BIOSCIENCES FEDERATION

Putting science and engineering at the heart of government policy

A supplementary response to Innovation, Universities, Science and Skills Committee

April 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 14,000 individual members and represents 37 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.

Has the time come – as part of a clear economic strategy – to make choices about the balance of investment in science and innovation to favour those areas in which the UK has a clear competitive advantage?

i. To a large extent UK research funders already prioritise part of their research investment portfolio. Furthermore, most of the scientific community accepts that taxpayers should expect to see an upside from their investment in research. This is really question about how much further the UK should proceed in the direction of prioritising research activity at the expense of response mode "bottom up" funding.

What form a debate or consultation about the question should take and who should lead it?

ii. This will rapidly evolve into an argument for additional funding in areas where the exponents will claim that much opportunity will be lost without further focussed investment. The potential conflicts of interest are large and have to be avoided if the community is to retain faith in the integrity of the decision making.

iii. We consider that there should be an international dimension to the consultation – preferably with input from a significant overarching organisation. The Japanese Society for the Promotion of Science, the US National Science Foundation and the European Science Foundation are all examples where useful input about the accuracy of claims made within the UK could be checked.

iv. In addition, balanced input could be obtained from UK Learned Societies and organisations like HUBS (Heads of University Biological Science Departments). Yes, they will have vested interests, but they are in a good position to make priorities within their limited interests.

v. The consultation should be as wide, open and transparent as possible. If this is achieved, who leads it is less important.

vi. Finally, we believe that directed (prioritised) research has been undertaken for sufficient time for a good quantitative case to be made for or against the proposition. Is there any evidence to suggest that, in biology at least, that directed research gives better dividends (£ for £) than response mode? If there is, we haven't seen it: if there isn't, it should be sought.

Whether such a policy is desirable or necessary;

vii. It may be essential in order to maintain good funding levels but whether it is desirable depends entirely on the consequences.

What the potential implications of such a policy are for UK science and engineering, higher education, industry and the economy as a whole;

viii. The BSF and IoB believe strongly that if we only focus on what we think we are good at today, we will be good at very little tomorrow. The future health of our science base requires that response mode funding is always sufficient to nurture the most able.

ix. Furthermore, the UK is already in a position where prioritisation and the rewards for obtaining big grants, has led to a loss of capacity in key subjects. Examples include toxicology, fresh water biology and taxonomy; in the latter case we will soon be relying on gifted amateurs to monitor climate change. Increasing the focus of research and innovation is likely to lead to a change of teaching focus in Universities and further damage subject areas that are below the radar but nonetheless critically important for the UK economy. And teaching, of course, refers to all levels but perhaps especially the postgraduate level because this is the source of most of the future experts.

x. Even if the foresight for prioritised investment is excellent, the upside to the economy will not appear without action all along the translation route. In particular, we are concerned that in the biosciences, where delivery timelines can be long, there remain significant funding gaps for early and mid stage companies.

And were such a policy pursued, which research sectors are most likely to benefit and which are most likely to lose?

xi. This obviously depends on the size of the sector but the 21st century is the age of biology and we have only just started to exploit the major discoveries of modern biology. However in many ways biology has changed and increasingly needs to interact with chemists, mathematicians, engineers and physicists. For biology to flourish and deliver its potential, the strength of other sciences is critical.

xii. The law of unintended consequences is always demonstrable.

Contact

We should be happy to provide additional information to the IUSS Committee. Any queries regarding this response should in the first instance be addressed to Dr Caroline Wallace, Policy Coordinator, Biosciences Federation, 3rd Floor, Peer House, 8-14 Verulam Street, London WC1X 8LZ email: cwallace.bsf@physoc.org.

Appendix

Member Societies of the Biosciences Federation

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

Associate Member Societies

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

Additional Societies represented by the Institute of Biology

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

Universities Federation for Animal Welfare

Additional Societies represented by the Linnean Society

Botanical Society of the British Isles

Systematics Association