

# BIOSCIENCES FEDERATION

## **Review of Science in the Department of Health**

### **A response to the Government Office of Science**

October 2007

#### ***About the Biosciences Federation***

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 44 member organisations (plus six associate members), including the Institute of Biology which represents 39 additional affiliated societies (see Appendix). 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. The Biosciences Federation is a registered charity (no. 1103894).

#### **1. Develop a clear, overall science strategy**

The BSF strongly supports the objective that Departments should publish their science and innovation strategies. However it is important that Departments also consider carefully the intended readers and users of their published strategies. The BSF hold the view that all major stakeholders should understand, and relate to, the position taken by the Department. For the Department of Health (DoH) these stakeholders range from Government to Clinicians, from other Funders to the Scientific Community and from Patients to Health Authorities.

The current overall science strategy of the DoH fails to reach out to significant groups of these stakeholders. It is difficult to evaluate the useful information that Patients may obtain from the published strategy but it is clear that it is unhelpful to research workers - both clinical and non-clinical. The BSF notes the lack of focus and lack of headline priorities. The science strategy fails to indicate how the well known major health questions of today are to be answered in partnership with other significant Funders, for example the Medical Research Council, the Wellcome Trust or Cancer Research UK.

The BSF asserts that effective and coherent partnerships must be an essential component of the Science Policy in the DoH. Furthermore, because research in Medicine and Health is fast moving, partnerships and strategies will require agile management.

The BSF holds firmly to the view that the authorship of the science strategy should be much more transparent. Members have little understanding of how the DoH science strategy was reached, who was involved, and where useful inputs could have been made. Confidence in the output requires transparency of process.

## **2. Horizon scanning**

Members of the BSF Taskforce could not identify sufficient examples of effective Horizon Scanning in the DoH to come to any view other than the performance in this area is poor. In making this statement the BSF acknowledges that effective Horizon Scanning is notoriously difficult and that keenly supported new ideas are sometimes less significant than expected when they come to maturity. Again, there needs to be transparency of process and an expectation that some of the outputs will be clearly visible as a priority in the research strategy.

## **3. Review and harness existing science and identify gaps and opportunities**

This area links strongly with 1 and 2 above. The BSF does not consider it to be creditable to develop a science strategy without clear understanding of strengths and weaknesses and threats and opportunities. For the DoH all of these should be considered in the context of identified need. The BSF is not convinced that this currently occurs. Indeed, the BSF is not convinced that satisfactory science audits occur in the DoH on a regular basis.

However the BSF acknowledges that there are important changes taking place in the DoH and generally supports the direction that these are taking. In particular, we welcome the movement of research funds away from Health Authorities to NIHR. We hope that NIHR will have a catalytic role in the elimination of the criticisms mentioned above without creating a bureaucracy that makes it impossible for excellent small projects to be approved and completed within the time available for trainee staff.

But other organisations will have an important role in the identification of gaps and opportunities. For example, NICE is currently focussing on important knowledge gaps relevant for the treatment of diabetes. Where will the NICE proposals be reviewed? How will the work be funded? Where and how will it be considered as a possible DoH priority? Why are NICE recommendations perceived to be reviewed by appeal from pressure groups rather than in formal scientific debate? One can ask similar questions for other organisations, for example the FSA. Again, the BSF asks for a process that is transparent to all stakeholders.

## **4/5. Commission and manage new science/Ensure the quality and relevance of the science**

We reiterate in this section our support for NIHR: there is good positive feedback amongst stakeholders for its role. We understand that NHS staff are pleased that they can submit good research proposals, important for the NHS, to NIHR. We also wish to note that we strongly support the creation of OSCHR and the Translational Medicine Board.

The BSF has a major concern about the cultural base on which research projects are built in clinical medicine and how the output from non-clinical research is interpreted by NHS staff. Too much clinical research is still undertaken to bolster the *cv* of the trainee, rather than from a wish to find answers to questions.

Our concern arises from the decline in teaching basic science in medical schools and the associated decline in exposure to the culture of undertaking “high quality internationally competitive research” and what these words really mean. This loss of training and knowledge weakens the capacity of clinical NHS staff to respond to, or participate in, the cutting edge research that the DoH requires. The BSF does not argue for a return to the previous manner of medical education. But we do urge that the time available for basic science be used more effectively to try to address these problems. In order for this to be achieved, the BSF proposes that a high level working group be established to consider the benefits and content of a core science curriculum for all medical schools. Member Organisations of the BSF are already working towards this important goal.

On a different level, the BSF is also concerned about a perceived threat to “own account” research. Of course, the BSF does not encourage dilettante activities or taking a hobby to the laboratory. But when “own account” means not approved by the peer review process, it includes pilot experiments undertaken on grants but not specified within the original grant application. This is often the only way to conduct a pilot experiment and is a standard behaviour for the vast majority of successful laboratories. Care is needed to ensure that any bureaucracy in place to handle “own account” research does not have this potentially very negative impact upon successful groups.

## **6. Use science and scientific advice**

The BSF agrees entirely with the statement that “there needs to be an effective bridge between the experts and the policy makers”. However for this to happen some of the policy makers must have an understanding of the scientific method. They do not have to be “experts” but they do need to understand the language and should preferably hold a science degree in a related area. At the same time, the BSF acknowledges that it is equally important for the experts to understand the political process.

The BSF is concerned about science-related policy constructed in the absence of scientific evidence. We accept that there are occasions when this might be necessary and accept that in the context of DoH responsibilities prudence may be sometimes be wise. However it must be widely understood that policy formulated without evidence is unreliable and that it should be modified as necessary when evidence becomes available. There are examples (for example, with respect to food additives) where this does not seem to occur.

## **7. Publish results and debate their findings and implications**

An agreement on intention to publish should be explicit in all research contracts. This is necessary because in some areas individuals fail to recognise that their research is publishable. By contrast, clinical trainees have an imperative to publish almost at any cost – even though the publication itself may not contribute much to knowledge.

The BSF observes that the DoH does not have a clear policy statement on publication.

## **8. Share, transfer and manage knowledge**

The BSF is not certain that the DoH has robust procedures for the timely dissemination of “best practice” and has anecdotal evidence to the contrary. From the outside, it is very unclear what routes for knowledge transfer the DoH utilises.

The work of the Health Technology Agency does seem to have improved the landscape and is welcomed.

## **9. Implement Guidelines 2005 and Code of Practice for Scientific Advisory Committees**

The BSF does not have specific comments to make in this section.

## **10. Use, maintain and develop scientific expertise.**

The BSF is very anxious about the low level of relevant basic science taught in medical schools and calls for urgent action to be taken to address this deficit (see 4/5 above).

The BSF notes that all Consultants are effectively equal and independent. This may make the creation of critical mass for an effective research team more difficult than desirable. In this context, the leadership in NHS hospital departments is critically important.

The BSF observes that many hospitals do not encourage Consultants to undertake research.

### ***Contact***

Should the Government Office of Science have any queries regarding this response then they should in the first instance address them to Dr Richard Dyer, Chief Executive, Biosciences Federation, PO Box 502, Cambridge CB1 0AL email: [rdyer.bsf@physoc.org](mailto:rdyer.bsf@physoc.org)

### ***Taskforce Members***

This response was written by a BSF Task Force comprising Dr R Dyer (BSF; Chair), Professor H.S Chowdrey (Westminster); Dr J Nagy (Imperial); Dr E. Bell (Physiological Society); Dr P Bell (Royal Society of Chemistry); Dr C. McCabe (Birmingham); Professor Gary Frost (Surrey); Mr B. Livingstone (Linnaen Society); Dr M Fielder (Kingston) and Professor S. Jackson (Kings).

## Appendix

### Member Societies of the Biosciences Federation

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

### Associate Member Societies

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BioIndustry Association	Biotechnology & Biological Sciences Research Council
Royal Society	Association of Medical Research Charities
Wellcome Trust	Merck Sharp & Dome
Medical Research Council	

### Additional Societies represented by the Institute of Biology

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Anatomical Society of Great Britain & Ireland	Institute of Trichologists
Association for Radiation Research	International Association for Plant Tissue Culture & Biotechnology
Association of Applied Biologists	International Biodeterioration and Biodegradation Society
Association of Clinical Embryologists	International Biometric Society
Association of Clinical Microbiologists	International Society for Applied Ethology
Association of Veterinary Teachers and Research Workers	Marine Biological Association of the UK
British Association for Cancer Research	Primate Society of Great Britain
British Association for Lung Research	PSI - Statisticians in the Pharmaceutical Industry
British Association for Tissue Banking	Royal Entomological Society
British Crop Production Council	Royal Zoological Society of Scotland
British Inflammation Research Association	Scottish Association for Marine Science
British Marine Life Study Society	Society for Anaerobic Microbiology
British Microcirculation Society	Society for Low Temperature Biology
British Society for Ecological Medicine	Society for the Study of Human Biology
British Society for Parasitology	Society of Academic & Research Surgery
British Society for Research on Ageing	Society of Cosmetic Scientists
British Society of Soil Science	Society of Pharmaceutical Medicine
Fisheries Society of the British Isles	UK Registry of Canine Behaviourists
Freshwater Biological Association	Universities Federation for Animal Welfare
Galton Institute	

**Additional Societies represented by the Linnean Society**

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Botanical Society of the British Isles

Systematics Association