

Draft Submission to Lambert Review of Business-University Collaboration

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Consultation Question 1

Research Collaboration

The Royal Veterinary College has very active collaborations and relationships of various kinds with both small and large businesses:

There are numerous conventional research collaborations between the academic staff of RVC and R&D of both animal health and human pharmaceutical and healthcare companies. Specific examples include studies focussed on:

- Development on a novel prosthetic intervertebral disc nucleus
- Research into blood vessel pharmacology
- Pharmacokinetic/pharmacodynamic modelling for antimicrobial drugs
- BVDV marker vaccine development
- Improving reproductive efficiency in pigs

Such studies have advantages to both partners – the company gains access to specialist expertise and resources; the academic partner gains resource to undertake projects of research interest leading to publications advancing scientific understanding.

Contract Research

In addition, RVC undertakes a number of contract research projects utilising the facilities of the College, of lesser scientific interest. Examples include:

- Testing of parasite control agents
- Clearance time of agents given to food animals
- Animal feed testing

This activity helps finance the maintenance of the facilities for internal research use. The Royal Veterinary College maintains resources for its necessary for its research and teaching that are specialised and expensive, but these can provide particular value when needed by companies that cannot readily access them elsewhere.

Consultancy

The specialist expertise of individual research staff at RVC is sought by companies again in the animal health and human medicine sectors. Consultancy is often a good route to more extensive collaboration. Companies may feel they can establish if an academic researcher is dependable e.g. to produce reports according to deadlines, this way, before they outsource a project to a university.

Work Experience for Students

Royal Veterinary College is extremely active in managing work experience for students – all UK veterinary undergraduates are required by the Royal College of

Veterinary Surgeons (RCVS) to undertake part of their training in extra mural studies, not only to provide a substantial proportion of their hands-on practical experience, but to train them in the human aspects of business management, communication skills, client relationships etc. The nature of the veterinary profession means that the majority of students work in a range of veterinary practices that are SMEs. RVC, through its Veterinary Business Liaison Unit (supported by HEROBC funding) co-ordinates student placement for all the English veterinary schools.

Professional Training and CPD

RVC, through the VBLU and the College's E-Media Unit, is also active in developing support for 'Professional Training Phase' (this is a pilot scheme intended to record and monitor skills of new veterinarians in practice after graduation, to ensure professional competency); and for continuing professional development. CPD has been delivered conventionally through seminars and courses, and more recently through CD-ROMs in veterinary specialisms, but is now also being developed for delivery via interactive on-line courses, in which study groups are led by recognised experts as 'e-moderators', but also discuss and share experience and cases peer-to-peer, over a period of several weeks.

RVC academic staff are also in high demand as speakers at conferences and other CPD events organised by veterinary special interest societies and commercial organisations.

Commercialisation from the Research Base

RVC has used HEIF funding to establish activity in intellectual property management and exploitation. Hence, this is a relatively new activity, but has helped in the creation of two spin-out companies so far: one focussed on human therapeutic vaccines for infectious disease, and one developing an equine tendon treatment approach. Several licensing opportunities around patent-protected intellectual property are also being pursued.

Establishing Relationships

To date, there has been no involvement of our regional development agencies or Sector Skills Council in these activities, which are mostly nationally or internationally, rather than regionally significant.

Consultation Question 2

Increasing commercial interactions

The majority of interactions arise from personal contact between academic and industrial research staff at scientific conferences. We are keen to seek new ways to stimulate more than this serendipitous development of research links, and are targeting and visiting appropriate companies to explore how we can interest them in new interactions.

Government Funding issues

Funding initiatives such as HEROBC, HEIF, (see above), UCSF and SEC have been extremely helpful in establishing new business-university interactions. However, the

short-term nature of such funding is a major barrier to creation of sustainable activity:-

It creates difficulty in recruiting and retaining high-calibre staff.

It can create a need to produce unrealistic plans for units involved in third mission activities to be profit-generating within a very short time scale, which may also skew the activities of such units away from optimal support for the main mission of their university.

A particular problem of UCSF funding in the life-sciences sector, is its limit of seed investment £250,000. This is rarely sufficient to enable development of a bioscience business to a stage at which it is attractive to external investors – creating the need to find additional finance to syndicate with the UCSF funding. As the point of UCSF was to support development before other finance sources might be interested, attracting finance at this stage is extremely difficult. This leads to damaging delay or complete loss of the window of opportunity for commercial development of some promising business ideas.

Technology Transfer and Intellectual Property

Technology transfer is becoming more effective with support for dedicated staff to undertake this role, and with increasing experience and – most recently – specific training available for these individuals. The understanding and interest level across the academic research base relating to commercial development of intellectual assets remains extremely variable, but visible support from the highest level of the university's management is a critical factor in establishing an effective technology transfer activity.

Consultation Question 3

As a dedicated veterinary school, some of these questions are not directly relevant. The RVC sends a questionnaire to recent graduates approximately a year after graduation, asking them to comment on the relevance of their course to their current role.

The Royal College of Veterinary Surgeons as the 'industry body' of the veterinary profession plays a role in commenting on, updating and assessing the teaching curriculum to ensure its relevance to current practice, and formally approves the Bachelor of Veterinary Medicine degree as the qualification to permit veterinarians to practice. RCVS commissions regular manpower surveys of the profession, to evaluate trends in the supply and demand for veterinary surgeons.

Consultation Question 4

Commercial Financial and Contract Issues

Whilst it is generally possible to price contract projects realistically, where companies are aware that the projects they wish to undertake are of research interest to their academic partners, it remains extremely difficult to settle financial terms to the collaboration agreement that reflect the costs of the academic partner.

Companies will frequently insist on ownership of results to projects to which they contribute a fraction of the costs.

Academic staff will agree to such terms because of their desperation for funding to undertake the research – there being few alternative sources of funding - and frequently because of lack of awareness or concern over commercial issues.

Until recently, with the introduction of a template CASE studentship agreement by the Russell Group and agreed by GSK, intellectual property rights demanded in studentship agreements were vastly disproportionate for the funding provided. Another common demand is for a free licence background intellectual property in order to commercialise IP arising from a sponsored project.

The difficulties of determining real costs including appropriate overheads, for undertaking commercial projects, within the complex financial structure of a university is a hindrance in presenting justifiable figures to a potential commercial partner.

The College has not experienced any apparent change in demand for research collaboration or contract projects since the introduction of R&D tax credits.

Commercialisation of University Technologies

The requirement to publish means that technology must be patent-protected at a very early stage. The cost of patent protection requires (most) universities to find a licensee (or finance through spin-out creation) as soon as possible, hence before the technology is developed or supported by strong data. Even if patent costs can be covered over several years, academic funding sources will rarely support work viewed as heading towards product development. As it is frequently impossible to interest industry or financiers in technologies at this early and unproven stage, patents are abandoned, the sunk costs wasted, and the potential commercial value lost.

The low research-investment-per-company-created in the UK when compared with US universities is cited as a success and indicator of our efficiency. In reality it may show the weak foundations on which we are trying to build new businesses.

Possible ways to address this problem could be through changes in the patenting system (a longer period before major/international costs?); changes in academic and research charity funding; and/or new incentives for investment in research.

Proof of Concept Funding

Funding of the order of £5,000 to £50,000, made available as grants rather than investments, are an extremely valuable way of stimulating development of university spin-out companies, as has been shown by the Mercia Spinner project (HEIF with strong RDA involvement). Extension of funding of this type to more universities would assist with the commercialisation issues outlined above.

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