The Association of the
British Pharmaceutical Industry

POSITION PAPER

Subject: **CONSULTATION ON THE RESEARCH ASSESSMENT EXERCISE BY THE UK FUNDING COUNCILS (LED BY HEFCE)**

Date: 20 March 2003

INTRODUCTION

The pharmaceutical sector is the leading industrial funder of the research base in the UK. In 2002 pharmaceutical companies are expected to spend over £70 million in discovery research with academic institutions (excluding contract research). The UK science and engineering base, as a source of skills, new knowledge and ideas, remains a key factor in attracting R&D investment.

As a whole, the pharmaceutical industry is expected to invest £3.3 billion within the UK in 2002 (>£8 million a day). Of this, in 2000, 27.2% of the investment was targeted at discovery research – which encompasses research into disease, target and lead identification, optimisation and proof of concept.

SUMMARY

The ABPI believes that:

- In future allocation of research funds through the block grant should be algorithm based and assess research income from the Research Councils, charities, industry and Government.
- Qualifying income should be high quality science that is assessed through a rigorous peer review process – usually with some form of international representation such as with the Research Councils.
- Funding should be allocated via an algorithm that assesses income over a three-year rolling window and that allows recognition of the costs if different research disciplines.
- A fund to allow emerging research teams and departments (i.e. previous research development grants) should be available on a competitive basis and developed in conjunction with the Research Councils to reflect UK priorities.

KEY POINTS

The UK's share of global pharmaceutical R&D spend has remained steady at 9% over the last ten years. One of the reasons for the historical success of the UK has been the strength of the science base. However while this strength is important, it is only one factor in determining where companies invest.

In terms of the research base therefore, the success of the UK in attracting and retaining pharmaceutical investment depends upon:

- access to skills – from high quality research scientists in a broad range of disciplines to technical and engineering skills to support manufacturing; and
- access to underpinning knowledge and research that supports our understanding of disease.

The supply of skills and knowledge must be placed on a sustainable footing.

In considering if and what the role of research assessment should be in the future it is essential to place this within the broader context of Government funding of the science base and its science, technology and innovation strategy. The recent technology and innovation strategy[1] published in July 2002 and the final report of the cross-cutting review of the science base[2] both highlighted the need for clearly defined objectives for the block grant (QR) funding.

While the ABPI, which represents an industry that is a significant and often unrecognised funder of the public sector science base, supports the objectives of long-term sustainability, it is essential that collaborative[3] research is recognised as a true partnership that takes accounts of all contributions from partners, be they intellectual, financial or other indirect resource.

This means that the focus in such collaborations should not be on IP ownership, but on maximising opportunities (both intellectual and commercial) and equitable returns to partners that reflect the intellectual and financial input and the risk involved in taking an idea through to market. It is essential that the partner who protects IP during any collaboration understands the global market in which the innovation is to be applied, has significant experience in filing, protecting and enforcing patents and copyrights and who is best placed to exploit the knowledge and arising market opportunities. Clearly both partners should benefit and when the pharmaceutical industry is assigned ownership of arising IP in collaborative partnerships appropriate milestone, reward and royalty payments are usually included as part of the agreement.

Because of these points, care must be taken on using IP retention in universities as a marker for qualifying income for Funding Council streams to support research. Rather this should be defined by

Currently we estimate that there are in excess of 750 university postgraduate students carrying out their research in industry research laboratories either full or part-time. In addition there are in excess of 525 collaborative research projects, many of which include funding and hosting of postdoctoral researchers. This represents a significant effort, not just in terms of direct costs, but also in terms of indirect overhead costs. Over recent years

[1] *Investing in Innovation: a strategy for science, engineering and technology,* HM Treasury July 2002
[2] *Cross-cutting Review of Science and Research: Final Report* March 2002
[3] Collaborative research occurs where both or all parties contribute intellectually and share benefits from any arising new knowledge

the number of academics and university research scientists seeking placements in industry has grown considerably.

The Research Assessment Exercise when established in 1986 was a real driver for universities to focus their research strategies. Originally it applied to around 47 universities before the binary divide was abolished. In 2001, 173 institutions were assessed in RAE 2001.

The key points to remember on the current RAE:

- There are significant resources applied directly and indirectly to the RAE. In the latest RAE 173 institutions made 2,598 submissions in 68 Units of Assessment covering 48,072 research active staff (excluding category 'C' staff who are independent researchers within institutions).
- HEFCE estimated that around 250,000 separate research articles were submitted during the process, which all had to be taken into account in the assessment process.
- Many Panels cover more than one subject – for example the Biological Sciences Panel had 20 members who had to cover: "*the molecular, cellular, organismal and population biology of micro-organisms, plants and animals, including biochemistry and biotechnology*" – a huge range of disciplines[4].
- In total, excluding background preparation and the efforts within Universities, the time taken for formal Panel meetings amounted to well over 20 man years of time for the 2001 review[5]. Visits and background reading and preparation were in addition to this time.

The ABPI therefore welcomes the review of research assessment – we believe that research reviews must be focused on delivering long-term sustainability in the research base and support high quality research and research training. The Research Assessment Exercise should be replaced with a system that must be integrated with universities and institutions strategic objectives. Rather than having an intermittent large scale review, a light-touch metrics based approach is required.

WHAT SHOULD/COULD AN ASSESSMENT OF THE RESEARCH BASE BE USED FOR?

The assessment of the research base should be used to inform allocation of block grant funds to:

- sustain research infrastructure and provide opportunities to develop new and emerging areas of science;
- fund new blood research scientists and support established researchers;
- support the development of high level research training capabilities; and

[4] http://www.hero.ac.uk/rae/PMembers/panel14.htm
[5] Estimate calculated from original HEFCE projections of scheduled main UoA Panel meetings, number of members and estimate of time allocated.

- allow funding of innovative research – that is more speculative and emerging areas where results or outcomes are by no means guaranteed.

Universities and institutions must be able to use these funds flexibly to support their research and research training objectives.

A SIMPLIFIED, ROLLING MODEL FOR RESEARCH FUNDING ALLOCATION WITH REGULAR REPORTING AND AUDITING

Any evaluation must provide an effective peer review mechanism or be based on metrics that are predicated on such a process. Most of the Research Councils have colleges of reviewers comprising 300 leading academics and relevant industrialists. A proportion of these are from overseas. Reviews are usually founded on: past research performance; the ability to deliver; excellence and relevance (the latter depending upon the particular call for proposals); past publications record; and a review by at least 3 individuals from the college.

Following the 1996 RAE, the then Chief Executive of the Engineering and Physical Sciences Research Council (EPSRC), Dr Richard Brooke, carried out a number of analyses, comparing allocation of the block grant through the RAE and hypothetically as a direct proportion of income received from the research councils. The comparison focused on chemistry and maths at one leading research university and another ex-polytechnic to illustrate alternative funding regimes. This research indicated that the differences between the two routes would be percentage points.

Further analysis of the 1996 RAE indicate, that for chemistry at least, RAE rating is directly related to the number of research proposals submitted and the success of those proposals (Figure 1 at end).

These results clearly indicate that more direct metrics can lead to an almost identical result to more complex and resource intensive review mechanisms. This perhaps is unsurprising as the research being judged in the RAE largely stems from research output previously peer reviewed by the Research Councils and other funding bodies.

The ABPI believes therefore, considering the recommendations in the Governments recent science strategy and cross-cutting review publications, that:

- Allocations should be based upon total research income (excluding contract research) – this would encompass income from Research Councils, Charities, industry and Government departments where shared cost research is included and peer review or assessment mechanisms are in place. Such figures are already collected by the Research and Funding Councils.
- The formula should reflect the relative cost of the research area – for example laboratory based research would require a higher gearing ratio than arts and humanities based research. Furthermore emerging or critical areas could receive higher gearings to kick-start investment
- To reduce the risk of large annual fluctuations, allocations should be based on three year rolling averages of research income – this would allow for troughs in income and

also allow new departments to build research capability over a number of years. Conversely, those whose research income has declined would lose income phased over a number of years.

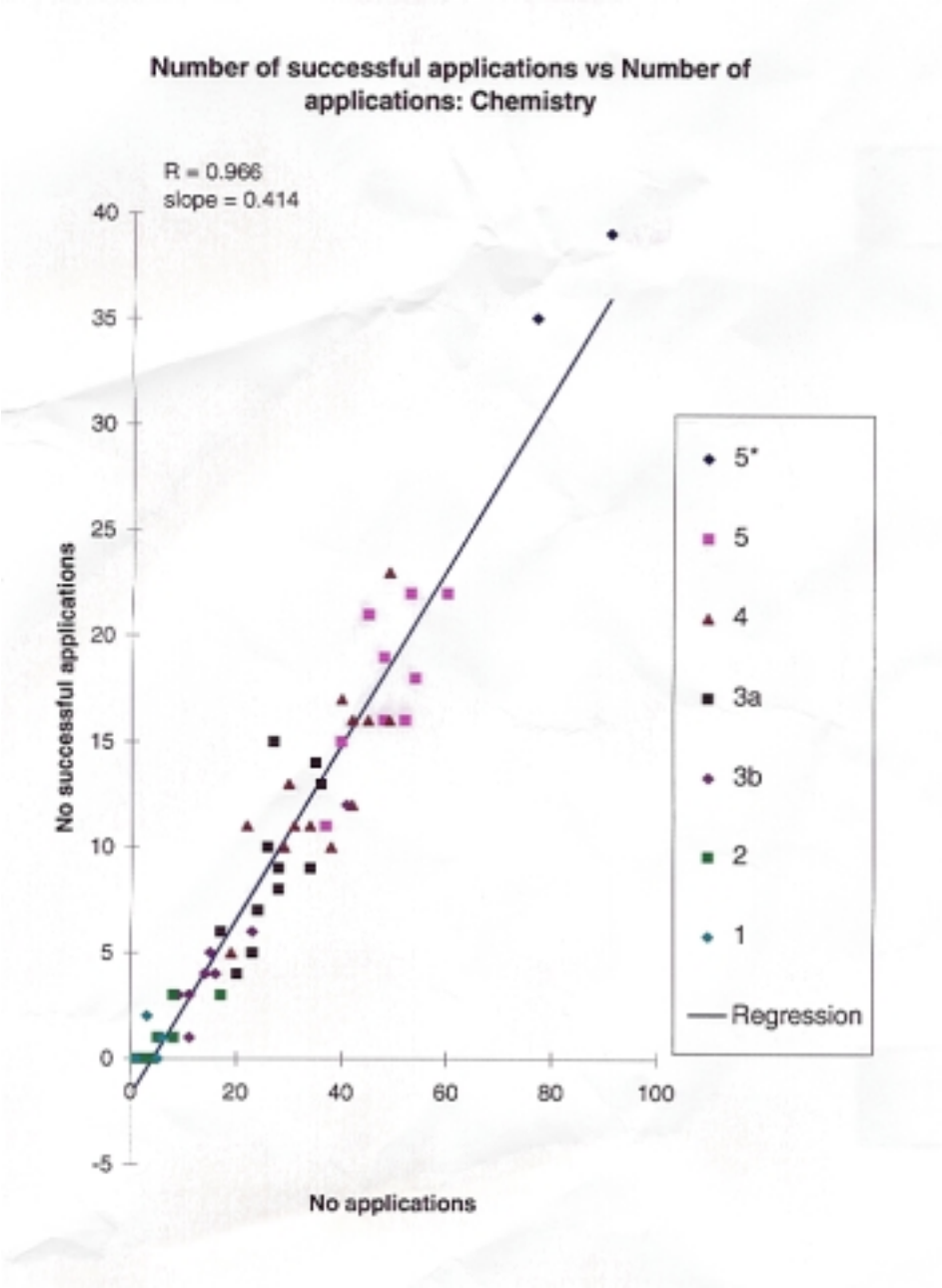
- Institutions should be allowed to utilise the funds according to their institutional and departmental strategy, including investing in infrastructure, support for new blood and existing researchers and for more speculative research ideas to facilitate innovation.
- An annual report should indicate how the funds are used and as with other areas, the Funding Councils should be able to carry out random audits. An independent review body could be established by the university or institution to advise upon the strategy and annual report.

Such an approach would allow universities to seek income to support high quality leading edge research, whether focusing on fundamental research, applied research of relevance to industry, or a mixture of both.

When developed the key principles of the assessment process and allocation of funds should be that the assessment process:

- is transparent;
- does not distract academics or over-burden them with bureaucracy;
- recognise and reward excellence, building upon existing peer review processes.

FIGURE 1


Number of successful applications vs Number of applications: Chemistry
R = 0.966
slope = 0.414
No successful applications
No applications
40
35
30
25
20
15
10
5
0
-5
0
20
40
60
80
100
5*
5
4
3a
3b
2
1
Regression