

BIOSCIENCES FEDERATION



INSTITUTE
OF BIOLOGY

Consultation on BBSRC's new Strategic Plan 2010 – 2015

A response to the Biotechnology and Biological Sciences Research
Council

September 2009

Introduction

The **Biosciences Federation** (BSF) is a single authority representing the UK's biological expertise, providing independent opinion to inform public policy and promoting the advancement of the biosciences. The Federation was established in 2002, and is actively working to influence policy and strategy in biology-based research – including funding and the interface with other disciplines - and in school and university teaching. It is also concerned about the translation of research into benefits for society, and about the impact of legislation and regulations on the ability of those working in teaching and research to deliver effectively. The Federation brings together the strengths of 45 member organisations (plus nine associate members), including the Institute of Biology.

The **Institute of Biology** is an independent and charitable body charged by Royal Charter to further the study and application of the UK's biology and allied biosciences. It has 12,000 individual members and represents 32 additional affiliated societies. This represents a cumulative membership of over 65,000 individuals, covering the full spectrum of biosciences from physiology and neuroscience, biochemistry and microbiology, to ecology, taxonomy and environmental science.

General

1. We welcome the opportunity to comment on the strategic proposals for 2010-15. These proposals build effectively on the current strategy and aim to capitalise on emerging strengths to advance research and innovation in the biological sciences and to derive economic and social value from the UK's world-class bioscience research base.

Strategic priorities

2. We appreciate the need to focus resources on key strategic priorities in order to maximise impact and maintain capacity in crucial areas, with the caveat that this must not impinge on the ability to support truly 'blue skies' research as a long-term investment for the future. The relative balance of funding between strategic priorities and responsive-mode is crucial.
3. The three strategic priorities are appropriate and sufficiently broad-ranging to encompass the majority of research that BBSRC currently funds. The considerations and potential areas of focus outlined in the consultation document appear largely sensible.
4. There may be some overlap between the 'Biosciences and Health' theme and the remit of the MRC. There may also be some overlap between this theme, which seems to focus on social psychology elements of health to a greater degree than the previous strategy, and the remit of the ESRC. Greater clarity for applicants will be required here.

Enabling themes

5. We are broadly supportive of the five enabling themes which underpin the strategic priorities. However, while we welcome the commitment to integrative and systems biology, we are concerned that the BBSRC's definition of systems biology is overly restrictive and excludes valuable systems approaches that do not involve predictive mathematical modelling. As the use of mathematical and computer modelling may not yet be possible or appropriate across the breadth of science which the BBSRC funds, systems biology should be considered in its broadest sense particularly given the intention to "*embed systems approaches as 'normal business' in responsive mode funding*".
6. Integrative biology is entirely lost from the detail of investment targets for integrative and systems biology on p13 of the document. Investment in *in vivo* mammalian physiology and pharmacology is essential if we are to capitalise on the knowledge accrued through molecular approaches and to translate it into a sound understanding of the roles of genes and their products, and the interplay with environmental factors, in regulating physiological/pathophysiological processes across the life-span of the organism.
7. We question the practicality behind expecting those skilled in the engineering and physical sciences to 'study biology'. Whilst it is highly desirable for these

individuals to have a greater understanding of many aspects of biology, obtaining a further qualification or degree seems unnecessary and unrealistic.

8. We are disappointed that no mention is made of support for long-term monitoring studies which are an integral part of generating the 'big data' that BBSRC is striving to exploit. We hope this will receive the attention it deserves in the full strategic plan.
9. The plethora of initiatives aimed at strengthening the development of wider skills amongst scientists dilutes their impact somewhat. We are concerned too about the time and resource needed to implement the initiatives proposed: leadership programmes; time away from the lab in industry or elsewhere; the Vitae programme etc. Is it realistic to expect supervisors to give their time to this while publication record remains the main metric used to assess their performance? Similarly, can post-doctoral researchers wishing to remain in academia be compelled to take time away from their research to attend these courses and training events? Fewer, more focussed schemes are needed here.
10. Much of the content of page 16, "*supporting our scientists*", concerns preparing PhD students for a career not in academia but in other fields, including industry and business. The chart on this page illustrates that more than half of BBSRC funded PhD students go on to work in non-academic roles and careers. An additional 6% of PhD's are unemployed post-PhD. Clearly a PhD is an excellent qualification for many jobs outside academia, and preparation for and advice about such careers is important. However, we feel that there may be too much emphasis in the document on preparing students for a career outside the lab. BBSRC training should be designed to equip and support students for academic life while also providing for wider skills development.
11. No mention is made in the document of support for technicians. There is a particular need for graduate and post-graduate level training and education for laboratory animal science technologists and *in vivo* technicians as, apart from the IAT Higher Certificate in Animal Technology, there is currently no HE provision accessible to those individuals employed in this sector. BBSRC should work with IAT to identify ways of supporting training and Continuing Professional Development in this area.

Recognising and rewarding research impact

12. The issue of defining 'impact' in the context of the consultation is a key one. On p20 of the document, the BBSRC recognises the range of impacts which bioscience research can generate: "*The benefits are many, ranging from recognition by government and users of research of the benefits of supporting bioscience research, through to fostering public excitement about science.*" However, on p23, the proposed evaluation of 'impact' is "*a series of economic impact case studies, published as short monographs.*" Here the BBSRC clearly see impact in terms of economic impact. This is not appropriate as a measure of the 'excellence with impact' of all research proposals and projects. The BBSRC must define impact more clearly and must generate meaningful ways of measuring

and communicating these impacts, appropriate across the breadth of science which the BBSRC funds.

13. We disagree with the statement on p18; that “*Research and training conducted collaboratively with business has greater relevance and is more likely to generate impact*”. We are not aware of evidence to support this assertion, and none is provided. Taken alongside the limited attention paid to responsive mode funding in the document, we are concerned that this statement indicates an intention on the part of BBSRC to prioritise the funding of research programmes dominated by business-led initiatives. We agree that the BBSRC should fund research with ‘impact’ of whatever kind, but blue-skies, fundamental research funded under responsive mode calls, may lead in time to tremendous impacts without any business involvement in the initial stages and is a long term investment in the UK’s future, as proven by the past.
14. The Research Excellence Framework (REF) may offer a mechanism for universities to recognise impact in terms of citations and also, as recently confirmed by Lord Drayson, in terms of public engagement with science. BBSRC could work with HEFCE to flesh out the details of how a researcher’s contribution to public engagement could be measured, and we also encourage the BBSRC to press for engagement with policy-makers to be recognised in the REF.

Partnerships

15. Learned Societies offer a conduit to the scientific community and can play an important role as translators of research or ‘knowledge brokers’. We encourage the BBSRC to engage with us as the strategy develops further.

Contact

We should be happy to provide additional information to the BBSRC. Any queries regarding this response should in the first instance be addressed to Dr Caroline Wallace, Policy Coordinator, Biosciences Federation, c/o 9 Red Lion Court, London EC4A 3EF email: cwallace.bsf@physoc.org.

Taskforce Members

This response was written by a BSF Task Force comprising Mr K Applebee (Institute of Animal Technology), Dr L Bellingan (Institute of Biology), Mr T Brigstocke (Institute of Biology), Prof J Buckingham (Imperial College), Ms C Margerison (British Ecological Society), Dr J Robinson (University of Nottingham), and Dr C Wallace (Biosciences Federation).

Appendix

Member Societies of the Biosciences Federation

Association for the Study of Animal Behaviour	Experimental Psychology Society
Association of the British Pharmaceutical Industry	Genetics Society
AstraZeneca	Heads of University Biological Sciences
Biochemical Society	Heads of University Centres for Biomedical Science
Bioscience Network	Institute of Animal Technology
British Andrology Society	Institute of Biology
British Association for Psychopharmacology	Institute of Horticulture
British Biophysical Society	Laboratory Animal Science Association
British Ecological Society	Linnean Society
British Lichen Society	Nutrition Society
British Mycological Society	Physiological Society
British Neuroscience Association	Royal Microscopical Society
British Pharmacological Society	Royal Society of Chemistry
British Phycological Society	Society for Applied Microbiology
British Society of Animal Science	Society for Endocrinology
British Society for Developmental Biology	Society for Experimental Biology
British Society for Immunology	Society for General Microbiology
British Society for Matrix Biology	Society for Reproduction and Fertility
British Society for Medical Mycology	Syngenta
British Society for Neuroendocrinology	Universities Bioscience Managers Association
British Society for Plant Pathology	UK Environmental Mutagen Society
British Society for Proteome Research	Zoological Society of London
British Toxicology Society	

Associate Member Societies

Association of Medical Research Charities	Merck, Sharp & Dohme
BioIndustry Association	Pfizer
Biotechnology & Biological Sciences Research Council	Royal Society
GlaxoSmithKline	Wellcome Trust
	Medical Research Council

Additional Societies represented by the Institute of Biology

Anatomical Society of Great Britain & Ireland	British Society for Research on Ageing
Association for Radiation Research	British Society of Soil Science
Association of Applied Biologists	Fisheries Society of the British Isles
Association of Clinical Microbiologists	Freshwater Biological Association
Association for Veterinary Teaching and Research Work	Galton Institute
British Association for Cancer Research	International Biometric Society
British Association for Lung Research	Marine Biological Association of the UK
British Crop Production Council	Royal Entomological Society
British Microcirculation Society	Scottish Association for Marine Science
British Society for Ecological Medicine	Society of Cosmetic Scientists
	Society of Pharmaceutical Medicine

Additional Societies represented by the Linnean Society

Botanical Society of the British Isles	Systematics Association
--	-------------------------