as at 1 April 2005)

Dr Peter Ringrose	Chairman
Professor Julia Goodfellow CBE	Deputy Chairman and BBSRC Chief Executive
Professor Simon Bright	Warwick HRI
Dr David Brightman	Brightman Farms
Professor Howard Dalton FRS	Department for Environment, Food and Rural Affairs
Professor David Delpy FRS	University College London
Professor Robert Freedman	University of Warwick
Professor Chris Gilligan	University of Cambridge
Professor Jackie Hunter	GlaxoSmithKline
Professor Douglas Kell	University of Manchester
Professor Quintin McKellar	Royal Veterinary College
Dr Alistair Penman	Independent
Professor (now Dame) Nancy Rothwell FRS	University of Manchester
Professor Cheryll Tickle CBE FRS	University of Dundee
Dr Malcolm Weir	Inpharmatica Ltd
Mr John Neilson	OST, Department of Trade and Industry (observer)

The following also served on the Council during the period of this Report

Dr Monica Darnbrough CBE	Department of Trade and Industry
Mr John Graham	Scottish Executive Environment and Rural Affairs Department
Professor Keith Gull CBE FRS	University of Oxford
Professor Anthony Nash	University of Edinburgh

Chief Executive's introduction

The UK has an excellent bioscience base and is second only to the USA (David A King (2004) *Nature* **430** 311). This is a key factor in the international standing of the UK as a leading scientific nation and in the competitiveness of the UK pharmaceutical and biotechnology sectors, of which the country is justifiably proud. But it brings its own challenges for the BBSRC because it means that whilst our top priority remains support for excellent research, of which we have almost an embarrassment of riches, we must make difficult judgements in order to maintain an appropriate 'balance' of support for potentially conflicting elements of a healthy research base.

For example, we need to tension investment in the infrastructure and skilled researchers, required over the next twenty years, against support for exciting individual research proposals now. Similarly, we need to retain strength across the biosciences, without jeopardising either depth in strategic areas, or support for novel and innovative ideas; and we need to give UK scientists the agility to pioneer and exploit emerging areas of science, without diminishing critical mass in strategic areas, many of which underpin long-term national policy and business needs. At the same time we are also working to evolve ways to support the multidisciplinary research that holds the key to solving the next generation of problems in the biosciences, and on which long-term sustainability of the UK bioscience research depends.

As this Report illustrates, we have made considerable progress in all these interrelated areas – sustaining excellent science, promoting innovation and embedding our science in society. It is becoming increasingly meaningless to discuss these issues in isolation: they are different facets of a single activity, and this Report illustrates the integrated approach that we are adopting to address them. An example is the interface between our new Technology Strategy (page 16) and responsive mode funding (page 6). Another is the Applied Genomics LINK programme (page 17) where world-leading academic groups are engaged in partnerships for innovative applications in the pharmaceutical and healthcare sectors.

As well as strengthening our portfolio of Industrial Partnership Awards (page 16), we have launched in parallel a Government Partnership Awards scheme that recognises the importance of basic research in underpinning policy development and regulation.

To promote this 'public good' research, our Agri-Food Committee and Animal Sciences Committee will look to support proposals with at least 15% of total costs provided by Defra or The Food Standards Agency. At the interface of biological and medical science, we have continued to work closely with the Medical Research Council (MRC) and others in areas of national priority. For example, we are co-funders with MRC of the UK Stem Cell Bank, which opened in May 2004. The Bank is the first of its kind worldwide; tangible evidence of the UK's lead in stem cell science and commitment to translate this into practical developments in healthcare. BBSRC is also a partner in coordinated endeavours in cancer research, in research into ageing (page 6), and in the replacement, refinement and reduction of the use of animals in research (page 10).

I was delighted to have the opportunity to present BBSRC's knowledge transfer programme and examples of successful industrial collaboration and commercialisation at the AGM of the BioIndustry Association in October 2004, at which we launched 'Bioscience and Innovation' (page 18).

We welcomed the funding under Spending Review 2004 for strengthening the sustainability of UK research. We are taking this forward through: increased support for responsive mode funding (page 5); more interdisciplinary centres (page 6); additional support for facilities (page 10) and investment in our institutes (page 8).

Strong research training and career development are prerequisites for a healthy science base. I am very pleased to have chaired a subgroup of the Research Careers Committee (chaired by Sir Gareth Roberts) that is exploring the complex nature of career paths in research. BBSRC is enhancing support for PhD studentships (page 14), and we are working to provide career-long support for scientists. Approximately 65% of BBSRC grant funding supports postdoctoral researchers. We are evolving new ways to promote the career development of this rather 'invisible', yet crucial, cadre of researchers. For example, we allow individuals to be 'named researchers' on grant awards, to help ensure recognition for career advancement, and we require universities receiving BBSRC grants to provide generic skills training for postdoctoral researchers.

We have launched an annual meeting for final year PhD and early postdoctoral researchers to provide a forum for discussion and development of issues in funding and career development. In 2004, over 130 young researchers participated; a particularly popular component was the open question and answer session with a panel comprising (from l to r) Professors Julia Goodfellow, Douglas Kell (BBSRC Council), Caroline Dean (John Innes Centre) and Russell Foster (Chair, BBSRC Animal Sciences Committee).

Throughout this Report, we reflect the rapid advances in bioscience research, and in collaborative and integrated ways of working. A key feature is the unique partnership, within Research Councils UK (RCUK), which is helping funders to come together at all levels to increase efficiency of research administration (page 24) and to address collectively challenges and opportunities for UK science.

BBSRC-sponsored institutes

Babraham Institute (BI)
Institute for Animal Health (IAH)
Institute of Food Research (IFR)
Institute of Grassland and Environmental Research (IGER)
John Innes Centre (JIC)
Roslin Institute (RI)
Rothamsted Research (RRes)
Silsoe Research Institute (SRI) *(until March 2006)*

BBSRC is contributing to RCUK's input to negotiations about the nature and shape of a possible future European Research Council. Prioritisation of funding on the basis of scientific excellence is clearly a key issue; and the strength of UK bioscience means that our research community should be well placed to benefit from European collaboration in this way.

Through RCUK, the Research Councils are developing a common policy on Open Access publishing. We are also contributing to the development and delivery of the RCUK Science in Society strategy, and to several collaborative activities within it, notably in engagement with young people and support for science in schools (page 23). I was very pleased to accept an invitation to speak at the symposium to launch publication of the 'See-through science' pamphlet of the think tank DEMOS, in September 2004. BBSRC is committed to expanding its programme of public engagement (page 21), and to opening up our activities to public scrutiny – this is essential for maintaining public confidence in the processes and outcomes of research. In February 2005, we held our first Annual Open Meeting, in which individuals and organisations interested in BBSRC and bioscience research can question the Executive on any issue.

Throughout the year, I have been greatly supported by the hard work and thoughtful advice from colleagues within BBSRC Executive and the sponsored institutes, and on our committees. I record my gratitude to them all. I also wish to record formally BBSRC's sadness at the death, in August 2004, of Professor John Clark OBE, Director of the Roslin Institute. He was a highly gifted researcher and scientific entrepreneur who made a unique contribution to establishing Roslin as a world-leading centre of animal biotechnology.

Professor Julia Goodfellow CBE
Deputy Chairman and Chief Executive
July 2005

...More researchers eligible for funding;... Centres for Systems Biology;... Interdisciplinary collaborations;... Strategic framework for institutes;... More flexibility in PhD training;... Targeted studentships and fellowships;... Dedicated funds for equipment;...

Ensuring a sustainable bioscience base in the UK

The health of UK bioscience and bio-industry depends on maintaining our world-leading research. This, in turn, requires an agile research base, able to adapt to the rapid advances in the science, and to deploy resources and increase capacity in emerging areas and in those critical for effective knowledge transfer and innovation.

We use many different support mechanisms. These provide the flexibility needed to overcome institutional, historical and disciplinary barriers, so that the UK may utilise its bioscience expertise and experience as effectively as possible.

Research Funding – Analysis of Gross Expenditure

(£M)	Universities	BBSRC - sponsored Institutes	Other Organisations*	TOTAL
Responsive Research Grants	100.18	5.68	3.83	109.69
Core Strategic Grants	-	58.43	-	58.43
Research Initiatives	26.07	3.81	5.06	34.94
Equipment and Facilities	10.63	4.44	0.23	15.30
Capital and Buildings	-	15.17	0.56	15.73
Training Awards and Fellowships	31.23	1.95	0.49	33.67
TOTAL	**168.11**	**89.48**	**10.17**	**267.76**

*Includes other Research Councils

Dr Wolf Reik's team at the Babraham Institute has discovered a mechanism in cells which they believe helps explain how, for some genes, the copy from one parent is silenced while that from the other remains active. Defects in this 'imprinting' are associated with hereditary disorders, including some that increase predisposition to childhood cancers.

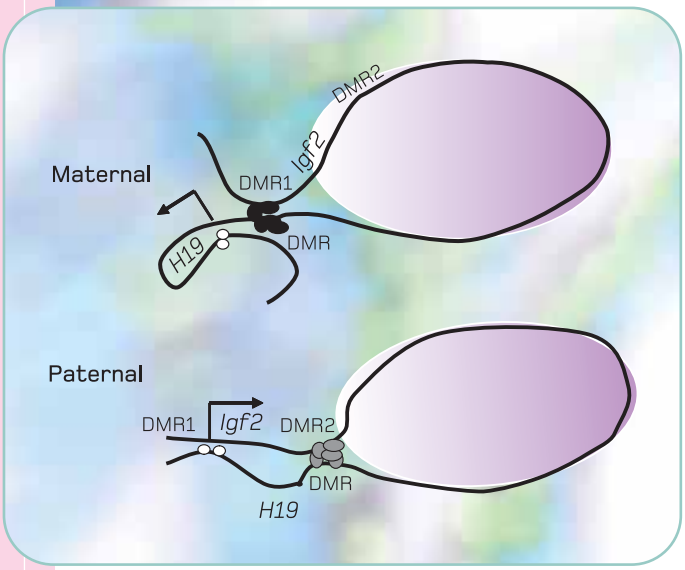
DNA is not a naked molecule in cells. It is wrapped around by proteins and other molecules, in a complex called chromatin. The Babraham scientists found that, in imprinted genes, subtle differences in chemical markers on the chromatin of paternally- and maternally-derived genes enable the chromatin to fold into different shaped, parent-specific, loops that may then be distinguished by a cell's regulatory machinery.

Understanding processes like this is important for increasing knowledge about development and developmental disorders in animals including humans, and also for designing effective and safe cell-replacement therapies.

Murrell, A. *et al.* (2004) Interaction between differentially methylated regions partitions the imprinted genes Igf2 and H19 into parent-specific chromatin loops. Nature Genet. 36, 889-893.

Analysis of final reports on grants

	2002-03	2003-04	2004-05
Research grants delivering high class work adding significantly to knowledge in the field (%)	74	75	77



'Responsive mode' funding, for research proposals in any and all areas across the BBSRC remit, is the life blood of innovative new science. We have announced our intention to increase the proportion of our research funding awarded in this way, by at least 4% p.a.

We welcomed the Government's announcement of additional funding to enable Research Councils to award grants at full economic cost. We shall implement these arrangements with effect from our grants round in September 2005 (page 24).

We have increased the number of scientists able to apply for responsive mode funding by opening eligibility to researchers at East Malling Research, and to scientists at Forest Research and the Central Science Laboratory working in partnership with universities and institutes. We will provide core strategic funding to Warwick HRI (formerly Horticulture Research International) until 2006-07; and will subsequently provide a grant in lieu of HEFCE support until this becomes accessible in 2009-10.

Research at the University of Birmingham, led by Professor Vernonica Franklin-Tong, is the first to show that programmed cell death, by which plants fight disease, also helps them to avoid fertilising themselves with their own pollen. S proteins, encoded by genes in the stigma, interact with incompatible pollen and inhibit pollen tube growth and trigger cell suicide. This provides new insights into how plants recognise 'self'.

Self-pollination in Papaver rhoeas *(poppy) results in signals triggering a programmed cell death cascade, resulting in incompatible pollen being told to commit suicide.*

Thomas, S.G. & Franklin-Tong, V. E. (2004) Programmed Cell Death is triggered by self-incompatibility in Papaver *pollen. Nature* **429**, *305-309.*

Following wide consultation, and as recommended by the House of Commons Select Committee on Science and Technology, we have announced that we will increase our funding rounds to four a year, starting in June 2005. Our aims are to reduce escalating numbers of applications, raise success rates and so reduce the time researchers spend submitting unsuccessful applications. Our consultation revealed widespread support for our Committee-based peer review processes. BBSRC Council decided, therefore, not to implement the Select Committee's recommendation of a 'college' of reviewers.

Top twenty five universities – by grant funding from BBSRC

University	Research and capital grants (£M)
Cambridge	11.59
Manchester*	9.76
Oxford	7.32
Imperial College, London	6.65
Edinburgh	6.51
Glasgow	5.79
Sheffield	5.56
Nottingham	5.20
University College London	5.14
Leeds	4.46
York	4.14
Bristol	3.84
Birmingham	3.75
Newcastle upon Tyne	3.48
East Anglia	3.40
Liverpool	3.00
Cardiff	2.76
Leicester	2.70
Warwick	2.68
Southampton	2.39
Kings College London	2.23
St Andrews	2.01
Reading	1.94
Aberdeen	1.81
Sussex	1.80

*The Victoria University of Manchester merged with UMIST during 2004-05. This includes all grants for both during 2004-05.

Summary of grant application and success rates

	2003-04		2004-05	
	Spring	Autumn	Spring	Autumn
Number	742	1056	892	998
% success	30	27	25	26

Application and success rates by gender

Percentage of successful applications from total applications

	2002		2003		2004	
	Male	Female	Male	Female	Male	Female
Project Grants	30.3	29.2	28.3	25.0	26.3	24.1
Programme Grants	28.9	30.7	35.2	31.8	44.9	37.9
New investigators	21.6	29.0	34.6	19.2	41.8	50.0
Fellowships	9.1	5.5	11.5	12.8	9.3	17.4

Percentage of female applicants for peer reviewed funding

	1999	2000	2001	2002	2003	2004
Project Grants	16.6	16.1	14.8	17.2	19.7	19.8
Programme Grants	12.6	13.0	15.2	15.2	17.5	14.1
New investigators	21.3	24.5	24.1	15.8	24.3	21.2
Fellowships	31.7	28.6	33.3	41.6	31.0	32.2

Capacity building, prioritisation and multidisciplinarity

A key challenge is to build on the huge successes of 'reductionist' molecular and cell biology over the past thirty years in order to understand more complex biological systems in the same level of detail, and to develop new technologies and systems-based applications.

Our Technology Strategy (page 16) identified a need for increased capacity in animal physiology to enable translation of research findings into pharmaceutical and clinical applications. To address this we are prioritising support for research in integrative mammalian biology. Similarly, within biomolecular sciences, we have identified a need for more multidisciplinary research on temporal and spatial complexity, for example in multienzyme complexes and pathways of signalling molecules.

Collaboration with funders and researchers in the physical sciences has stimulated new multidisciplinary approaches. For example, following discussions with the Royal Society of Chemistry and the EPSRC, we have announced funding of up to £10M for a new initiative in Selective Chemical Intervention in Biological Systems. This focuses on discovery and investigation of small molecules that have highly specific activities for example in activating and 'expressing' genes, in protein-protein interactions and in cell division and migration, and in biological processes such as ageing. The initiative is also aimed at training scientists in chemical biology research. Seventy-six applications for funding have been received. We have also promoted multidisciplinary approaches in the chemistry of ageing, chemical genetics and mathematical challenges in systems biology. We have announced the Strategic Promotion of Ageing Research Capacity, being funded jointly with EPSRC.

Systems Biology

In 2004 we published our plan to establish centres for integrative systems biology in UK universities. In March 2005, we announced the first three Centres at a total investment of just under £20M. Of this, EPSRC will provide £1M per Centre to facilitate integration of engineering, physical sciences and mathematics.

The Centres will integrate experimentation with theoretical modelling and computer simulations in order to process experimental results, design new experiments and generate generic and predictive 'solutions'. They will be located at: Imperial College London (host-pathogen interactions in infections) the University of Manchester (yeast biology) and the University of Newcastle (ageing and nutrition).

London

Manchester

Newcastle

We have announced our plans to invest a further £25M in integrative and systems biology with funding from SR 2004.

In nanotechnology, BBSRC's focus is on multidisciplinary research to understand biological processes and to support technologies in, for example, drug delivery and sensors and analytical tools. We support two interdisciplinary research collaborations, in partnership with the EPSRC, MRC and the Ministry of Defence. These are led respectively from the Universities of Cambridge and Oxford. With the same Research Council partners, we continue to fund the collaboration on Tissue Engineering between researchers at the Universities of Liverpool and Manchester, which successfully completed its mid-term review this year.

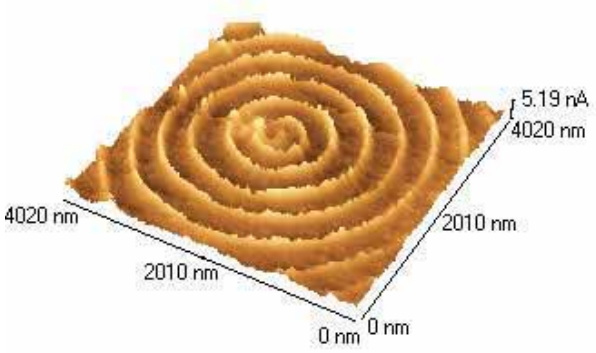
As well as bringing together research across disciplines and levels of complexity, we promote integration of basic, strategic and more applied research, both to benefit the research and to accelerate knowledge generation and uptake in policymaking and industrial applications. An example is coordination of research on genetic improvement of small grain cereals, where we fund projects at Rothamsted Research, John Innes Centre, Scottish Crop Research Institute and the Universities of Bristol, Nottingham and Reading.

International partnerships

Our international programme is designed to strengthen the UK research base through strategic alliances and to ensure that UK scientists have access to funding and support mechanisms for such alliances.

The BBSRC Crop Science Review (page 11) recommended increased international collaboration on major crops. We are taking this forward for wheat research through discussions with the French Institut National de la Recherche Agronomique (INRA) on potential bilateral programmes, and within the Defra Wheat Genetic Improvement Network where BBSRC has supported a workshop to develop links between UK scientists and the Mexican International Centre for Wheat Improvement. The latter collaboration has already secured the availability of valuable genetic material to UK researchers for the first time. BBSRC researchers are also contributing to the EU grain legume programme (page 9).

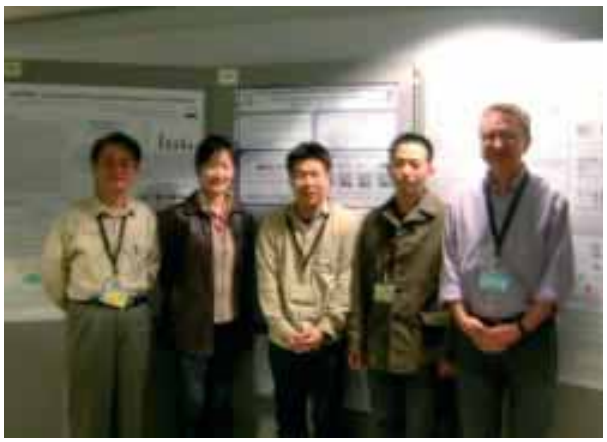
Through our International Scientific Interchange Scheme (ISIS), we have awarded 35 grants totalling £94k. These have funded exchanges on topics ranging from bioremediation of nuclear waste to chemical ecology of crop pests. Our China Partnering Awards and



The ability to construct and manipulate materials at the nanoscale (a nanometre is one billionth of a metre) offers unrivalled opportunities to make new research tools. Here, rings of carboxylic acid groups are written into a siloxane monolayer using scanning near-field photolithography.

Image courtesy of Prof Graham Leggett and Dr Shuging Sun

Japan Partnering Awards have continued to support activities aimed at establishing long-term research collaborations for UK scientists. We funded 14 Partnering Awards (8 China; 6 Japan) with a total BBSRC contribution of £363k over 4 years. The former have included a recent UK-China collaboration on synchrotron radiation circular dicroism in bioscience that will provide UK structural biologists with access to facilities in Beijing. A Japan Partnering Award is supporting Dr Tony Michael of the Institute of Food Research to establish a collaboration in functional genomics of plant metabolism, stress response and development.



Japanese researchers visiting Institute of Food Research scientists as part of a Japan Partnering Award on functional genomics of plant metabolism, stress response and development.

We also encourage collaborative interdisciplinary research at the forefront of the life sciences by promoting the Human Frontier Science Program (HFSP) that covers the EU, Australia, Japan, North America and South Korea. BBSRC and the MRC pay the UK subscription to HFSP and the European Molecular Biology Conference (EMBC).

Institutes

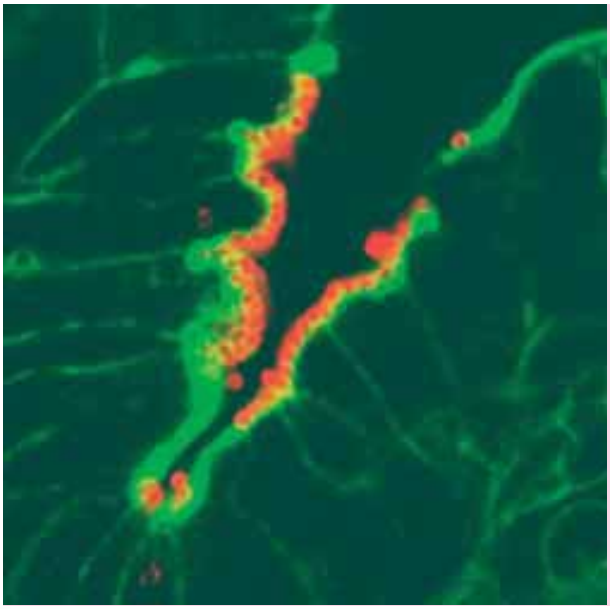
(listed on page 3)

As well as providing unique facilities and critical mass for UK science in areas such as animal health and crop science, BBSRC-sponsored institutes, through their mix of funding streams, take fundamental science through to applications in agri-food, land use and healthcare sectors. 'Balancing' capacity for long-term basic research, short-term commissions, and responsiveness to emerging science is complex.

We have announced our plans to increase our Core Strategic Grants (CSGs) to institutes by an average of 3% p.a. We have also announced plans to develop a 10-year Science and Innovation strategy for our sponsored institutes, and an Estates Strategy, and are working closely with Institute Governing Bodies and Institute Directors on their development. Together, these are designed to promote sustainability by matching resource and capacity to changing scientific and end-user needs. As with university research, flexibility and collaborative working will be increasingly important.

BBSRC is contributing £23M to the £121M project to redevelop the Pirbright Laboratory of the Institute for Animal Health, which provides unique facilities for the study, monitoring and control of exotic diseases of livestock. Other funding will be from the Large Facilities Capital Fund (£31M) and Defra.

We have established cross-institute programmes in Soil Science (IGER, RRes and SRI), and in Crop Science (IGER, JIC and RRes).



The serious food-poisoning bacterium *E.coli* O157 appears to respond to the stress hormone norepinephrine (NE) in the gut of cattle by attaching itself to the gut wall, according to research at the Institute for Animal Health. Work by Dr Mark Stevens suggests that the bacterium responds to NE by increasing production of a 'molecular syringe' by which it injects receptors for its attachment into cells lining the gut.

This has important implications for understanding possible relationships between nutrition, stress and infection in animals (including humans) because some dietary components resembling NE have been shown by others to stimulate *E coli* attachment.

Vlisidou, I., M. Lyte, P. M. van Diemen, P Hawes, P. Monaghan, T. S. Wallis & M. P. Stevens. 2004. The neuroendocrine stress hormone norepinephrine augments Escherichia coli *O157:H7-induced enteritis and adherence in a bovine ligated ileal loop model of infection. Infect. Immun. 72:5446-5451.*

Image from a confocal microscope showing E. coli *O157:H7 (red) adhering intimately to the bovine gut wall in response to norepinephrine (NE)*

Institute Funding (£k)

Institute	BBSRC CSG	BBSRC Other Funding	Defra/FSA	Industrial Contract Income	Other Research Income*	EC International	Other Sources	TOTAL REVENUE INCOME	BBSRC CAPITAL FUNDING
BI	9,534	2,137	-	253	2,372	311	2,557	17,164	1,000
IAH	8,111	2,710	9,627	846	1,817	1,621	5,974	30,706	6,611
IFR	8,738	799	1,515	780	130	1,453	690	14,105	776
IGER	4,547	479	8,167	1,392	824	545	1,439	17,393	1,161
JIC	10,906	4,513	813	157	632	1,843	3,304	22,168	2,440
RI	3,965	1,352	1,661	3,379	623	518	1,147	12,645	426
RRES	9,548	3,251	6,355	2,242	864	1,236	1,737	25,232	2,303
SRI	3,085	639	1,765	1,065	674	165	1,171	8,564	451
TOTAL	**58,434**	**15,880**	**29,903**	**10,114**	**7,936**	**7,692**	**18,019**	**147,977**	**15,168**

* Including Charities and Government Departments

BBSRC-sponsored institutes play a major role in international research collaboration. An example is the EU Grain Legumes project, a €14M project coordinated by Dr Noel Ellis of the John Innes Centre and funded under Framework Programme 6 (www.eugrainlegumes.org). Grain legumes are underused both in agricultural production and for animal feed. The project aims to develop the necessary research base to underpin their commercial development by integrative research based around comparative genomics.

Septoria leaf blotch symptoms caused by Mycosphaerella graminicola

1880s Rothamsted Broadbalk wheat harvest scene (Lawes Agricultural Trust)

A collaboration between scientists at Rothamsted Research and the University of Reading has revealed a link between changing distributions of fungi responsible for the economically important leaf blotch disease of wheat and air pollution. Using contemporary DNA technology on samples of Victorian wheat held in Rothamsted's unique databank, the research team found that the relative abundance of the two causal organisms, *Phaeosphaeria nodorum* and *Mycosphaerella graminicola*, is strongly associated with atmospheric levels of sulphur dioxide (SO_2). The former dominated during the mid-20th century when SO_2 pollution peaked, the latter has become dominant in the past 20 years as the reduction in coal burning has decreased SO_2 emissions.

Wheat archive links long-term fungal pathogen population dynamics to air pollution." Bearchell, S. J., Fraaije, B. A., Shaw, M. W. & Fitt, B. D. Proc. Natl Acad. Sci. USA, 102. 5438 - 5442 (2005).

The chicken genome was published in December 2004. Teams led by Professor David Burt at Roslin Institute and Dr Jim Kaufman at the Institute for Animal Health are contributing to a collaboration to explore gene function in the chicken, which involves 49 institutions worldwide. The research will help poultry breeders to produce healthier birds with greater resistance to disease – this is important in reducing the use of antibiotics - and the design of better vaccines. Also, because of its small amount of 'junk' DNA, the chicken genome makes a good model for other vertebrates, including humans.

International Chicken Genome Sequencing Consortium. (2004) Sequencing and comparative analysis of the chicken genome. Nature **432**: *695-716.*

(Image reprinted by permission from Nature copyright 2004 Macmillan Publishers Ltd)

Publications from BBSRC-sponsored institutes:

	2002	2003	2004
Refereed publications/scientist	2.4	2.1	2.1
Total publications/scientist	4.7	4.8	5.0

Animal Welfare

In February 2004, BBSRC Council recommended support for a coordinated programme of research and research training in animal welfare, totalling just under £8M. Centred around veterinary schools, this will include support for research transferred from Silsoe Research Institute. It covers:

Welfare assessment and early life programming (University of Bristol, University of Oxford and Royal Veterinary College)

Perinatal programming of stress response and pain mechanisms,and the welfare consequences (University of Edinburgh, University of Glasgow, Scottish Agricultural College and Roslin Institute)

Welfare of farm animals: environmental perception, cognition, interaction and management (Royal Veterinary College)

NC3Rs

BBSRC is co-funding, with MRC, the National Centre for the Replacement, Refinement and Reduction of Animals in Research that was established in May 2004. We are increasing our support to £316k p.a.; and are working with the Centre to harmonise regulations and share best practice in areas such as the use of primates.

Tools and technologies

Progress in understanding the basic structure, interactions and behaviour of biological systems, increasingly depends on being able to analyse them with high powered physical techniques. BBSRC grants enable bioscientists to use the major facilities operated by the Council for the Central Laboratory of the Research Councils (CCLRC).

We also fund CCLRC researchers who are applying new generation technology to biological problems. For example, BBSRC and CCLRC have announced joint funding of a £1.8M collaboration to develop vibrational spectroscopy for studies including analysis of DNA damage and protein function in cells. Current BBSRC grants to CCLRC researchers for projects using analysis by synchrotron radiation exceed £4M, and include structural genomics and single molecule fluorescence microscopy.

Progress in applying bioscience data, including uses in commercial biotechnology, also relies upon advances in instrumentation and technologies, for example in high throughput systems, to resolve signalling pathways and complex multi-subunit systems, and for screening putative drug targets and novel therapeutics.

BBSRC has led a £5M joint initiative with the EPSRC to establish an Interdisciplinary Research Collaboration in Proteomic Technologies. Led by researchers at the University of Glasgow, and involving scientists at the Universities of Edinburgh and Dundee, this will include: development of instrumentation; fractionation for very small samples; functional analyses for dynamic and transient protein interactions; clinical interface; and integration of gene and protein data. £350k has been awarded for doctoral training.

Andy Pitt, managing director of the new Proteomic Technologies Centre, operating a mass spectrometer.

We have continued our Research Equipment Initiative. The 2004 round funded 32 awards totalling £3.7M to university groups, and a further 7 awards totalling £0.9M to researchers in BBSRC-sponsored institutes.

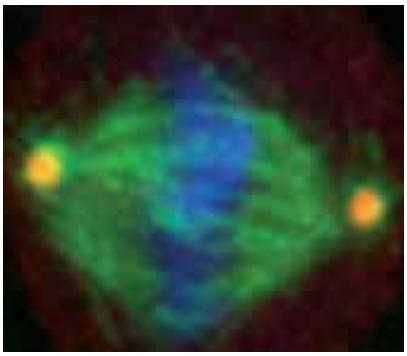
We have announced our plan to invest a further £16M in support of new research tools.

Strategic priorities in science – update

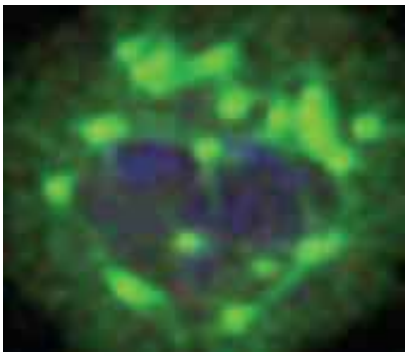
Examples of research in the four priority areas described in our Strategic Plan (www.bbsrc.ac.uk/strategicplan)

Integrative Biology

Using a systematic survey approach to the DNA sequence of the fruit fly, Professor David Glover's team at the University of Cambridge has identified, *in a single study*, eighty protein kinase enzymes implicated in the cell division cycle. Some of the enzymes have been implicated in these processes for the first time, others have been found to have unexpected functions. This shows the power of this systems approach. Because the fly enzymes have near-identical counterparts in humans, the results have implications for understanding cell proliferation in cancers, and are helping to identify targets for new drugs and treatments.



Bipolar spindle in a normally dividing cell



Multipolar spindle blocked in mitosis following down-regulation of a specific individual protein kinase

This research was part funded by the Applied Genomics LINK programme (page 17) and involved collaboration with Cyclacel Ltd. It was also funded by Cancer Research UK, an NIH grant and JSPS, and involved collaborations with scientists in France and the USA.

Sustainable agriculture

In May 2004, we published the results of the independent review of crop science research that we had commissioned to identify priorities over the coming 10-20 years. Among the recommendations, which were considered by BBSRC Council, were: a national strategy for crop science research to bring together different funders and end-users in order to optimise the use of outputs from the UK's world-leading position in plant science and genomics; and emphasis on dietary value of food crops, and non-food uses of crops. BBSRC will be announcing its plans for crop science research during 2005.

Forty two awards have been made under the £20M Rural Economy and Land Use programme (jointly funded by BBSRC, ESRC and NERC and co-sponsored by the Department for Environment, Food and Rural Affairs and the Scottish Executive Environment and Rural Affairs Department). Each project addresses agricultural, environmental and social science questions in an integrated way. An example is a study on management practices to control the transfer of faecal indicator organisms from grazing livestock and agricultural wastes into the food chain. Led by Dr David Chadwick at the Institute of Grassland and Environmental Research, this brings together experts in farmer decision making, farm business economics, consumer interests, the food chain, manure/residue management, pathogen transfers and the development of risk assessments for diffuse pollution. The project is investigating factors at two scales: field to farm, and farm to region. It is being conducted in partnership with researchers at the Universities of Lancaster and Exeter.

Rt Hon Margaret Beckett, Secretary of State Defra, visiting a presentation on the RELU programme at the 2004 Royal Show. A RELU discussion meeting at the Show attracted over thirty participants from the land use and agri-food sectors.

Healthy Organism

There is increasing recognition of the role that young people's diet plays in their health in later life, and of the need to integrate nutritional and biological science with insights from social science to help underpin policy in this area.

With BBSRC funding through the Eating, Food and Health LINK programme, launched in 2002, Dr Nigel Lambert and colleagues at the Institute of Food Research led a consortium that has developed a nutritional 'smartcard' system to monitor what students choose to eat in school cafeterias. The system was proven to be a potentially powerful surveillance tool for charting children's eating habits. For the first time, children who are *persistently* overindulging in fat and sugar or missing out on key nutrients can be identified with confidence. The ethical issues of how such important health information is utilised now need to be addressed.

The other project partners were the School of Medicine, Health Policy and Practice at the University of East Anglia, and industrial partners Gemplus, Smartcard International and Scolarest.

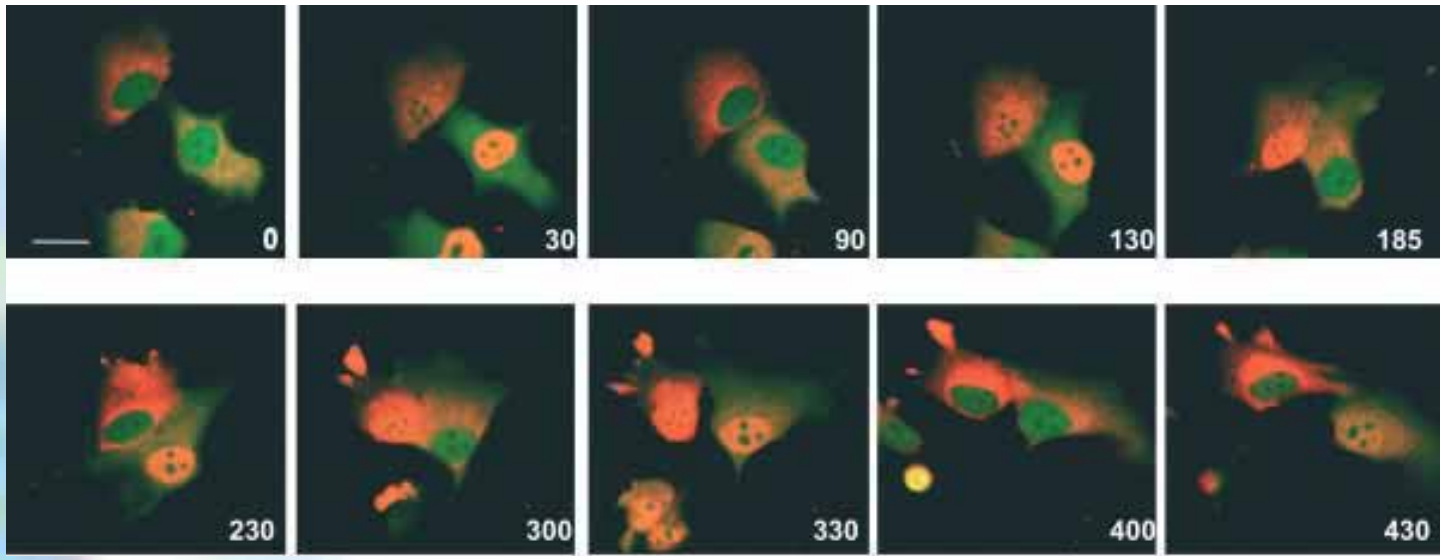
Nigel Lambert with the nutritional 'smartcard'.

Bioscience for Industry

Raising R&D productivity and developing drugs more efficiently is essential if the UK pharmaceutical sector is to maintain its world leading position. High throughput technology is essential.

Funded through the Applied Genomics LINK programme (page 17) researchers at the University of Manchester are working on a new project with GlaxoSmithKline and AstraZeneca to exploit analysis of the metabolome (measured concentrations of as many metabolites as possible) of human blood, to identify new indicators that may be used in diagnostics and prognosis, and to guide drug development. The Manchester group also collaborated in a separate BBSRC-funded project on the dynamics of signalling molecules, led from the University of Liverpool, and including scientists from the Royal Liverpool Children's Hospital, and companies AstraZeneca and Pfizer. Results have shown that cells may interpret the periodicity of signals, and oscillatory patterns may be used to transmit different signals. This has important implications for designing drugs without unwanted side-effects.

Nelson D E et al (2004) Oscillations in NF-kB signalling control the dynamics of target gene expression. Science **306** *704-708*



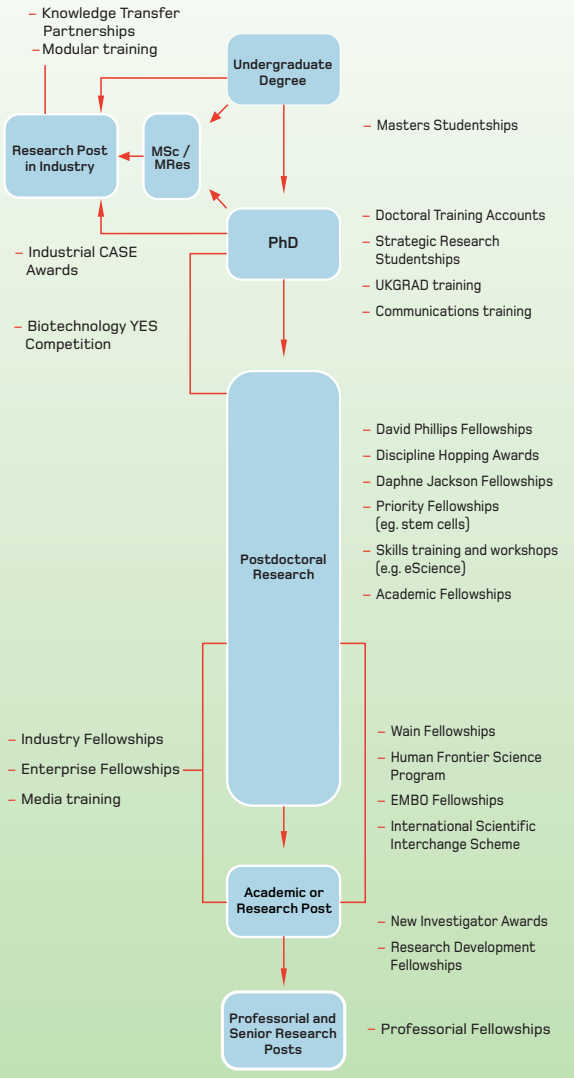
Neuroblastoma (SK-N-AS) cells, expressing EGFP (green) and RelA-Ds-Red (red), showing repeated movements of RelA-DsRed (RelA/p65 is an NF-kB subunit) between the cytoplasm and nucleus following treatment of the cells with TNFa (Time = minutes)

Training and career development

BBSRC's career-long programme of support is designed to attract and retain high calibre scientists in the UK research base.

The components are designed (i) to give researchers flexibility in shaping their careers; (ii) to support the needs of both academic and industrial communities for highly skilled scientists; and (iii) to make it easier for universities and research institutes to plan postgraduate training more effectively, and to target support for priority areas of science.

BBSRC Support for Training and Career Development



Martha Green, *a PhD student in the Institute of Molecular Plant Sciences at the University of Edinburgh, has described a new metabolic pathway in the degradation of Vitamin C in plant cells. This includes at least one new enzyme activity, and the pathway could help explain the role of vitamin C as a pro-oxidant, and the loss of the vitamin during cooking.*

Ref: Vitamin C degradation in plant cells via enzymatic hydrolysis of 4-O-oxalyl-L-threonate. M.A. Green & S.C.Fry (2005) Nature **433** *83-87)*

Ben MacArthur *has undergraduate and postgraduate degrees in Mathematics. He undertook postdoctoral research in the area of cell biology, with support from a Discipline Hopping Award. Now working in a multi-disciplinary team on tissue engineering at The Bone and Joint Research Group at the University of Southampton, Dr MacArthur has since won research grant funding from EPSRC.*

Anne Willis *was appointed to a new Chair in Cancer Cell Biology at the University of Nottingham in 2004. Her research is on regulation of protein synthesis and how aberrant regulation, for example in response to carcinogens, contributes to tumour formation and growth. Professor Willis was awarded a BBSRC Advanced Fellowship[+] in 2000 that enabled her to focus full time on research. She has since been awarded 12 grants totalling £2M from a variety of funders, and has published 25 scientific papers.*

(+ This scheme has been subsumed in our new structure of Fellowships)

BBSRC invests around £30M p.a. in support for postgraduate training. We have announced that from October 2006, all BBSRC PhD studentships will be awarded within Doctoral Training Accounts (DTAs), and each will be funded fully for four years.

This will give departments providing the training discretion to deploy them flexibly in a mix of 3- and 4-year studentships. For the first time, we will allow departments to use our awards as part funding for studentships supported by other funders, a change designed to promote training in multi-disciplinary research.

We will introduce increased studentship stipends (£12k p.a.) from October 2005, using funding announced in the 2004 Spending Review. We have also announced that from the same time, we will award Strategic Research Studentships that will carry an additional £2k to the stipend, for training in BBSRC's priority areas.

Studentship Type

Advanced Course	50
Committee CASE	4
Committee Studentship	224
Faraday	7
Industrial Partner CASE	196
Industrial CASE	46
Research Masters	57
Special CASE	2
Special Research	378
Standard CASE	229
Standard Research	427
Veterinary Research Fellow	1
Doctoral Training Accounts (DTA)	332
Total:	**1953**

DTA studentships awarded in 2004–05 by scientific area

Agri-Food	26
Animal Sciences	39
Biochemistry and Cell Biology	100
Biomolecular Sciences	55
Engineering and Biological Systems	16
Genes and Developmental Biology	38
Plant and Microbial Sciences	58
Total:	**332**

Training first rate people

	2001–02	2002–03	2003–04
Students qualifying from Masters courses (%)	95	86	96
	1998–02	**1999–03**	**2000–04**
Students submitting PhD theses within 4 years (%)	88	84*	80

*Adjusted using full data set

First destination data of PhD students
(% of known destinations)

	Starting in academic year 1997–98	1998–99	1999–00
Permanent academic employment	1	1	5
Fixed-term academic employment	38	39	31
Further training (excl. teaching)	2	2	2
School teaching or teacher training	2	3	2
Private sector, industry or commerce	24	21	17
Government/ other public sector	5	8	12
Other employment	4	2	1
Not employed	9	6	17
Overseas	15	18	12

Top twenty five universities – by postgraduate funding from BBSRC

University	Postgraduate funding (£M)	No. Post-graduates as at 31.03.05**	No. of Fellowships as at 31.03.05
Cambridge	3.18	163	11
Manchester*	2.63	160	3
Leeds	1.71	94	4
Oxford	1.61	84	3
Nottingham	1.59	105	2
York	1.53	86	4
Imperial College, London	1.52	90	2
University College, London	1.37	79	2
Sheffield	1.10	68	-
Edinburgh	1.03	82	1
Birmingham	1.03	68	-
Warwick	0.94	66	1
Newcastle upon Tyne	0.92	53	2
Bristol	0.91	63	-
Dundee	0.75	48	1
Glasgow	0.72	53	1
East Anglia	0.70	85	-
Leicester	0.64	51	-
Aberdeen	0.59	45	-
Liverpool	0.52	35	-
Reading	0.51	42	-
Southampton	0.51	36	-
Sussex	0.48	34	-
Bath	0.46	26	1
St Andrews	0.42	23	1

*The Victoria University of Manchester merged with UMIST during 2004-05. This includes all grants for both during 2004-05. **Figures include Doctoral Training Accounts

Numbers of BBSRC Fellows as at 31 March 2005.	
David Phillips (early career)	32
Research Development (mid career)	11
Professorial (senior scientists)	6
Total:	**49**

Our review of BBSRC Fellowship schemes found that the three main schemes (see above) are still largely fit for purpose. The panel recommended changes to accommodate full economic costing. As a result, from the 2005 competition, BBSRC will fund appropriate estates costs and indirect costs for Fellows, and for support staff on the Fellowship proposal. We are also introducing a required minimum postdoctoral experience for eligibility for David Phillips Fellowships (2 years) and extending the maximum period for eligibility to 6 years. We will increase the flexibility of Research Development Fellowships, with funding for 1-3 years, to enable Fellows to pursue new interdisciplinary approaches to their research, and support research overseas and in industry. Our Professorial Fellowships will further emphasise the Fellows' role as ambassadors for BBSRC, in communicating their research widely. We will introduce electronic applications for Fellowship competitions from the 2005 competition.

BBSRC has funded two Career Development Awards being made by MRC in stem cell research, as part of the Councils' collaboration to build and support the UK stem cell community. Dr Gabriela Durcova-Hills, at the Wellcome Trust/Cancer Research UK Gurdon Institute, University of Cambridge is exploring the genetic reprogramming of primordial germ cells into immortal embryonic germ cells. This is expected to provide insights into how to increase the efficiency of making new cell lines that are stable long-term in culture. Dr Marius Stavridis at the University of Dundee is investigating the events that generate and maintain neural stem cells, and how they are affected by growth factors. A better understanding could enable the design of therapies to stimulate stem cells to help repair damage due to disease or injury.

We have conducted a review of Limited Term Contracts across BBSRC. As a result, 63% of those formerly employed on such terms in BBSRC-sponsored institutes have been transferred to indefinite contracts.

We participated in the Athena Survey of Science, Engineering and Technology (ASSET) that will provide an objective assessment of career progression within BBSRC, including in areas where there are differences between men and women. BBSRC has adopted gender targets for its staffing that match those set by Athena and adopted in many universities.

Ruman Rahman, *a 25-year old postgraduate student at Roslin Institute won the prestigious essay competition of the Genetics Society for 2004, for his writing on cancer stem cells.*

Professor Jim Naismith, *a BBSRC Research Development Fellow at the University of St Andrews, was awarded the Corday-Morgan Medal of the Royal Society of Chemistry for young researchers, for distinction in structural studies of key enzymes and the understanding of their chemistry and biology.*

BBSRC Staff

On 1 April 2005, 2789 staff were employed on Indefinite contracts in institutes sponsored by the BBSRC and in the BBSRC Office. Of the Indefinite staff 1389 were in the science category, of which 92% were graduate or equivalent level. A further 368 members of staff, mainly scientists, held period appointments funded by BBSRC directly (187) or by industry and other external sources (181). Women now occupy 15.7% of senior posts in BBSRC (Band 1 to Band 4). The comparable figure for 2003-04 was 15.6% and in 2002-03 it was 15.1%. We are reducing the number and proportion of researchers on fixed term contracts (often funded externally e.g. by Defra). This peaked at almost 1,300 in 2001-02 and has decreased by 72% in three years.

We have announced our plans to establish a Human Resources Board, reporting to BBSRC Council, to provide a high level forum for endorsing the BBSRC's Human Resources (HR) strategy. The Board will agree and regularly update a high level HR strategy for BBSRC taking into account BBSRC's activities as an employer of institute staff and as a funder of research in universities.

Driving innovation and knowledge transfer

Two major developments have been the establishment of the Bioscience for Industry Strategy Panel that provides us with strategic input on industrial user needs and knowledge transfer; and formulation of our Technology Strategy in which we have identified areas where increased research investment is needed to meet industrial needs. Our Technology Strategy will inform the thinking of the DTI's Technology Strategy Board as it develops national strategy for innovation, and will enable us to work with DTI in priority areas such as bioprocessing.

Industrial collaboration and commercialisation of research outputs

We are strengthening and expanding our activities to promote direct collaboration with industry (with the target of doubling our annual commitment by 2007-08), and to enable academic researchers and companies to exploit scientific advances both for public good policy outcomes and for commercialisation.

We have awarded a total of £590k to eight research groups in the first round of a new Follow-On Fund. This provides short-term support to enable researchers to demonstrate the commercial potential of research ideas, and so helps them to attract commercial funding and licensing for further development. An example is an eighteen month award of £100k to Dr Ben Davis of the University of Oxford, on the potential of glycoprotein processing enzymes.

The former BBSRC Business Plan Competition has been expanded in collaboration with our sister Research Councils to cover all research disciplines and is now operated through Research Councils UK.

The Research Councils Business Plan Competition

We have announced our plan to quadruple our Industrial Partnership Awards (IPAs) - research grants in which industrial partners contribute 15% of more of the costs in cash or through 'in kind' support.

BBSRC Technology Strategy priorities

- **Bioprocessing**
- **Integrated mammalian biology**
- Exploiting systems biology
- **Biocatalysis and biotransformations**
- Genomics underpinning healthcare
- Intelligent storage, retrieval and analysis of large databases
- Crop sciences
- Bionanotechnology

(Initial priorities in bold type)

Vitacress a company specialising in salad leaves is the partner in an IPA to Professor Gail Taylor's team at the University of Southampton which is investigating genetic regulation of age-related changes in leaves. Professor Taylor is pictured with BBSRC Industrial CASE student, Fangzhu Zhang.

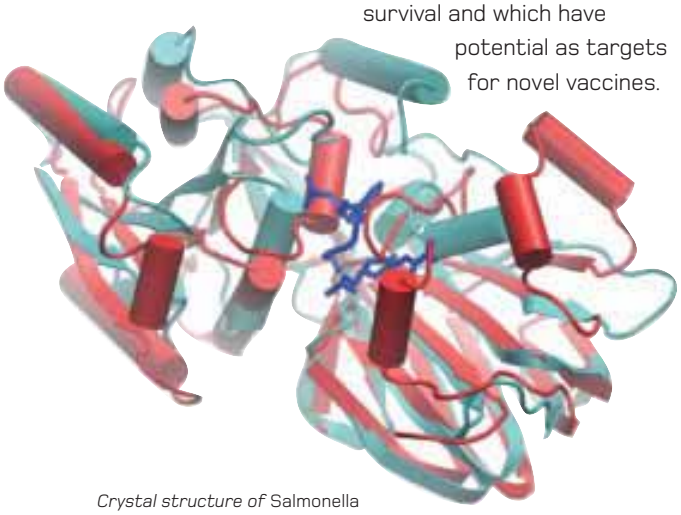
Innovation in the biotechnologies is characterised by dependence on, and proximity to, world class fundamental science and training. Many of BBSRC's activities to promote the translation of research are intimately linked to the training and development of researchers (page 13). Indeed, collaboration, and the movement of skilled individuals between the worlds of academic research and business, are powerful drivers of innovation and commercialisation.

Dr Anna Hine, *a BBSRC-funded researcher at Aston University and CEO of the spin-out ProtaMAX Ltd that draws in part on BBSRC-funded science, has taken up an 18 month secondment as an Innovation Fellow for the University's School of Life & Health Science, where she will help others to spot and exploit commercialisation opportunities.*

(Image copyright Ed Moss, reproduced with kind permission)

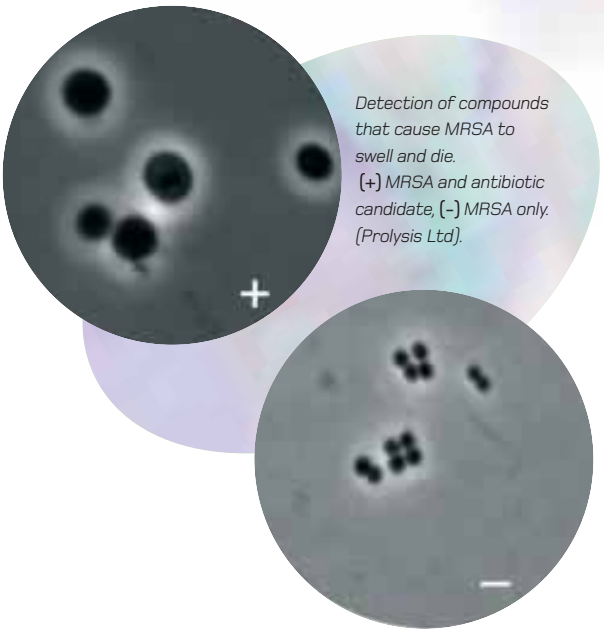
This is exemplified in the Applied Genomics LINK programme, supported by BBSRC, MRC and the DTI and launched in 2000 to help UK companies and academics work together to develop applications in healthcare. The programme attracted over £14M in industrial support, and over 20 SMEs took part. (See also pages 11 and 12).

A collaboration between Arrow Therapeutics and researchers at the Universities of Cambridge, Newcastle, Oxford and University College London, has identified genes in *Salmonella* that are essential for its survival and which have potential as targets for novel vaccines.



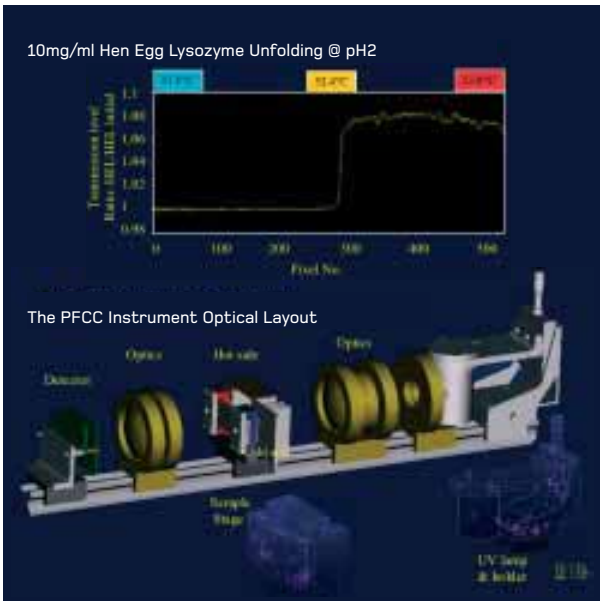
Crystal structure of Salmonella typhimurium *YegS (red) overlaid with* Archaeoglobus fulgidus *NAD kinase (cyan)*

The partnership between scientists at the University of Oxford and its spin-out company Prolysis Ltd brings together world-leading research into the application of microscopy to study bacterial biology with antibiotic discovery technology. The result is rapid identification of potential new antibiotics, including a compound able to kill the 'superbug' MRSA.



Detection of compounds that cause MRSA to swell and die. (+) MRSA and antibiotic candidate, (–) MRSA only. (Prolysis Ltd).

The company deltaDot Ltd is collaborating with scientists at Imperial College on a high throughput technology for analysing the interactions between proteins and small molecules. The company is developing an instrumentation package to analyse protein stability. It has previously been supported through BBSRC's Small Business Research Initiative; an example of how a range of funding streams is particularly important in aiding the establishment of new companies.



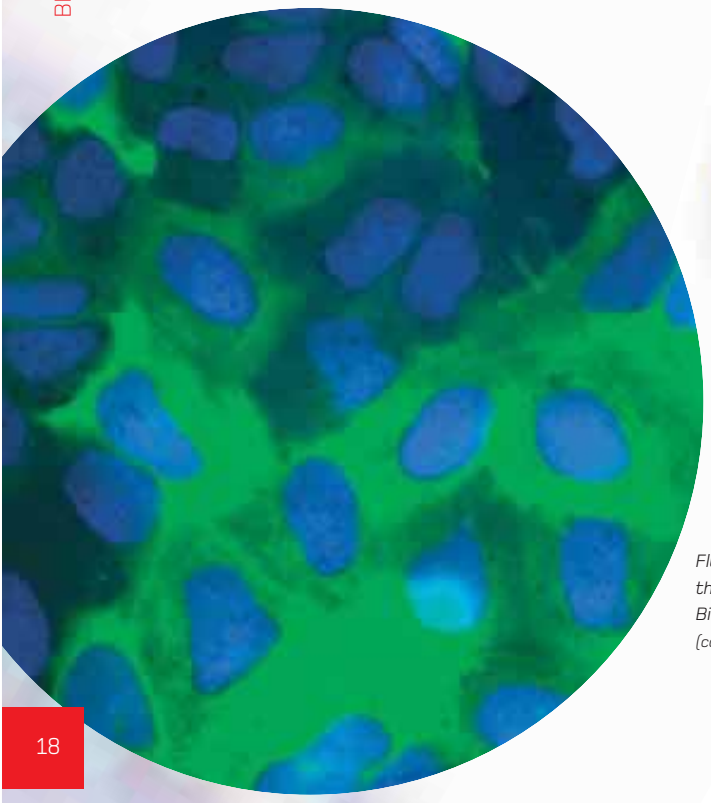
Our Small Business Research Initiative (SBRI) is aimed at encouraging small high-tech firms to develop new research capacities. Since its launch in 2001, the scheme has supported 22 companies, enabling them to strengthen their businesses in the competitive biotech sector.

In the 2005 round, we have announced eleven awards, totalling £2.2M. These include support for developments ranging from novel bone replacement material (Zyentia Ltd, Babraham Research Campus), advanced surface product for culturing and delivering corneal cells to treat some blinding diseases (Celltran Ltd, Sheffield), and evaluation of the biological response to encapsulated single dose vaccines (Critical Pharmaceuticals Ltd), to new portable technology for DNA-based assays (Lumora Ltd, Cambridge), and new sugar binding surfaces for experimental immobilisation of molecules involved in cell-to-cell interactions (glycosaminoglycans) to facilitate their study and the potential development of technologies for use in developing drugs targeted at them (Plasso Technology Ltd, Sheffield).

Biostatus Ltd is a recipient of an earlier funding round. The company is a spin-out from interdisciplinary research led by Professor Paul Smith at Cardiff University, and funded jointly by BBSRC and EPSRC under the Basic Technology programme. It specialises in optical biochips that have potential for use as portable analytical and diagnostic systems in food safety, environmental hazard monitoring and healthcare applications.

We are reviewing Knowledge Transfer Partnerships (KTPs), which bring academic and industrial researchers together through the recruitment of high calibre graduates and postgraduates to work in innovative projects in companies, but with additional supervision from the academic partner.

In October 2004, we published our latest booklet outlining successful knowledge transfer from BBSRC science to commercialisation and end-user uptake.



Fluorescent living cells trapped in a thermoreversible gel, developed by Biostatus Ltd for on-chip analyses. (copyright Biostatus Ltd granted)

Knowledge transfer at institutes

Two institutes have developed significant commercial relationships with support from the Rainbow Seed Fund, in which BBSRC is a partner, that facilitates commercialisation of outputs from research at publicly funded institutes, by supporting the early stages of business formation.

A new link between Babraham Institute and CellCentric is designed to exploit advances in epigenetics research (page 4) for new reagents and drug development.

Research from the John Innes Centre is being taken forward through links with Novacta Biosystems Ltd and Chameleon Biosurfaces Ltd in the areas of Actinomycete research and electropolymer chemistry respectively.

CellCentric unlocking epigenetics

NOVACTA BIOSYSTEMS

Chameleon BioSurfaces Ltd

We are working through Plant Biosciences Ltd to provide Intellectual Property portfolio management across four BBSRC-sponsored institutes.

Researchers at three institutes have won funding under the Follow-on Fund (page 16).

Dr Marianne Bruggeman, Babraham Institute, £99.8k for the development of antibody repertoires in the mouse

Dr Bhupinder Khambay, Rothamsted Research, £38.2k for preparation and evaluation of enriched pyrethrum extract with enhanced knockdown activity

Dr Toby Mottram, Silsoe Research Institute, £81.3k for optimisation of sensors and flexible substrates to aid commercialisation of immunosensors.

Fundamental research in the plant science institutes is closely integrated with more applied research funded by Defra and industrial partners through networks including the Defra Genetic Improvement networks (page 7).

Over forty organic farmers visited the North Wyke site of the Institute of Grassland and Environmental Research to view trial plots and hear the results of research, as part of a special Open Day in August 2004. Presentations illustrated the pull through from basic research to practical applications, with a focus on fertility-building crops and the impact of different management systems for manure composition and application on nutrient supply and recycling. This included Defra-funded work in collaboration with Duchy College Cornwall, and Abacus Organic Associates.

Transferring knowledge (BBSRC-sponsored institutes)

	2002-03	2003-04	2004-05
Industrial income (£k)	15,262	13,351	11,261
Patents awarded	19	17	13
Commercial licensing agreements	77	53	56
Income from intellectual property (£k)	1,273	818	443
Spin-out companies trading	13	13	15
Refereed publications co-authored with industry	45	80	69

Financial figures are subject to audit

Farmers viewing trial organic plots at IGER.

Training and support

We have launched a new Enterprise Fellowship scheme that provides a year's salary and training to enable academic staff, research staff and postgraduates in universities and BBSRC-sponsored institutes to concentrate on developing the commercial potential of their research. The scheme is administered by The Royal Society of Edinburgh, and business training is provided by the University of Dundee.

We are continuing to co-sponsor Industry Fellowships, which are administered by the Royal Society. These provide funding for academic scientists to carry out basic or applied research in an industrial environment, and for industrial scientists to conduct research in academic centres.

BBSRC invests around £200k in supporting a programme of Modular Training for Industry that provides flexible training across a wide range of disciplines in order to provide graduates in industry with up to date, industrially-relevant training. To qualify for funding from BBSRC, course organisers must demonstrate industrial need for the training, and BBSRC expects the courses to be developed in partnership with representatives of the industrial sectors.

The current portfolio of courses covers: Molecular Genetics, Bioinformatics and Microarrays; Food Science; Microscopy and Imaging; Plant Science; Aquaculture; Engineering for Biotechnology; Experimental Toxicology; Active Touch, Posture and Balance; Preclinical Psychopharmacology: and Stem Cells. Courses are delivered by a total of 14 universities, some by distance learning packages.

Collecting environmental samples off the west coast of Scotland to monitor the impact of fish farms, part of the programme of modular training on Aquaculture Technology at the University of Stirling.

The Biotechnology Young Entrepreneurs Scheme (Biotechnology YES) offers postgraduate students and postdoctoral researchers an opportunity to develop commercial awareness and learn a range of business and management skills, whilst developing hypothetical business plans.

Thirty-seven teams registered for the 2004 round. For the first time, teams from the USA participated in the competition, through an initiative of the British Council and the Foreign and Commonwealth Office. The winners were a team from the Sainsbury Laboratory which is affiliated to the University of East Anglia. The Competition is run by BBSRC and the Nottingham Institute for Enterprise and Innovation.

The Biotechnology YES winners from the Sainsbury Laboratory celebrate their victory at the Annual Gala Dinner of the BioIndustry Association; (left to right) Morten Jensen, Rudy Maor, Liliya Serazetdinova, Antonio Serna-sanz and Jack Peart.

"Over the years that Biotechnology YES has been running, the quality of the teams has improved massively year on year and this points to a bright future for the UK biotechnology sector. Participants from previous years are now working in industry and have found their experience from the competition invaluable."

Director of BIA Scotland and member of the judging panel, **Dr Barbara Blaney.**

Embedding science in society

We aim to promote public engagement and confidence in bioscience research and its contribution to society. Our activities are designed to deliver goals identified in the Science & Innovation Investment Framework 2004-2014, and RCUK's Science in Society strategy. They comprise:

Publicising the aims, outputs and implications of the research we fund, so that people, including school students, can engage more easily with it

Facilitating dialogue and consultation on research and its applications, so that we can take account of public attitudes in our planning and funding decision-making

Embedding a culture of responsiveness to social issues in BBSRC's operations; and providing information as transparently as possible.

"In many European nations, there is little call for upstream engagement. But Britain, where a lack of public trust in science is perceived as a serious problem, is a notable exception. Not all of the country's funding bodies have taken this on board. The Biotechnology and Biological Sciences Research Council, which is setting up a permanent committee of non-scientists to advise on strategy, leads the way."

Nature (2004) 431 883.

Dialogue and consultation

We have re-directed our resources to increase dialogue and consultation. For example, we are widening the scope of consultations on future research directions by including more Non-Governmental Organisations (NGOs) and individuals, likely to contribute a wider range of views.

We hold discussion meetings on the outcomes, alongside formal reporting to our committees. We have held such consultations on the BBSRC reviews of Crop Science (page 11) and Farm Animal Genomics.

We have also announced our intention to support two public engagement projects on nanotechnology during 2005-06: a citizen's jury (core partners: the Institute of Nanotechnology, University of Cambridge; Greenpeace; The Guardian; and PEALS, University of Newcastle) and, in partnership with EPSRC, an experiment in upstream engagement (part of a Sciencewise project led by DEMOS).

We have commissioned MORI to examine general public perceptions of issues around diet and health research, as part of a public dialogue activity that we are conducting with the Institute of Food Research during 2005.

BBSRC launched a new leaflet about the use of animals in research during Science Week 2005, with a presentation at the AGM of the animal welfare organisation, Compassion in World Farming.

Public engagement

We have increased our presentations and interactions with other groups and organisations with an interest in public engagement in science.

Making our science accessible

	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05
Media releases	29	24	23	35	32	46*
Corporate publications	8	6	7	6	5	7
Exhibitions	6	8	6	7	6	5
Grants for Science Week events	22	15	20	16	13	18**
Grants for resources to promote public access	8	7	9	10	18	9
Research student placements in schools	150	100	154	135	37	36
BBSRC schools mailing list	4,259	5,089	6,850	6,317	7,247	7,683
Local schools co-ordinators	20	19	25	25	25	25
Science Communication courses (and awards)	2	9	10	10	11	5

* includes 8 RCUK releases ** Includes 2 joint with NERC

We held the first BBSRC parliamentary science event, 'Harnessing Plant Science' at Westminster in June 2004. We supported the bioscience section of the 2005 SET for Britain event in which young scientists present their research to politicians and invited guests at the Houses of Parliament; and also the parliamentary presentation marking the 10th anniversary of the Researchers in Residence scheme that places postgraduates into schools to support classroom science.

BBSRC presented evidence to the Agriculture and Environment Biotechnology Commission's study 'What shapes the research agenda?', and to the 'See-through science' study conducted by DEMOS. We also participated in the Food Ethics Council Workshop 'Agri-Food Research: participation and public good'.

We have increased our efforts to engage with the media, with a resulting increase in coverage of BBSRC-supported science. One media release on bio-mechanics of locomotion in horses, was one of the top ten most viewed releases of 2004 on EurekAlert, the research news website of the American Association for the Advancement of Science, despite being posted only in November.

Monica Winstanley, BBSRC Head of External Relations discussing the role of basic bioscience in underpinning human and veterinary healthcare with Health Minister, Lord Warner, at the BBSRC contribution to a parliamentary reception held by the Coalition for Medical Progress in May 2004 that attracted over fifty MPs, peers and advisers.

Our Bioscience for Society Strategy Panel held its first meeting in January 2005. The Panel includes bioethicists, social scientists and members of NGOs that address animal welfare, consumer, environmental and diversity issues. It guides development of our public engagement programme.

We have continued to present exhibitions on contemporary bioscience at a range of public venues. We have decided to place greater emphasis on "touring" displays around the UK and on presenting individual displays for longer periods at each location.

Six of the 25 displays presented at the Royal Society's prestigious Summer Science Exhibition featured research funded, at least partly, by BBSRC. One of these, presented by BBSRC, reported on research at Manchester Metropolitan University that has revealed that exercise in later life can help reverse age-related decline in muscle function, and so prolong mobility in elderly people.

Research leaders from Manchester Metropolitan University pose with their Vice Chancellor, Dame Alexandra Burslem, in front of the BBSRC display of their research into muscle ageing, during one of the Royal Society Summer Science Exhibition Soirees.

Encouraging and equipping scientists to make their science more accessible to the public remains an important priority. In 2004, we expanded the BBSRC grant awards scheme for researchers engaging with the public during National Science Week, with additional funding from MRC and NERC, into a combined scheme open to scientists funded by any of the three Research Councils. Twenty five awards were made, totalling £39.5k, including 15 for scientists supported by BBSRC. These funded activities ranging from an exhibition at Edinburgh Zoo, presenting the latest research on chimpanzee vocal communication, to a research day at King's College London on science and Alzheimer's Disease.

We also made nine BBSRC awards for researchers supported by the Council, for public engagement activities to promote public dialogue with hard-to-reach groups. These included an interactive science exhibit at the Devon County Show, designed to meet the needs of deaf children; and a visit to Birmingham University's plant science facilities for students from primary schools with a high level of pupils from ethnic minorities.

Collaborative projects within RCUK

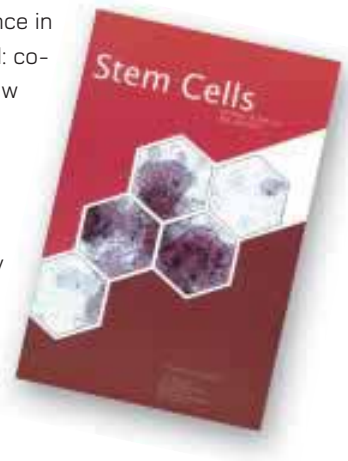
- **Sponsorship of Researchers in Residence (PhD student placements in schools)**
- **Sponsorship of BA CREST scheme (schools research projects)**
- **Sponsorship of Science Race (schools science competition)**
- **Support to Science Media Centre**
- **Publication of Guidelines on Evaluating Public Engagement (with OST)**

Collaborative projects with other organisations

We participate in a variety of fora to promote science communication and dialogue, including

- **The Boyd Group**
- **British Association for the Advancement of Science**
- **Stem Cell Coalition Communications Group**
- **Biosciences Federation**
- **Coalition for Medical Progress**
- **NC3Rs (see page 10)**
- **Science Media Centre events**

BBSRC support for science in schools has also included: co-funding "Stem Cells" a new publication for post-16 students, in partnership with the University of Edinburgh, the Scottish Centre for Biotechnology Education and the Science, Religion and Technology Project of the Church of Scotland.



We are continuing to work with the Institute of Biology and the company BioRad to support a series of practical biotechnology courses for secondary school teachers and technicians.

Efficiency

BBSRC continues to implement ways to maximise efficiency in order to direct as much funding as possible to frontline research and developments for UK science.

We are identifying how to contribute to the Government's efficiency savings targets, (following the 'Independent Review of Public Sector Efficiency' by Sir Peter Gershon, CBE, entitled 'Releasing resources to the front line'). The overall target for the Research Councils is £170M efficiency savings a year in 2007-08. We are putting in place procedures to meet our planned contribution of up to £30M a year in 2007-08. These include: reprioritising responsive mode grant programmes and initiatives, increasing the efficiency of BBSRC-sponsored institutes, and administrative savings in the Executive Office in Swindon.

Following the deduction of £1,011,000 programme costs, administration costs for 2004-05 were £8,298,000. This represents 2.95% of Cash Grant in Aid received during the year, against an OST target of 3.4% by 2007-08.

Research Council harmonisation

BBSRC has continued to implement the RCUK Administration Strategy that strives to share best practice and develop common systems and interfaces with stakeholders where possible. We host several joint units that provide services across the Swindon-based Research Councils. These will help to meet the RCUK target of 25% of Swindon-based staff working in joint units by 2007-08; and include: pensions, internal audit and building services. BBSRC has also contributed significantly to the establishment of a single Swindon-based IT unit.

BBSRC has led cross-Council working on the introduction of reforms to the Dual Support system. This is a priority area that will impact on all the universities and research institutes with which we work. The project has been complex and challenging, and involved a large number of partners. Its success means that from September 2005 all universities and institutes will be able to apply for funding at Full Economic Costing, and so benefit from receiving higher levels of funding in grants and initiatives (page 5).

Risk management

BBSRC utilises a range of techniques to ensure that risk is managed in a manner which 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. 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. In addition, for significant programmes such as the Pirbright Development, the Office of Government Commerce's Gateway process is used.

Health and Safety

The number of accidents reportable under RIDDOR (Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995) in the year 1 April 2004 to 31 March 2005 was 11.

Category	No. of incidents (2004-05)	(2003-04)
Dangerous occurrences	0	0
Exposed to, or in contact with, harmful substances	0	0
Injured by animal	0	3
Handling, lifting, carrying	6	3
Slips, trips, falls	0	8
Contact with moving machinery	1	not reported
Other kind of accident	2	0
Major injury	0	1
Occupational disease	2	0
Overall Total	**11**	**15**

Boards, Panels and Committees (memberships as at 31 March 2005)

BBSRC Senior Staff

Professor Julia Goodfellow CBE
BBSRC Chief Executive

Professor Nigel Brown
BBSRC Director of Science and Technology

Mr Peter Swinburne
Director of Human Resources

Mr Steve Visscher
BBSRC Executive Director

Dr Doug Yarrow
BBSRC Director of Corporate Science

BOARDS

Appointments Board

Professor Julia Goodfellow CBE (Chair)
BBSRC Chief Executive

Professor Robert Freedman
Council Member

Professor Douglas Kell
Council Member

Professor John Pickett CBE FRS
Independent

Professor Christine Williams
Chair, BBSRC Agri-Food Committee

Dr Malcolm Skingle
BBSRC Strategy Board Member

Professor Nigel Brown
BBSRC Director of Science and Technology

Dr Doug Yarrow
BBSRC Director of Corporate Science

Audit Board

Dr Alistair Penman (Chair)
Council Member

Professor David Delpy FRS
Council Member

Professor Robert Freedman
Council Member

Mr Mike Samuel
Independent

Professor Peter Schroeder
Independent

Estates and Equipment Board

Professor Julia Goodfellow CBE (Chair)
BBSRC Chief Executive

Professor Sir John Beringer CBE
Chairman, John Innes Centre Governing Council

Professor Ian Crute
Independent, Director, Rothamsted Research

Professor Keith Gull CBE FRS
Council Member

Dr Alistair Penman
Council Member

Mr Andrew Smith
Independent, University of Bath

Professor Nigel Brown
BBSRC Director of Science and Technology

Mr Geoff Clark
BBSRC Head of Estates

Mr Steve Visscher
BBSRC Executive Director

Remuneration Board

Dr Peter Ringrose MA PhD (Chair)
BBSRC Chairman

Professor David Delpy FRS
Council Member

Professor Julia Goodfellow CBE
BBSRC Chief Executive

Professor Anthony Nash
Council Member

Professor Cheryll Tickle CBE FRS
Council Member

Strategy Board

Professor Julia Goodfellow CBE (Chair)
BBSRC Chief Executive

Professor Mary Bownes
Chair, Studentships and Fellowships Strategy Panel

Professor Ian Crute
Independent

Dr Ed Dart CBE
Independent

Professor Anne Dell FRS
Chair, Tools and Resources Strategy Panel

Professor Julie Fitzpatrick
Scottish Executive Environment and Rural Affairs Department

Professor Chris Gilligan
Council Member

Professor Keith Gull CBE FRS
Council Member

Professor Douglas Kell
Council Member

Professor Barry Keverne FRS
Chair, Healthy Organism Strategy Panel

Revd Professor Michael Reiss
Chair, Bioscience for Society Strategy Panel

Professor Peter Rigby
Chair, Integrative & Systems Biology Strategy Panel

Dr Malcolm Skingle
Chair, Bioscience for Industry Strategy Panel

Professor Jeff Waage
Chair, Sustainable Agriculture Strategy Panel

STRATEGY PANELS

Bioscience for Industry Panel

Dr Malcolm Skingle (Chair)
GlaxoSmithKline

Dr John Birch
Lonza

Professor John Coggins
University of Glasgow

Professor Colin Dennis
Campden and Chorleywood Food Research Association

Dr Richard Dyer
Babraham Institute

Dr David Gillham
Syngenta

Mr Tom Hockaday
Isis Innovation

Mr John Lampitt
Thelsford Farm

Professor Peter Lillford CBE
CNAP, University of York

Dr Linda Magee
Bionow

Dr Fiona Marston
Novacta Biosystems Ltd

Dr John Overington
Inpharmatica

Dr Nick Shepperson
Pfizer UK

Bioscience for Society Panel

Revd Professor Michael Reiss
Institute of Education, University of London

Dr Louise Archer
London Metropolitan University

Dr Derek Bell
Association for Science Education

Dr David Boak
The Royal Society

Professor Ruth Chadwick
Lancaster University

Dr Nigel Collins
King Charles I School, Kidderminster

Ms Sue Dibb
National Consumer Council

Mr Pallab Ghosh
BBC

Dr David Hardman
Babraham Institute

Dr Robert Hubrecht
Universities Federation for Animal Welfare

Professor Alan Irwin
University of Liverpool

Dr Brian Johnson
English Nature

Professor Julian Kinderlerer
University of Sheffield

Dr Sandy Thomas
Nuffield Council of Bioethics

Healthy Organism Panel

Professor Barry Keverne FRS (Chair)
University of Cambridge

Professor Dianne Berry
University of Reading

Professor Julian Dow
University of Glasgow

Professor Jane Hurst
University of Liverpool

Professor John Mathers
University of Newcastle

Professor Linda Partridge CBE FRS
University College London

Dr Wolf Reik
Babraham Institute

Professor Kevin Shakesheff
University of Nottingham

Professor Tim Skerry
University of Sheffield

Dr John Tite
GlaxoSmithKline

Observers

Dr Alison Tedstone
Foods Standards Agency

Dr Morven Roberts
Medical Research Council

Integrative & Systems Biology Panel

Professor Peter Rigby (Chair)
Institute of Cancer Research

Dr Aileen Allsop
AstraZeneca

Professor Tim Bugg
University of Warwick

Professor Enrico Coen CBE FRS
John Innes Centre

Dr Greg Elgar
Medical Research Council

Professor David Fell
Oxford Brookes University

Dr Jeremy Gunawardena
Harvard Medical School, USA

Professor Colin Kleanthous
University of York

Dr Melanie Lee
Celltech Group

Professor Jens Nielsen
Technical University of Denmark

Professor Denis Noble
University of Oxford

Dr Jonathan Powell
Unilever Research

Professor Willem Stiekema
Wageningen University, The Netherlands

Dr Jens Timmer
Institute of Physics, Freiburg, Germany

Professor Hans Westerhoff
Vrije Universiteit, The Netherlands

Sustainable Agriculture Panel

Professor Jeff Waage (Chair)
Imperial College London

Dr Tina Barsby
Biogemma UK

Dr David Brightman
Brightman Farms

Professor John Crawford
University of Abertay Dundee

Professor Steve Edwards
Veterinary Laboratories Agency

Dr Laura Green
University of Warwick

Professor Graham Jellis
Home-Grown Cereals Authority

Professor Ken Killham
University of Aberdeen

Professor Chris Pollock CBE
Institute of Grassland and Environmental Research

Dr Sarah Rees
Syngenta

Professor Bill Sutherland
University of East Anglia

Mr Chris Warkup
Genesis Faraday Partnership

Studentships & Fellowships Panel

Professor Mary Bownes (Chair)
University of Edinburgh

Dr Mike Collis
Pfizer UK

Dr Mark Edwards
Heptagen

Professor Roger Leigh
University of Cambridge

Professor David Rice
University of Sheffield

Professor Ian Roberts
University of Manchester

Dr Helen Sang
Roslin Institute

Dr Barrie Ward
KuDos Pharmaceuticals

Professor Tony Wilkinson
University of York

Professor Susan Wonnacott
University of Bath

Professor Steve Yeaman
University of Newcastle

Tools and Resources Panel

Professor Anne Dell FRS (Chair)
Imperial College London

Dr Justin Molloy
National Institute for Medical Research

Dr Julian Burke
Genetix

Professor Keith Edwards
University of Bristol

Professor Peter Ghazal
University of Edinburgh

Professor Jon Cooper
University of Glasgow

Professor Andrew Millar
University of Warwick

Professor Simon Phillips
Univesity of Leeds

Mr Mike Ambrose
John Innes Centre

Professor Alan Archibald
Roslin Institute

Dr John Pillmoor
University of York

Professor Simon Gaskell
University of Manchester

Dr Jerry Lanfear
Pfizer UK

Prof Ernest Laue
University of Cambridge

Dr Frank Craig
Smart Holograms

Dr Caroline Pung
The British Library

COMMITTEES

Agri-Food Committee

Professor Christine Williams (Chair)
University of Reading

Dr Declan Barraclough
Environment Agency

Dr Steve Beckett
Nestle York Ltd

Dr Judy Buttriss
British Nutrition Foundation

Professor John Crawford
University of Abertay Dundee

Professor Willie Donachie
Moredun Research Institute

Professor Keith Edwards
University of Bristol

Dr Pinder Gill
Meat & Livestock Commission

Professor Barry Hirst
University of Newcastle

Professor Julian Ketley
University of Leicester

Dr Gordon MacPherson
University of Oxford

Professor Simon McQueen-Mason
University of York

Dr Jonathan Powell
Unilever Research

Professor Hilary Powers
University of Sheffield

Professor Peter Shewry
Rothamsted Research

Professor Mark Tatchell
Consultant

Observers

Mr R Irvine
Scottish Executive Environment and Rural Affairs Department

Dr Katherine Riggs
Department for Environment, Food and Rural Affairs

Mr Alisdair Wotherspoon
Food Standards Agency

Animal Sciences Committee

Professor Russell Foster (Chair)
Imperial College London

Professor John Altringham
University of Leeds

Dr Bruce Campbell
University of Nottingham

Professor Mike Denham
University of Plymouth

Dr Greg Elgar
Medical Research Council

Dr David Haig
Moredun Research Institute

Dr David Hazlerigg
University of Aberdeen

Professor Celia Heyes
University College London

Dr Lindy Holden-Dye
University of Southampton

Professor Glyn Humphreys
University of Birmingham

Dr Jim Kaufman
Institute for Animal Health

Dr Simon Killcross
Cardiff University

Dr Cahir O'Kane
University of Cambridge

Dr Amanda Parker
University of Newcastle

Dr Andrew Parsons
GlaxoSmithKline

Professor Eleanor Riley
London School of Hygiene & Tropical Medicine

Professor Tim Skerry
University of Sheffield

Professor Alan Teale
Stirling University

Observers

Dr Nick Ambrose
Scottish Executive Environment and Rural Affairs Department

Dr Peter Stevenson
Department for Environment, Food and Rural Affairs

Biochemistry and Cell Biology Committee

Dr Fiona Marshall (Chair)
University of Cambridge

Professor Alistair Brown
University of Aberdeen

Professor Louise Cosby
Queen's University Belfast

Professor Mark Darlison
Nottingham Trent University

Professor Michael Ehrmann
University of Cardiff

Professor Vincent Emery
Royal Free & University College Medical School London

Professor Rob Field
University of East Anglia

Professor Stephen High
University of Manchester

Dr Eric Karran
Eli Lilly and Company Ltd

Professor Colin Kleanthous
University of York

Professor Clive Lloyd
John Innes Centre

Dr Wendy MacFarlane
University of Newcastle

Dr Oliver Rausch
Celltech R&D Ltd

Dr Chris Rawlings
Rothamsted Research

Dr David Sansom
University of Birmingham

Dr Alison Smith
University of Cambridge

Professor Anne Stephenson
University of London

Professor Tony Trewavas
University of Edinburgh

Biomolecular Sciences Committee

Professor Simon Phillips (Chair)
University of Leeds

Professor Chris Abell
University of Cambridge

Professor Jim Barber FRS
Imperial College London

Professor Paul Barlow
University of Edinburgh

Dr Alex Breeze
AstraZeneca

Dr Paula Booth
University of Bristol

Dr Dave Brown
Pfizer UK

Professor Tim Bugg
University of Warwick

Professor Stephen Caddick
University College London

Dr Ben Davis
University of Oxford

Dr Colin Edge
GlaxoSmithKline

Dr Jane Grasby
University of Sheffield

Dr Justin Molloy
National Institute for Medical Research

Dr John Overington
Inpharmatica

Dr Emma Raven
University of Leicester

Professor Garry Taylor
University of St Andrews

Professor Dek Woolfson
University of Sussex

Engineering and Biological Systems Committee

Professor Peter Fryer (Chair)
University of Birmingham

Professor Robert Beynon
University of Liverpool

Dr Anne Brindley
AstraZeneca

Professor Helen Byrne
University of Nottingham

Professor Jon Cooper
University of Glasgow

Professor Zhanfeng Cui
University of Oxford

Professor David Fell
Oxford Brookes University

Dr Robert Holt
Avecia Life

Professor Eileen Ingham
University of Leeds

Professor David Jones
University College London

Professor Ian Jones
University of Reading

Dr Michael Larkin
Queens University Belfast

Professor Graham Leggett
University of Sheffield

Professor Stephen Muggleton
Imperial College London

Professor Kevin Shakesheff
University of Nottingham

Dr Paul Varley
Cambridge Antibody Technology

Dr Martin Anthony
Department of Trade and Industry

Genes and Developmental Biology Committee

Professor Ottoline Leyser
University of York

Professor Michael Akam FRS
University of Cambridge

Dr Mark Blaxter
University of Edinburgh

Professor Martin Buck
Imperial College London

Professor Constanze Bonifer
University of Leeds

Professor Enrico Coen CBE FRS
John Innes Centre

Dr Martin Ford
GlaxoSmithKline

Dr Peter Hollingsworth
Royal Botanic Garden Edinburgh

Dr Elizabeth Jones
University of Warwick

Professor Mike Kearsey
University of Birmingham

Professor Malcolm Maden
King's College London

Professor Marysia Placzek
University of Sheffield

Dr Cathy Prescott
Avlar Bioventures Ltd

Dr Clive Price
University of Lancaster

Dr Robert Saunders
Open University

Dr Robbie Waugh
Scottish Crop Research Institute

Plant and Microbial Sciences Committee

Professor Robert Edwards (Chair)
University of Durham

Dr Aileen Allsop
AstraZeneca

Professor Judy Armitage
University of Oxford

Professor Mike Bushell
University of Surrey

Professor Allan Downie
John Innes Centre

Dr Paul Dupree
University of Cambridge

Professor Phillip Gilmartin
University of Leeds

Professor Ian Graham
University of York

Dr Julie Gray
University of Sheffield

Dr Joel Milner
University of Glasgow

Professor Nic Talbot
University of Exeter

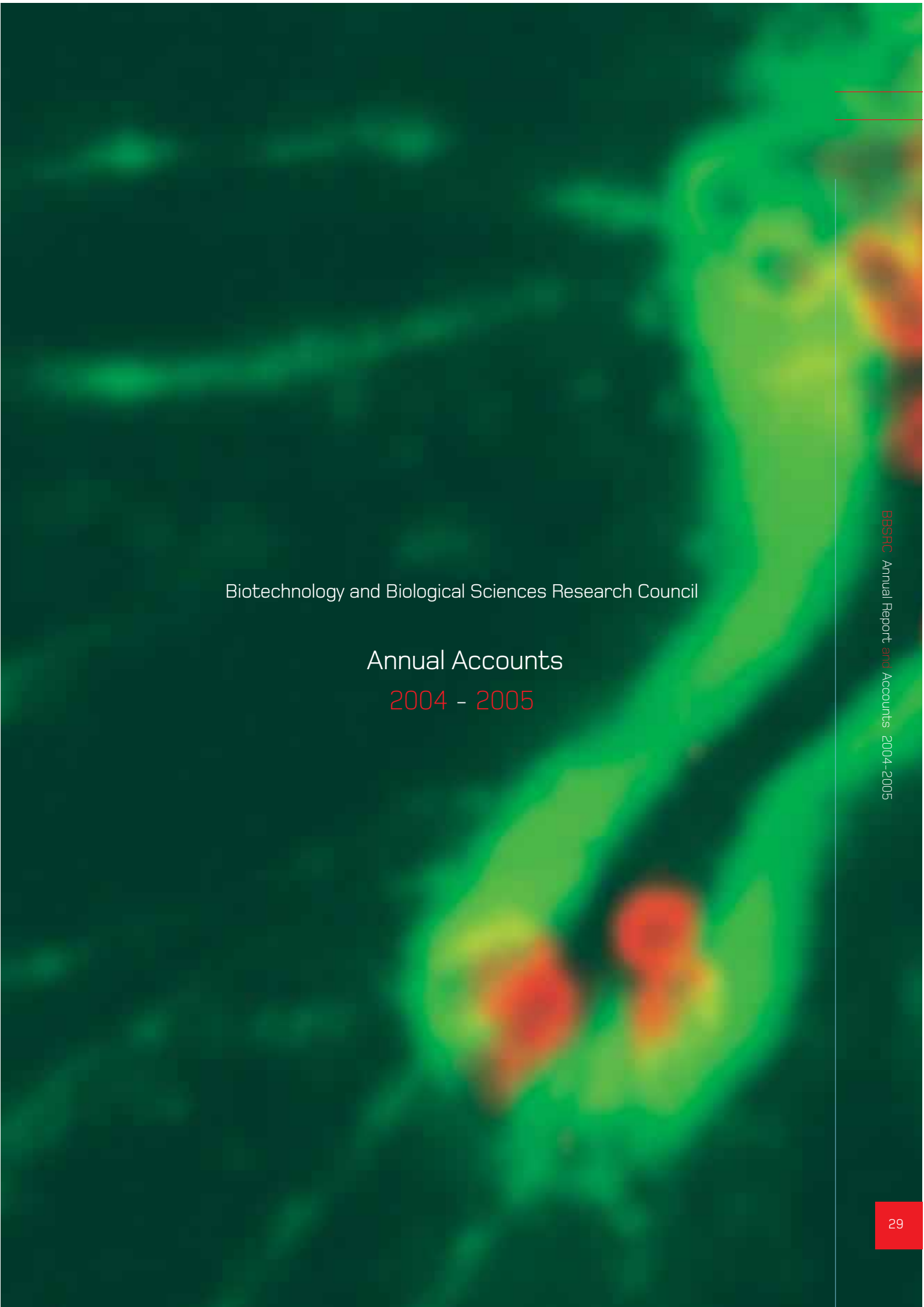
Dr Alyson Tobin
University of St Andrews

Dr Lesley Torrance
Scottish Crop Research Institute

Dr Huw Williams
Imperial College London

Dr Jeroen Wilmer
Biogemma UK Ltd

Dr Anil Wipat
University of Newcastle



Biotechnology and Biological Sciences Research Council

Annual Accounts

2004 - 2005

Foreword to the Accounts

INTRODUCTION

1. The Biotechnology and Biological Sciences Research Council (BBSRC) was established by Royal Charter on 1 April 1994. BBSRC is a Non-Departmental Public Body (NDPB) and is funded mainly by Grant-in-aid from its sponsoring body, the Department of Trade and Industry (DTI) via the Office of Science and Technology (OST).

2. These accounts have been prepared in accordance with the Accounts Direction issued by the Secretary of State for Trade and Industry, pursuant to Section 2(2) of the Science and Technology Act 1965.

MISSION STATEMENT

3. The mission of the BBSRC is:
   - to promote and support high quality basic, strategic and applied research and related postgraduate training relating to the understanding and exploitation of biological systems;
   - to advance knowledge and technology, and provide trained scientists and engineers, which meet the needs of users and beneficiaries (including the agriculture, bio processing, chemical, healthcare, pharmaceutical and other biotechnological related industries), thereby contributing to the economic competitiveness of the United Kingdom and the quality of life;
   - to provide advice, disseminate knowledge, and promote public understanding in the fields of biotechnology and biological sciences.

FINANCIAL HIGHLIGHTS

4. - Although Joint Infrastructure Funding decreased by **£2.4M**, revenue Grant-in-aid increased by **£10.0M** financing a rise in expenditure on grants, training awards and fellowships of **£8.5M**.
   - Grant expenditure on capital and buildings was up by **£2.5M** and capital commitments more than doubled to **£10.1M**.
   - Revaluation reserve increased by **£7.6M**; general reserve (retained surplus carried forward) at 31 March 2005 was **£2.1M**. This was a decrease of **£6.5M** in the year following an increase of **£13.9M** in costs for research institute restructuring.
   - The value of the Council's investments, land and buildings and equipment rose by **£5.3M**. This combined with the decrease in the general reserve resulted in Government's funds decreasing by **£1.2M**.

DEVELOPMENTS SINCE 31 MARCH 2005

5. There have been no material events since the end of the financial year which impact on these financial statements.

PENSIONS

6. The BBSRC has responsibility for the Research Councils' Pension Schemes (RCPS) and the Chief Executive of BBSRC is the Accounting Officer for the pension schemes. The accounts of the RCPS are published separately.

CREDITOR PAYMENT POLICY

7. BBSRC observes the CBI's Code of Practice. The Council 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 – 92% of payments were made within 30 days during 2004-05.

   The Late Payment of Commercial Debts Regulations 2002 came into force on 7 August 2002 providing 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.

COUNCIL

8. The Council determines BBSRC policies and strategies. BBSRC Council comprises the Chairman, the Chief Executive and between 10-18 other 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 Trade and Industry. They are required to abide by a Code of Practice that covers conflicts of interests and general conduct.

   The Council approves the membership of the six Boards that report to it, and the Chairs of the Boards are required to report regularly on the work of their respective Boards and to take forward specific tasks as directed by Council.

   The six areas dealt with by the Boards are Appointments, Audit, Estates & Equipment, Human Resources, Remuneration and Strategy.

The Council is also expected to ensure that the position of Clerk to Council, which provides an administrative interface between the Chairman, Council and the BBSRC Executive, is of an appropriate standing and experience. The Clerk to the Council is provided by the BBSRC Swindon Office Corporate Science Group.

The following persons were members of the BBSRC during 2004-05:-

Chairman:	Dr Peter S Ringrose
Deputy Chairman:	Professor Julia M Goodfellow CBE
Members:	Professor Simon Bright (from 20 April 2004)
	Mr David K Brightman
	Professor Howard Dalton FRS
	Dr Monica Darnbrough CBE (until 31 December 2004)
	Professor David Delpy FRS (from 1 April 2004)
	Professor Robert Freedman
	Professor Chris Gilligan
	Mr John S Graham (until 1 July 2004)
	Professor Keith Gull CBE FRS
	Professor A Jackie Hunter (from 1 April 2004)
	Professor Douglas B Kell
	Professor Anthony Nash
	Dr Alistair Penman
	Professor Cheryll A Tickle CBE FRS

DIVERSITY

9. The BBSRC's policy is not to discriminate against people on the grounds of gender, age, religious beliefs, disability, race or sexual orientation. All staff are recruited and considered for career development, promotion and training on a non-discriminatory basis.

EMPLOYEE INVOLVEMENT

10. The BBSRC has well-established procedures for communicating with staff and promoting employee involvement and participation at local and national level. Senior Management and Trade Union representatives meet regularly in Central and Institute Negotiating and Consultative Committees to discuss conditions of service and other matters which have a bearing on the management of the Council. Additionally staff are kept informed through the quarterly publication "BBSRC Business" and by intranet bulletins, circulars, staff briefings and letters direct to all members of staff.

AUDIT BOARD

11. The Council has an Audit Board of which the Chairman and at least three non-executive members 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. The 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 the Council's Accounts.

AUDITORS

12. The accounts of the BBSRC 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 £43,000.

Professor Julia M Goodfellow — Date: 5 July 2005
Chief Executive and Accounting Officer

Statement of Council's and Chief Executive's responsibilities with respect to Financial Statements

Under Section 2(2) of the Science and Technology Act 1965 the Council is required to prepare a statement of accounts for each financial year in the form and on the basis determined by the Secretary of State for Trade and Industry, with the consent of the Treasury. The accounts are prepared on an accruals basis and must show a true and fair view of the Council's state of affairs at the year-end and of its income and expenditure, total recognised gains and losses, and cash flows for the financial year.

In preparing the accounts the Council is required to:

- observe the accounts direction issued by the Secretary of State for Trade and Industry, 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 have been followed, and disclose and explain any material departures in the financial statements; and
- prepare the financial statements on the going concern basis, unless it is inappropriate to presume that the Council will continue in operation.

As the senior full-time official, the Chief Executive carries out the responsibilities of Accounting Officer for the Council. Her relevant responsibilities as Accounting Officer, including her responsibility for the propriety and regularity of the public finances and for the keeping of proper records, are set out in the Non-Departmental Public Bodies' Accounting Officer's Memorandum, issued by the Treasury and published in "Government Accounting" (The Stationery Office).

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 in Government Accounting.

The DTI 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 2005 and up to the date of approval of the annual report and accounts, and accords with 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 institutes;
3) updating and reviewing the register of key risks at least annually.

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

4. The Risk and Control Framework

Risk management and internal control is considered on a regular basis by the BBSRC Executive Group and Audit Board during the year. The Audit Board plays an important role in overseeing the internal control arrangements for BBSRC and the sponsored institutes. The Board reviews the external audit management letters arising from BBSRC and from the 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 in respect of BBSRC and its sponsored institutes are reviewed by the 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 role in terms of risk management is to oversee the work of the Audit Board through review of Audit Board minutes and periodic oversight of the BBSRC Risk Inventory.

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

These have been:

1. Silsoe Research Institute (SRI) Restructuring. Continuing. The aim is an orderly restructuring of SRI following withdrawal of all BBSRC Core Strategic Grant funding by the end of 2005/06.

2. Implementation of Freedom of Information Act. Interim solution complete at January 2005. Individual rights of access to information came into force on 1 January 2005. Full implementation of comprehensive information management system commenced.

3. Babraham Bioscience Technologies Ltd, Site Development. Continuing. The objective is to develop the Babraham Research Campus and let the Bio-Development building at its centre by July 2005.

4. IAH Pirbright Redevelopment. Continuing. The project is planned to replace the current very mixed facilities with state of the art flexible facilities including areas with the higher level of bio-security. This is allied to the relocation of the Virology Department of the Veterinary Laboratories Agency of Defra. Final capital commitments and longer term funding issues have been resolved at Ministerial level.

5. Introduction of four Grant Rounds. Continuing. Delivery of four grant rounds is seen as key to maintaining the BBSRC's credibility with the wider community. This change is being introduced at the same time as the pre-award and post award grants administrations are combined under one management structure.

6. GABRIEL. Completed. Project to implement the GASP/MANTRA Grants, Fellowships and Studentships Administration System to replace the previous BBSRC Fraser Williams Grant Administration System and the BBSRC Studentships Administration System.

Research Councils carry out Dipstick Testing, which reviews expenditure on their research grants at universities. The testing broadly looks at overall systems of control and is an important element of the risk management framework. This reinforces the work led by HEFCE and its sister bodies.

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 managers 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 the Council and the 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 Internal Audit, the risk management frameworks developed by BBSRC and its sponsored institutes and responses to external management letters which identify where control gaps exist.

BBSRC-sponsored institutes have their own Risk Management Assurance Framework (RMAFs) 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.

Professor Julia M Goodfellow
Chief Executive and Accounting Officer

Date: 5 July 2005

Certificate and Report of the Comptroller and Auditor General to the Houses of Parliament

I certify that I have audited the financial statements on pages 36 to 53 under the Science and Technology Act 1965. These financial statements have been prepared under the historical cost convention as modified by the revaluation of certain fixed assets and the accounting policies set out on pages 39 to 40.

RESPECTIVE RESPONSIBILITIES OF THE COUNCIL, CHIEF EXECUTIVE AND AUDITOR

As described on page 32, the Council and Chief Executive are responsible for the preparation of the financial statements in accordance with the Science and Technology Act 1965 and Department of Trade and Industry directions made thereunder and for ensuring the regularity of financial transactions. The Council and Chief Executive are also responsible for the preparation of the other contents of the Annual Report. My responsibilities, as independent auditor, are established by statute and I have regard to the standards and guidance issued by the Auditing Practices Board and the ethical guidance applicable to the auditing profession.

I report my opinion as to whether the financial statements give a true and fair view and are properly prepared in accordance with the Science and Technology Act 1965 and directions made thereunder by the Secretary of State for Trade and Industry, and 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. I also report if, in my opinion, the Foreword is not consistent with the financial statements, if the Council has not kept proper accounting records, or if I have not received all the information and explanations I require for my audit.

I read the other information contained in the Annual Report and consider whether it is consistent with the audited financial statements. I consider the implication for my certificate if I become aware of any apparent misstatements or material inconsistencies with the financial statements.

I review whether the statement on pages 33 and 34 reflects the Council's compliance with Treasury's guidance on the Statement on Internal Control. I report if it does not meet the requirements specified by Treasury, or, if the statement is misleading or inconsistent with other information I am aware of from my audit of the financial statements. I am not required to consider, nor have I considered whether the Accounting Officer's Statement on Internal Control covers all risks and controls. I am also not required to form an opinion on the effectiveness of the Council's corporate governance procedures or its risk and control procedures.

BASIS OF AUDIT OPINION

I conducted my audit in accordance with United Kingdom Auditing Standards issued by the Auditing Practices Board. An audit includes examination, on a test basis, of evidence relevant to the amounts, disclosures and regularity of financial transactions included in the financial statements. It also includes an assessment of the significant estimates and judgements made by the Council and Chief Executive in the preparation of the financial statements, and of whether the accounting policies are appropriate to the Council'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 are free from material misstatement, whether caused by error, or by fraud or other irregularity 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 have also evaluated the overall adequacy of the presentation of information in the financial statements.

OPINION

In my opinion:

- the financial statements give a true and fair view of the state of affairs of the Biotechnology and Biological Sciences Research Council at 31 March 2005 and of the deficit, total recognised gains and losses and cash flows for the year then ended and have been properly prepared in accordance with the Science and Technology Act 1965 and directions made thereunder by the Secretary of State for Trade and Industry; and
- 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.

I have no observations to make on these financial statements.

John Bourn
Comptroller and Auditor General
11 July 2005

National Audit Office
157-197 Buckingham Palace Road
Victoria
London SW1W 9SP

Income & Expenditure Account for the year ended 31 March 2005

	NOTE	2004-05 £'000	2004-05 £'000	2003-04 £'000 (as restated)
INCOME				
Grant-in-aid	2	**275,460**		265,462
Release of Deferred Grant-in-aid				
- fixed assets depreciated during the year	10	**2,222**		1,763
- disposal of fixed assets during the year	10	**1,195**		48
Other Income	3	**10,853**		13,812
			289,730	281,085
EXPENDITURE				
Research and Capital Grants	4	**234,093**		228,095
Training Awards and Fellowships	4	**33,666**		31,149
Staff costs	5	**6,975**		6,158
Other operating costs	6a	**6,235**		6,335
Research Institute staff restructuring	7	**15,458**		1,561
Depreciation and impairment	9	**5,827**		5,082
			(302,254)	(278,380)
OPERATING (DEFICIT)/SURPLUS FOR THE YEAR			**(12,524)**	2,705
Notional Interest	6c		**(7,184)**	(6,720)
Gain on disposals and demolition of fixed assets	8		**1,184**	499
DEFICIT FOR THE YEAR			**(18,524)**	(3,516)
Reversal of Notional Interest	6c		**7,184**	6,720
(Deficit)/Surplus after reversal of Notional Interest			**(11,340)**	3,204
Surplus/(Deficit) brought forward			**8,634**	(2,094)
Transfers from revaluation reserve				
- fixed assets depreciated during the year	10		**3,605**	3,319
- disposal of fixed assets during the year	10		**1,203**	4,205
GENERAL RESERVE CARRIED FORWARD			**2,102**	8,634

All activities are regarded as continuing.

The notes on pages 39 to 53 form part of these accounts.

Balance Sheet as at 31 March 2005

	NOTE	31 March 2005 £'000	31 March 2005 £'000	31 March 2004 £'000
FIXED ASSETS				
Intangible	9	**701**		892
Tangible	11	**200,872**		196,097
Investments	12	**1,000**		250
			202,573	197,239
CURRENT ASSETS				
Debtors:				
- due within one year	13(i)	**17,772**		16,539
- due after one year	13(ii)	**13,084**		9,297
		30,856		25,836
Cash at bank and in hand		**3,104**		2,251
		33,960		28,087
CURRENT LIABILITIES				
Creditors falling due within one year	14a	**(15,050)**		(15,491)
NET CURRENT ASSETS			**18,910**	12,596
TOTAL ASSETS LESS CURRENT LIABILITIES			**221,483**	209,835
LONG TERM LIABILITIES				
Creditors falling due after one year	14b		**(130)**	(260)
Provisions for liabilities and charges	15		**(16,678)**	(3,702)
NET ASSETS			**204,675**	205,873
Financed by:				
DEFERRED INCOME				
Deferred capital grant-in-aid	10		**40,517**	42,812
RESERVES				
Revaluation reserve	10		**162,056**	154,427
General reserve			**2,102**	8,634
TOTAL GOVERNMENT FUNDS	16		**204,675**	205,873

Professor Julia M Goodfellow
Chief Executive and Accounting Officer

Date: July 2005

The notes on pages 39 to 53 form part of these accounts.

Cash Flow Statement
for the year ended 31 March 2005

	NOTE	2004-05 £'000	2004-05 £'000	2003-04 £'000 (as restated)
NET CASH OUTFLOW FROM OPERATING ACTIVITIES	17(i)		**(2,567)**	(4,179)
CAPITAL EXPENDITURE				
Payments to acquire tangible fixed assets	17(iii)	**(534)**		(2,430)
Purchase of investments	17(iii)	**(750)**		(250)
Receipts from sale of fixed assets	8	**3,582**		4,752
NET CASH INFLOW FROM CAPITAL EXPENDITURE AND RECEIPTS			**2,298**	2,072
NET CASH OUTFLOW BEFORE FINANCING			**(269)**	(2,107)
FINANCING				
Capital Grant-in-aid received	2	**1,122**		2,613
NET CASH INFLOW FROM FINANCING			**1,122**	2,613
INCREASE IN CASH	17(ii)		**853**	506

Statement of Total Recognised Gains and Losses
for the year ended 31 March 2005

	2004-05 £'000	2003-04 £'000
DEFICIT FOR THE YEAR	**(18,524)**	(3,516)
Reversal of Notional Interest	**7,184**	6,720
(Deficit)/surplus after reversal of Notional Interest	**(11,340)**	3,204
Other gains / losses		
- revaluation in year	**8,415**	17,117
- asset additions at institutes	**4,022**	6,625
TOTAL RECOGNISED GAINS AND (LOSSES) FOR THE YEAR	**1,097**	26,946

The notes on pages 39 to 53 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 on behalf of the Secretary of State for Trade and Industry dated 27 November 2001.

ii) The direction provides for the accounts to be prepared under the historical cost convention modified to include the revaluation of tangible fixed assets. Without limiting the information given the accounts meet the accounting and disclosure requirements of the Companies Act 1985 and the accounting and financial reporting standards issued or adopted by the Accounting Standards Board in so far as these requirements are appropriate. The Direction exempts the Council from the requirement to produce a note of historical cost profits and losses.

b) Tangible and Intangible Fixed Assets

i) Capital expenditure includes the purchase of plant and equipment valued at £3,000 or more, milk quotas, 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 which 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 Income and Expenditure Account.

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 addition within these accounts based on a professional valuation at the Balance Sheet date.

iii) The basis of valuation is open market value where this can be established or depreciated replacement cost in the case of specialised scientific buildings. Valuations are adjusted annually to the Balance Sheet date by using appropriate published indices and statistics. A full revaluation of milk quotas, land and buildings is carried out at least every five years.

Buildings have been grouped for valuation purposes and similar types of building have been put into bands, which have similar remaining lives. The three main categories of buildings used are depreciated replacement cost buildings (e.g. laboratories), agricultural buildings and dwellings.

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 the Council there is no material difference between the historic cost of plant and 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
Plant and Equipment	-	10 to 15 years
Office and Computing Equipment	-	5 years
System Software	-	5 years
Personal Computers	-	3 years
Motor Vehicles	-	up to 4 years
Assets Under Construction	-	not depreciated until brought into use

c) Investments

Investments are stated at cost less provision for any impairment in value. The Council's Partners' Capital in the Rainbow Seed Fund is treated as an investment. The Public Sector Research Exploitation Funding received by BBSRC from the Office of Science and Technology and transferred to the Rainbow Seed Fund is treated as part of grant expenditure.

d) 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.

e) Grant-in-aid

Grant-in-aid for revenue purposes is credited to income in the year in which it is received. Grant-in-aid applied for the purchase of fixed assets is credited to the Deferred Grant-in-aid account. This is released to income over the estimated useful lives of the related assets.

f) Research Grants

Research grants are charged to the Income and Expenditure account in the period to which it relates.

g) 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 Income and Expenditure account.

h) 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 Income and Expenditure account as miscellaneous sundry income. Income is shown net of VAT.

i) Retirement Costs

Contributions to pension schemes 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.

j) Notional Interest

In line with HM Treasury requirements, notional costs are included in respect of interest on capital. This charge is included in the accounts to reflect a charge for the use of capital in the business in the year, as the Council has no specific interest bearing debt. Note 6c refers.

2. GRANT-IN-AID

	2004-05 £'000	2003-04 £'000
Amount provided by the Office of Science and Technology under Request for Resources (RfR) 2 Subhead L	**276,582**	268,075
Less Capital Grant-in-aid received transferred to Deferred Grant-in-aid (Note 10)	**(1,122)**	(2,613)
TOTAL	**275,460**	265,462

3. OTHER INCOME

	2004-05 £'000	2003-04 £'000
Grant-in-aid RfR 2 Subhead T	**125**	85
Other Research Councils and Government Departments	**5,305**	5,479
Joint Infrastructure Fund	**969**	3,367
Other Operating Income	**553**	394
	6,952	9,325
Recoveries of Costs		
- IT Services to Institutes	**3,669**	4,349
- Other recoveries	**232**	138
	3,901	4,487
TOTAL	**10,853**	13,812

4. RESEARCH & CAPITAL GRANTS AND TRAINING AWARDS

	2004-05 £'000	2003-04 £'000 (as restated)
Responsive Research Grants	**109,691**	98,542
Core Strategic Grants	**58,434**	60,650
Research Initiatives	**34,938**	32,334
Equipment and Facilities	**15,301**	23,385
Capital and Buildings	**15,729**	13,184
	234,093	228,095
Training Awards and Fellowships	**33,666**	31,149
	267,759	259,244
Beneficiaries:		
Universities	**168,112**	163,477
Research Institutes	**89,481**	83,442
Other Research Councils and other organisations	**10,166**	12,325
	267,759	259,244

5. STAFF COSTS

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

	2004-05	2003-04
	£'000	£'000
		(as restated)
Salaries and wages	**7,119**	6,328
Social Security costs	**553**	484
Pension costs	**678**	601
Other fees and honoraria	**211**	219
	8,561	7,632
Less Joint Services staff on payroll	**(1,670)**	(1,570)
Administrative and BITS staff on payroll	**6,891**	6,062
Temporary agency staff	**84**	96
TOTAL	**6,975**	6,158

STAFF NUMBERS

	Average Number of Staff	
	2004-05	2003-04
Administrative	**191**	175
BITS	**42**	43
	233	218
Joint Services	**63**	64
Staff on payroll	**296**	282
Temporary agency staff	**2**	3
	298	285

The total average **FTEs** (Full Time Equivalent Staffing) for **2004-05** was 273.5 (170.6, 41.5, 59.3 and 2.1 respectively) and the total average FTEs for 2003-04 was 267.3 (160.9, 42.5, 61.2 and 2.7 respectively).

In addition to the above, 2,789 staff (2003-04: 3,171) are seconded to, and salaries/wages paid by, grant-aided institutes sponsored by BBSRC.

Remuneration of Senior Management

i) **Chief Executive**

Professor Julia M Goodfellow CBE was appointed Chief Executive on 1 January 2002. Her total emoluments in 2004-05 were £119,589 (2003-2004: £114,090), comprising salary of £102,284 (2003-04: £93,194), bonus of £16,035 (2003-04: £18,966) and a real increase in pension earned of £1,270 (2003-04: £1,930); a real increase in pension lump sump of £3,810 (2003-04: £4,891) was also earned. Following a 2-year extension her fixed-term period appointment will terminate on 31 December 2007.

ii) The following number of senior employees received remuneration falling within the following ranges:

			2004-05	2003-04
			No.	No.
£100,000	to	£109,999	**1**	-
£90,000	to	£99,999	**-**	1
£80,000	to	£89,999	**1**	1
£70,000	to	£79,999	**1**	1
£60,000	to	£69,999	**1**	3
£50,000	to	£59,999	**11**	8

Remuneration includes Employers' Pension Scheme Contributions of 10.1% in both years.

Senior employees who are members of the BBSRC Executive Group are:

Professor Julia M Goodfellow CBE, BBSRC Chief Executive
Mr S H Visscher, BBSRC Executive Director
Professor N Brown, BBSRC Director of Science and Technology Group (from 1 September 2004)
Professor D C S White, BBSRC Director of Science and Technology Group (until 31 August 2004)
Mr P Swinburne, BBSRC Director of Human Resources Group
Dr D Yarrow, BBSRC Director of Corporate Science Group

All senior employees withheld their consent to further disclosure. No senior employee is in receipt of benefits in kind.

iii) **Research Institute Directors**
Details of research institute Directors' emoluments are published in the statutory accounts prepared by each institute.

Superannuation

Employees of the Council are members of the Research Councils' Pension Schemes, which are funded on a pay-as-you-go basis principally through employer and employee contributions and annual Grant-in-aid. The pension schemes are by analogy to the Principal Civil Service Pension Scheme (PCSPS), except that while the schemes which are defined benefits schemes and provide retirement and related benefits on final emoluments, redundancy and injury benefits are administered and funded by the Council. The pension schemes are administered by the Research Councils' Joint Superannuation Services and the schemes' finances are administered by the BBSRC. A separate Research Councils' Pensions Schemes Account is published for the year ended 31 March 2005 and contains the further disclosure of information required under the relevant accounting standard.

As the Research Councils Pensions' Schemes are an unfunded multi-employer defined benefit scheme, BBSRC is unable to identify its share of the underlying assets and liabilities.

The Council pays employers' contributions, at a percentage of scheme members' pensionable pay and emoluments assessed by the Government Actuary's Department (GAD) on a periodical basis. The rate from 1 April 1999 was 10.1%, which was established following GAD's assessment at 31 March 1997. The contribution rate reflects benefits as they are accrued not when the costs are actually incurred. The rate will change to 21.3% from 1 April 2005 following a new assessment by GAD.

Council Honoraria and Fees

i) The total emoluments of the Chairman of the BBSRC were honoraria of £14,550 (2003-04: £14,225). 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 for a period of four years from 1 May 2003.

ii) The following number of Council and Committee members received honoraria and fees within the following ranges:

			2004-05	2003-04
			No.	No.
£10,000	-	£14,999	**1**	1
£5,000	-	£9,999	**11**	9
£0	-	£4,999	**208**	242

iii) The standard fee paid to Council and Committee members was:

	Until 30 September 2004	From 1 October 2004	
	£	£	
Council Chairman	14,400	14,700	per annum
Council Members who also chair Committees	8,000	8,160	per annum
Council Members	6,000	6,120	per annum
Committee Chairman	200	200	per day
Committee Members	150	150	per day

The fees for Committee Chairman and Members rise to £215 and £160 per day from 1 April 2005.

No fee was payable in respect of Civil Servants, employees of Research Councils and their institutes and other Non-Departmental Public Bodies and Agencies.

The normal term of appointment to Council is 3 – 4 years.

6a. OTHER OPERATING COSTS

	2004-05 £'000	2003-04 £'000 (as restated)
Maintenance, repairs and cleaning	**592**	434
Rent, rates and insurance	**236**	187
External audit	**43**	41
Internal audit	**188**	166
Office supplies	**704**	401
Computing expenses	**367**	419
Travel, subsistence and hospitality	**874**	764
Publications and publicity	**51**	63
Professional fees and management consultancy	**487**	516
Central Purchasing by BITS	**1,984**	2,628
Other	**709**	716
	6,235	6,335

6b. CALCULATION OF NET COSTS

Staff costs (see Note 5)	**6,975**	6,158
Recovery of costs (see Note 3)	**(3,901)**	(4,487)
Net administration and programme costs	**9,309**	8,006

6c. NOTIONAL INTEREST

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% (2003-04: 3.5%) rate of return on average net assets employed at cost or valuation excluding cash balances with the Paymaster General (£1.4M at 31 March 2005). The average net assets were £204.0M (2003-04: £192.0M).

The reported notional cost is subsequently reversed in the Income & Expenditure Account in accordance with Treasury NDPB Guidance. 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.

7. RESEARCH INSTITUTE STAFF RESTRUCTURING

	2004-05	2003-04
	£'000	£'000
Payments not provided for in Note 15		
Annual Compensation Payments	**757**	335
Redundancy Payments	**809**	3,435
Early Retirement and Commuted Lump Sum Payments	**1,098**	1,974
Increase in provisions for Annual Compensation Payments and other costs (See Note 15)	**14,815**	1,608
Other Costs	**284**	234
	17,763	7,586
Recovered Redundancy and Annual Compensation Payments	**(1,207)**	(4,188)
Recovered and Recoverable Early Retirement Lump Sums	**(1,098)**	(1,837)
Net Cost	**15,458**	1,561

The total number of redundancies during 2004-05 was 45 (2003-04: 108).

8. GAIN ON DISPOSALS OR DEMOLITION OF FIXED ASSETS

	2004-05	2003-04
	£'000	£'000
Receipts on disposals of fixed assets	**3,582**	4,752
Less: Net Book Value of assets sold/demolished (See Note 9)	**(2,398)**	(4,253)
Net Gain	**1,184**	499

9. FIXED ASSETS

	INTANGIBLE Milk Quota At Valuation	TANGIBLE (See Note 11)	INVESTMENTS (See Note 12)	Total
	£'000	£'000	£'000	£'000
At 1 April 2004	**892**	**196,097**	**250**	**197,239**
Additions		**4,394**	**750**	**5,144**
Depreciation and impairment	**(151)**	**(5,676)**		**(5,827)**
Disposals	**(137)**	**(2,261)**		**(2,398)**
Revaluation in year	**97**	**8,318**		**8,415**
At 31 March 2005	**701***	**200,872**	**1,000**	**202,573**

*The Gross Book Value for Milk Quota at 31 March 2005 at Cost or Valuation was £852,000 with Cumulative Impairment of £151,000. At 1 April 2004 these values were £892,000 and £0 respectively.

10. FINANCING OF FIXED ASSETS

	DEFERRED GRANT-IN-AID	REVALUATION RESERVE	Total
	£'000	£'000	£'000
At 1 April 2004	42,812	154,427	197,239
Grant-in-aid Capital Expenditure and Additions at Institutes	1,122	4,022	5,144
Releases and Transfers to Income and Expenditure Account / General Reserve:			
- To match depreciation	(2,222)	(3,605)	(5,827)
- To match net book value of disposals	(1,195)	(1,203)	(2,398)
Revaluation in year		8,415	8,415
At 31 March 2005	40,517	162,056	202,573

11. TANGIBLE FIXED ASSETS

	Land and Completed Buildings £'000	Buildings Under Construction £'000	Total Land and Buildings £'000	Plant & Equipment £'000	Total £'000
Cost or Valuation					
At 1 April 2004	**291,190**	**2,283**	**293,473**	**3,931**	**297,404**
Additions	**4,023**	**100**	**4,123**	**271**	**4,394**
Reclassification	**2,283**	**(2,283)**			
Disposals	**(2,310)**		**(2,310)**	**(315)**	**(2,625)**
Revaluation in year	**11,292**		**11,292**		**11,292**
At 31 March 2005	**306,478**	**100**	**306,578**	**3,887**	**310,465**
Depreciation					
At 1 April 2004	**99,104**		**99,104**	**2,203**	**101,307**
Provided during the year	**5,068**		**5,068**	**608**	**5,676**
Disposals	**(50)**		**(50)**	**(314)**	**(364)**
Revaluation in year	**2,974**		**2,974**		**2,974**
At 31 March 2005	**107,096**		**107,096**	**2,497**	**109,593**
Net Book Value					
At 31 March 2005	**199,382**	**100**	**199,482**	**1,390**	**200,872**
At 1 April 2004	192,086	2,283	194,369	1,728	196,097

The land and buildings were professionally valued as at 31 December 2000 by Powis Hughes Chartered Surveyors in accordance with SAVP and RICS guidance notes save for Scottish properties where Foot and Mouth restrictions did not allow access for formal valuations to take place; Scottish properties were therefore valued on an interim basis. The formal valuations took place during 2001-02 and were incorporated in the Revaluation amounts for that year.

Breakdown of Land and Buildings	**2004-05 £'000**	2003-04 £'000
Institute Occupied Land and Buildings	**196,002**	188,874
Swindon Office	**3,380**	3,212
	199,382	192,086
Institute Assets Under Construction	**100**	2,283
	199,482	194,369
Freehold	**199,393**	194,281
Long Leasehold	**89**	88
	199,482	194,369

12. INVESTMENTS

	At 1 April 2004 £'000	Additions in year £'000	At 31 March 2005 £'000
Cost or Valuation			
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			
- On 1st June 2006 £500,000			
Plant Bioscience Ltd is incorporated in England and Wales			
The shares were 50% part paid at 31 March 2005			
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.			
Rainbow Seed Fund			
Partner's capital fund investment of £92	-	-	-
	250	750	1,000

13. DEBTORS

	2004-05 £'000	2004-05 £'000	2003-04 £'000
i) Due within one year:			
Trade debtors		**2,519**	2,950
Other debtors		**4,625**	3,820
Repayment of Early Retirement Lump Sums*		**1,057**	1,066
		8,201	7,836
Prepayments and accrued income:			
- Research grants	**2,579**		2,479
- Training awards	**4,265**		4,264
- Other	**2,727**		1,960
		9,571	8,703
		17,772	16,539
ii) Due after one year:			
Repayment of Early Retirement Lump Sums	**3,766**		3,932
Other	**9,318**		5,365
		13,084	9,297
		30,856	25,836

* Cash received from Research Councils' Pension Schemes (RCPS) in 2004-05 in repayment of Early Retirement Lump Sums (ERLS) was £1,146,000 (2003-04: £868,000).

There are no material debtor or creditor balances with other central government bodies, local authorities, NHS Trusts and public corporations.

14a. CREDITORS: Amounts falling due within one year

	2004-05 £'000	2004-05 £'000	2003-04 £'000
Trade creditors	**2**		329
Payments received on account	**109**		314
Purchase of tangible fixed assets	**162**		194
Other creditors	**543**		457
		816	1,294
Accruals:			
- Research grants	**13,560**		12,463
- Other	**674**		1,734
		14,234	14,197
		15,050	15,491

14b. CREDITORS: Amounts falling due after one year

	2004-05 £'000	2003-04 £'000
Purchase of tangible fixed assets	**130**	260

15. PROVISIONS FOR LIABILITIES AND CHARGES

Provisions for:	Annual Compensation Payments £'000	Major Institute Restructuring (See Note 21) £'000	Total £'000
At 1 April 2004	**3,702**		**3,702**
Amount provided in year	**15**	**14,800**	**14,815**
Amount expended in year	**(1,015)**	**(824)**	**(1,839)**
Total Provisions At 31 March 2005	**2,702**	**13,976**	**16,678**

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

The major institute restructuring relates to redundancies due the implementation of revised scientific strategies and the redeployment of Core Strategic Grant funding.

16. RECONCILIATION OF MOVEMENTS IN GOVERNMENT FUNDS

	2004-05 £'000	2003-04 £'000
Deficit for the year	**(18,524)**	(3,516)
Reversal of Notional Interest	**7,184**	6,720
Reversal of release of Deferred Grant-in-aid	**(3,417)**	(1,811)
Increases in Fixed Assets (See Note 10):		
Capital Grant-in-aid received applied to fixed asset purchases	**1,122**	2,613
Increase in Revaluation Reserve on additions at institutes	**4,022**	6,625
Revaluation in year	**8,415**	17,117
Change in Government Funds during the year	**(1,198)**	27,748
Government Funds as at 1 April	**205,873**	178,125
Government Funds as at 31 March 2005	**204,675**	205,873

17. NOTES TO THE CASHFLOW STATEMENT

i) Reconciliation of operating (deficit)/surplus to net cash outflow from operating activities

	2004-05	2003-04
	£'000	£'000 (as restated)
Operating (deficit)/surplus	**(12,524)**	2,705
Reversal of depreciation and impairment charge	**5,827**	5,082
Reversal of release of Deferred Grant-in-aid	**(3,417)**	(1,811)
Increase/(decrease) in provision for liabilities and charges	**12,976**	(304)
Increase in debtors	**(5,020)**	(3,980)
Decrease in creditors excluding those for fixed assets	**(409)**	(5,871)
Net cash outflow from operating activities	**(2,567)**	(4,179)

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

	2004-05	2003-04
	£'000	£'000
Cash as at 1 April 2004	**2,251**	1,745
Increase from operating activities	**853**	506
Cash as at 31 March 2005	**3,104**	2,251

iii) Movement in creditors and payments for fixed assets

	2004-05	2003-04
	£'000	£'000
Grant-in-aid capital expenditure (See Note 10)	**1,122**	2,613
Add decrease in fixed asset creditors	**162**	67
Payments to acquire fixed assets	**1,284**	2,680
Payments to acquire tangible fixed assets	**534**	2,430
Purchase of investments	**750**	250
	1,284	2,680

18. FORWARD COMMITMENTS ON APPROVED RESEARCH GRANTS

	2004-05	2003-04
	£M	£M
2004-05	-	149.6
2005-06	**164.6**	100.3
2006-07	**104.9**	56.3
2007-08	**57.4**	11.1
2008-09	**11.6**	1.6
After 2008-2009	**3.4**	-
	341.9	318.9

19. CAPITAL COMMITMENTS

The following capital commitments have been authorised as at 31 March:

	2004-05	2003-04
	£'000	£'000
Authorised for contracts to be let	**1,951**	4,684
Approved but not yet contracted	**8,137**	-
	10,088	4,684

In addition to the above, the Council has planned capital programmes of £39M (2003-04: £34M) of which £23M (2003-04: £14M) is for BBSRC's share of improved facilities and the re-development of the Institute for Animal Health (IAH) Pirbright site and £4.5M (2003-04: £Nil) for a new Cell Biology laboratory at the John Innes Centre (JIC).

20. CONTINGENT LIABILITIES

BBSRC has provided a Bank Guarantee to Bank of Scotland to cover a fifteen year, £11.5 million, loan facility to Babraham Bioscience Technologies Limited for the development of the Babraham BioPark. BBSRC's liability for this facility is capped at a maximum of £17.3 million. The difference in values is to accommodate costs arising from a potential default including interest and legal charges. The loan facility is at a fixed rate of interest of 5.4 %.

At 31 March 2005, BBT Ltd had drawn down £7.1 million (2003-04: £0.7 million) of their loan facility.

21. RELATED PARTY TRANSACTIONS

The BBSRC is a Non-Departmental Public Body sponsored by the Office of Science and Technology (OST) within the Department of Trade and Industry (DTI).

For the purposes of Financial Reporting Standard 8, OST/DTI are regarded as related parties. During the year, BBSRC has had various material transactions with OST/DTI and entities for which OST/DTI is regarded as the parent department, viz.: Economic and Social Research Council, Engineering and Physical Sciences Research Council, Medical Research Council, Natural Environment Research Council, Particle Physics and Astronomy Research Council, Council for the Central Laboratory of the Research Councils.

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

		£
Professor Howard Dalton FRS	1 award	44,729
Professor Chris A Gilligan	1 award	25,485
Professor Keith Gull CBE FRS	1 award	78,555
Professor Douglas B Kell	2 awards	128,023
Professor Anthony Nash	3 awards	209,432
Professor Cheryll A Tickle CBE FRS	2 awards	92,634

None of the above were involved in the approval of these grants.

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

Professor Quintin A McKellar	Institute for Animal Health
Professor Cheryll A Tickle CBE FRS	Roslin Institute
Professor Chris A Gilligan	Silsoe Research Institute

In addition, transactions with the eight BBSRC-sponsored research institutes are detailed below:

	Grants (See Note 4)		**Debtors (including loans)** (See Note 13)		**Major Provision** (See Note 15)	
	04-05	03-04	**04-05**	03-04	**04-05**	03-04
	£M	£M	**£M**	£M	**£M**	£M
Babraham Institute*	**12.7**	12.4	**0.3**	2.3		
Institute for Animal Health*	**17.4**	15.2	**4.8**	0.7	**2.5**	
Institute of Food Research*	**10.3**	10.0	**0.4**	0.4		
Institute of Grassland and Environmental Research*	**6.2**	5.6	**0.8**	0.4		
John Innes Centre	**17.9**	16.0	**1.2**	0.0	**1.5**	
Roslin Institute*	**5.7**	6.1	**0.7**	0.4		
Rothamsted Research	**15.1**	13.8	**4.6**	6.2		
Silsoe Research Institute*	**4.2**	4.3	**0.1**	0.1	**10.8**	
Total	**89.5**	83.4	**12.9**	10.5	**14.8**	

*Institutes occupying BBSRC owned estate at peppercorn rents.

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 period 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 government bodies are financed, BBSRC is not exposed to the degree of financial risk faced by business entities. Moreover, financial instruments play no role in creating or changing risk as 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.

Liquidity risk
BBSRC's net revenue resource requirements are financed by resources voted annually by Parliament, and administered as Grant-in-aid through the Office of Science and Technology, just as its capital expenditure largely is. BBSRC is not therefore exposed to significant liquidity risks.

Interest-rate risk
BBSRC's only exposure to interest rate risk is described in Note 20.

Foreign currency risk
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
Nil.

24. RESTATEMENT OF ACCOUNTS

1) Following a review of Other Operating Costs, the presentation in Note 4 of expenditure on Research and Capital Grants and Training Awards has been amended to include expenditure previously included in Other Operating Costs (note 6a) and now reclassified as Grants. In particular, the whole of Science and Society (£388,000), Subscriptions to Scientific bodies (£232,000) and International Funding (£593,000) have been reclassified with Refurbishment of Polaris House (£136,000) included in Capital and Buildings. Some Professional Fees (£95,000) have also been reclassified making a total of £1,444,000 of 2003-04 expenditure reclassified as Grants. There is no change to the total expenditure charged against income.

2) To better understand the Accounts, Recoveries of Cost have been separately shown in Note 3. A new note 6b then shows the net administration and programme costs as a memorandum figure.

3) The Fixed Asset values at 1 April 2004 for Milk Quota and the buildings at Institute of Food Research have been changed in respect of their valuation at 31 March 2004. These are shown within revaluations in year in Notes 9, 10 and 11. Revaluations at the start of the year were £120,000 upward for Milk Quota and £8,286,000 downward for buildings.

4) £454,000 fixed asset creditors in 2003-04 have been moved between the Cash Flow Statement and Note 17.

5) The split of staff costs between Administration and Joint Service Units for 2003-04 has been amended in Note 5. The joint service staff deduction has been reduced by £539,000, which is offset by reductions of £434,000 to salaries and wages, £45,000 to social security costs and £60,000 to pension costs. The cost of Temporary Agency Staff has also been separated. There is no change in the overall total.

6) To aid understanding of the Accounts, the Deferred Grant-in-aid and Revaluation Reserve notes have been combined as note 10 and moved next to a summary Fixed Asset note to illuminate the financing of fixed assets.

ACCOUNTS DIRECTION GIVEN BY THE SECRETARY OF STATE FOR TRADE AND INDUSTRY

The Secretary of State for Trade and Industry with the approval of the Treasury, in pursuance of Section 2(2) of the Science and Technology Act 1965, hereby gives the following Direction:

The annual accounts shall give a true and fair view of the income and expenditure cash flows for the financial year, and the state of affairs as at the year-end. Subject to this requirement the Biotechnology and Biological Sciences Research Council shall prepare accounts for the financial year ended 31 March 2002 and subsequent financial years in accordance with:

a. Executive Non-Departmental Public Bodies Annual Reports and Accounts Guidance published by HM Treasury and as amended from time to time.

b. other guidance which the Treasury may issue from time to time in respect of accounts where the requirement is to give a true and fair view of the financial statements;

c. any other specific disclosures which may be required by the Secretary of State;

Except where agreed otherwise with HM Treasury, in which case the exception shall be described in the notes to the accounts.

Signed for and on behalf of the Secretary of State for Trade and Industry

S Speed

Dated 27 November 2001

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