

Streamlining University / Business Collaborative Research Negotiations

**An Independent Report to the “Funders’ Forum” of the
Department for Innovation Universities and Skills**

August 2007

FOREWORD FROM SIR KEITH O'NIONS

As chair of the Research Base Funders' Forum, I am very pleased that this report is to be published. Funders' Forum welcomes this examination of the negotiation of collaborative research contracts. Peter Saraga drew together a hugely experienced team from the academic and business communities and their views make a valuable contribution to an important subject.

Collaborative research undertaken between universities and business are an essential part of gaining broad economic benefits from the UK's world class research base.

The report finds that overall the system is working well, and notes the considerable progress made over recent years. However it points to a number of remaining weaknesses and offers practical recommendations for improvement. The Funders' Forum welcomed this report at its July meeting and recommended that it be made available for wider consideration.

On behalf of the Forum I would like to thank Peter Saraga and his group for their work over the past few months and their presentation of such a thoughtful and timely report.

Sir Keith O'Nions
Director General, Science and Innovation
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EXECUTIVE SUMMARY

Following a meeting of the Funders' Forum in January 2007, the Director General of Research Councils invited a group of senior business people and university leaders to look at the issue of negotiating collaborative research agreements between universities and companies. The Group was asked "What are the remaining obstacles to more streamlined negotiations between universities and businesses at the outset of research collaborations?"

The focus for the Group was to be those companies that fund significant amounts of research; it would not include commercialisation of fully publicly funded research, nor the wider issue of how to increase the demand for collaborative research from companies in the first place.

The Group has investigated the issue by collecting evidence from a range of businesses and universities. It has drawn its conclusions in the light of that evidence.

The overarching conclusion is that while in the main the system is working well, there are some important problems. Addressing these could improve collaborative research negotiations, increasing the number of successful deals and the speed with which they are made.

We made a number of more detailed conclusions, which can be summarised into 3 main themes:

1. **Overemphasis on IP.** It is important that adequate protection is made for Intellectual Property, but we feel that both universities and businesses are guilty on occasions of putting excessive emphasis on ensuring their own ideal outcome from the negotiation in relation to IP, when it is often not even the most important aspect of the research collaboration.
2. **Unclear messages.** There is still a lack of clarity over some important high level messages coming both from Government and public funders. For example, there is confusion as to whether the primary aim of collaborative research should be to generate income for universities or to create benefit for the wider economy; and it is not always clear what public research funders expect to see as an appropriate outcome in relation to IP.
3. **Need for good practice in negotiating process.** We have identified a number of aspects of good practice in the process of negotiations, such as understanding the motivations of the other party and having appropriate escalation procedures. Whilst some of these are commonly recognised practices that are self-evidently sensible, it is clear that they are often not followed.

The main report contains several recommendations, which are listed below, grouped by the organisations they address.

Government and Public Funders

1. Government should make a clear statement of policy that the primary objective of their support for university / business interaction is to improve the knowledge base and increase the economic impact of research, rather than generating extra funding for universities
2. Research Councils should ensure there is clear and well publicised guidance on the handling of IP in collaborative research which they co-sponsor – ideally this should be coordinated through RCUK to ensure consistency.
3. Likewise, other public funders of research such as Government Departments should give clear guidance on the purpose of their contribution to collaborative projects and expectations in relation to IP
4. Government and public funders should make a statement of clarification, reminding Universities that the advent of Full Economic Costing does not require them to charge 100% FEC on individual contracts with business – rather the price charged is their own strategic decision, so long as overall sustainability of research is appropriately factored in.

Universities

5. Senior management in each university should issue clear policy statements setting out their aims for collaborative research relationships with industry, so that there are clear messages to academic staff and those staff negotiating on their behalf. This should ideally be endorsed by the University's appropriate Governing body.
6. University senior management should encourage a balanced approach to IP negotiations, recognising the benefits of the business relationship and the relative improbability that any individual piece of IP will ultimately turn out to be a 'blockbuster'.
7. University senior management should check that their own internal targets and metrics do not inadvertently drive the wrong type of behaviour in negotiations on collaborative research
8. University senior management should ensure there is clarity over the balance between facilitator and gatekeeper roles for Research Contract Offices (including where the decision making lies).

Universities and Business

9. Both universities and businesses should review the approach their organisation takes on negotiations and consider whether it could be improved, in line with good practice. They should also ensure that there is sufficient senior management visibility of contracts, clear direction on desired outcomes, appropriate escalation procedures, and that decisions are taken at the right level, so that strategic considerations can be taken into account.

Business

10. Businesses should ensure that commercial officers, perhaps more used to the cut-and-thrust of supplier/customer negotiations, are attuned to the sensitivities of university research and the benefits of long-term research relationships.

Other

11. Knowledge transfer bodies such as AURIL, UNICO/PRAXIS and particularly IKT should consider what further role they could play in developing and promoting good practice to improve the quality of negotiations.

Section 1: Background to the work

Background

At a meeting of the Funders' Forum in January 2007, concern was expressed about problems, particularly over IP, that occur in negotiating collaborative research arrangements between universities and businesses. The issue had come up during the larger Funders' Forum plenary session in December and some members felt that this was a recurring issue that was worth further consideration. The minutes of the meeting state:

“The issue of the relationship between universities and business over IPR had been raised by a number of attendees at the Plenary. Members felt there might be benefit in looking further at whether some universities over-valued IPR, and could be incentivised to handle it better, not least to reduce delays in starting new business-university collaborations. The Chair agreed that a (think piece) paper on university IPR would be helpful”

Following this, the chairman of the forum, and Director General of Research Councils, Sir Keith O’Nions invited a number of senior figures from the university and business sectors to come together as an ad-hoc group to consider this issue, under the chairmanship of Peter Saraga, President of the Institute of Physics and chair of the HEFCE advisory group for Business and the Community. The membership of the Group is listed at Annex A.

To ensure the issue was properly covered, the Group was set a slightly broader question:

“What are the remaining obstacles¹ to more streamlined negotiations between universities and businesses at the outset of research collaborations?”

And we were asked to write a paper for the July meeting of the Funders' Forum which would cover:

- the current state of play (including an assessment of the extent to which negotiations are currently protracted)
- what works well
- what are the difficulties
- what mechanisms could help address those difficulties, and/or what further work might be needed

Scope

Given the limited time, it was important for the Group to have a tight focus. We were to look specifically at the negotiations in relation to research collaborations between

¹ The group reflected that the term ‘remaining’ may give the impression that if the current barriers are removed then all obstacles will have been cleared, when the reality may be that new barriers emerge – the Group has in practice considered the question of ‘ongoing’ barriers.

universities and business. That meant there were some things that were specifically not in scope:

- the Group was specifically not asked to cover the wider question of how to encourage more interest in / demand for collaborative research in the first place (which would stray into issues eg of how universities should market themselves and how to stimulate the ‘demand-side’);
- and we were not asked to cover negotiations over intellectual property that has arisen from wholly publicly funded research (‘classic commercialisation’ through licensing and spinouts).

Furthermore, we were asked to focus particularly on companies that fund significant amounts of research – in practice this tends to mean larger companies, rather than SMEs, and the companies we interviewed to gather evidence reflect this. Similarly, most discussions focused on bilateral rather than multilateral collaborations.

Although we have deliberately kept focused, we believe, some of the findings and recommendations may still have wider application.

Methodology

The group was tasked with gathering evidence from a variety of sources, including a range of universities and businesses that engage in significant amounts of collaborative research.

A key aim of the Group has been to go beyond anecdotal and generalised complaints that one side or the other is driving too hard a bargain, and to ask for specific examples of negotiations that have been problematic, and try to understand the causes of this.

The group arranged a number of evidence gathering sessions – face to face discussion meetings with the Group joined by several contributors per session. Contributors were asked to explain their experience of negotiations, giving specific examples, discuss possible obstacles to success and to suggest any practical improvements that could be made. To encourage a frank discussion, it was agreed that the evidence would be given on a non-attributable basis. In addition members of the Group took part in a smaller number of individual meetings or phone calls. A summary of the evidence collected in this manner is appended at Annex C

Prior Work / Other Recent Reviews

Collaborative research negotiations are by no means a new area of investigation. The original Lambert Review of University Business Collaboration from 2003 had a significant section devoted to this subject. It noted, for example:

- *“IP ownership is often strongly contested in these research collaborations, because the sponsors have different interests in the rights to exploit and use the IP”*
- *“Many universities and businesses say that disagreement over IP ownership is a major barrier to research collaborations”*

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- *“A number of businesses also comment that some universities overvalue their IP. This has stopped several businesses agreeing deals with universities”*

In addition, the Lambert Report recommended that template model agreements be established to facilitate negotiations. This recommendation was implemented, and the resulting agreements, known as the Lambert Model Agreements, have been used (on a voluntary basis) by a number of universities and firms.

To some extent it might have been thought that this area had if anything been over-investigated. However, given the ongoing concerns this seems not to be the case, and so we wanted to see why the concerns were still regularly raised – was this merely the remnants of an old complaint that was no longer relevant, or were there still problems despite earlier investigations.

Indeed, we found that this is a ‘hot topic’ in other countries as well. The European Commission’s recent Green Paper on the European Research Area noted that:

“European universities and other public research institutions should be given incentives to develop skills and resources to collaborate effectively with business and other stakeholders, both within and across borders. A major hindrance is the inconsistent, and often inadequate, rules and approaches for managing intellectual property rights (IPR) resulting from public funding.”²

And in the United States, a group of 12 large research universities came together to produce a set of core principle about technology licensing, concerned that some technology managers were coming under too much pressure to do a deal that was not in the public interest. Their resulting 9 principles are attached at Annex E - whilst these focus on commercialisation, the issues at hand are quite relevant.

² The European Research Area: New Perspectives, COM(2007) 161 final, 4/4/2007. IP issues are also covered in more detail the Commission staff document: Voluntary guidelines for universities and other research institutions to improve their links with industry across Europe’ COM(2007) 182 final

Section 2: Overall Findings

In the light of the evidence gathered, the Group's overarching conclusion is that while in the main the system is working well, there are some important problems. Addressing these could improve collaborative research negotiations, increasing the number of successful deals and the speed with which they are made.

There is clear evidence that collaborative research negotiations are sometimes overly protracted (with some cases taking 18 months) or ultimately fail for the 'wrong reasons' with the parties walking away when a reasonable outcome might have been possible. In many cases disputes over the handling of intellectual property were the key sticking point, but there were others, for example confidentiality or price. However the Group does not believe that the system is fundamentally broken. There are many examples of successfully concluded agreements, and it is important that any attempt to fix the problems does not adversely affect what is already working well - evolution not revolution should be the order of the day.

The next section contains a number of more detailed conclusions. Three themes that we wish to bring out are:

1. **Overemphasis on IP.** It is important that adequate protection is made for Intellectual Property, but we feel that both universities and businesses are guilty on occasions of putting excessive emphasis on ensuring their own ideal outcome from the negotiation in relation to IP, when it is often not even the most important aspect of the research collaboration.
2. **Unclear messages.** The evidence we gathered showed that there is still a lack of clarity over some important high level messages coming both from Government and public funders. For example, there is confusion as to whether the primary aim of collaborative research should be to generate income for universities or to create benefit for the wider economy; and it is not always clear what public research funders expect to see as an appropriate outcome in relation to IP.
3. **Need for good practice in negotiating process.** In gathering evidence, we have identified a number of aspects of good practice in the process of negotiations, such as understanding the motivations of the other party and having appropriate escalation procedures. Whilst some of these are commonly recognised practices that are self-evidently sensible, it is clear that they are often not followed.

The Group noted that there were important differences between sectors, for example in their approach to IP. For example a life sciences company may seek strong IP protection, while one from the creative industries may put greater emphasis on the transfer of skilled people. It is important that negotiators are sensitive to these differences and do not take a one size fits all approach. Wider training may help in this regard. Whilst the Group noted these important differences and have taken them into account, the conclusions we make are of a general nature.

As well as the conclusions, the Group has made a number of recommendations for ways to improve the problems we identified, which again are covered in detail in the following section.

A number of these recommendations revolve around University strategies for collaborative research with business, and the way they go about negotiating the contracts. Given that these recommendations interlink, **the Group believes that it would be beneficial for universities – particularly those with significant collaborative research activity – to review their strategies, policies and processes in relation to collaborative research in a holistic manner. Such reviews should report to senior management. The Group believes that the Government and public funders could have a leadership role in encouraging such reviews.**

Section 3: Detailed Conclusions and Recommendations

This section looks at the detailed conclusions and recommendations of the Group, which cover a range of different areas.

1) 'Overvaluing' IP
2) Messages from Government and Public Funders
3) Clear Institutional Strategy
4) Overestimate of scale of potential reward
5) Approach to negotiations
6) Benefits of strategic relationships
7) Research contract offices
8) Lambert agreements
9) Full Economic Costing
10) Impact of targets and metrics
11) Areas for further study

3.1) 'Overvaluing' IP

It is clearly important that Universities pay due attention to Intellectual Property. In recent years there has been increasing emphasis on the exploitation of the strong UK science base, and on encouraging Universities to properly protect and ultimately commercialise IP. Dedicated third stream funding has been used by universities to significantly increase the numbers of people working in commercialisation and research support offices.

The concerns over Universities 'overvaluing IP', which formed one of the triggers to this report, may partly be a testament to their increasing recognition of the importance of IP – and there was a view that Universities are perhaps 'victims of their own success' in this regard.

However, the question of valuation is an interesting one. Most people agreed just how difficult (if not impossible) it is to value IP at an early stage³. This is particularly the case if the IP has not even been created, and the parties cannot determine what sort of new IP is likely to result.

Nonetheless implicit valuations are often made in setting the price for the research, when the price depends on whether IP rights remain with the university or go to the company.

If that is the case, then what does 'overvaluation' mean? We feel that in some ways it is shorthand to reflect driving a 'hard bargain' in relation to IP. It is clear that universities can drive a hard bargain, but it is also clear that companies do likewise. The Group

³ There may be specific exceptions in relation to drug discovery / pharmaceutical companies.

does not feel it is in a position to argue that one side or the other should be systematically taking a softer position. However, there was some concern that both sides sometimes put excessive emphasis on IP within a negotiation (particularly when the potential value from IP is weighed up against the value of the research itself). So in that sense, IP can be seen as ‘over emphasised’ rather than ‘overvalued’.

3.2) Messages from Government and Public Funders

The Group found that there is ambiguity in the communication of high level messages from Government and public funders to the parties involved in research collaboration.

(A) Government expectations from knowledge transfer and collaborative research generally

There is no doubt that Government supports knowledge transfer, but the Group believes there is confusion within Universities and elsewhere, as to whether the Government’s intention is that knowledge transfer will:

- (i) generate net income for universities which thereby reduces the demand on the public purse; or
- (ii) maximise the exploitation of public research funding for the benefit of the UK economy (helping business, public services, policy makers)

The two are not strictly mutually exclusive (for example allowing universities to gain some revenue is likely to improve the incentives on them to engage in knowledge transfer, to the overall benefit of the economy), but they can pull in different directions. The question is, which is most important?

The Lambert Review of 2003 itself recognised this problem and stated that *“Many UK universities are still seeking large financial returns, which is unrealistic and is likely to reduce the broader benefits of their research. Public funding for technology transfer offices in universities is not intended to generate large new revenue streams and the US experience shows that it will rarely do so. Its main purpose is to enable universities to maximise the wider impact of their research.”*

However, there does not appear to be a clear statement along these lines from Government, and some interpret this as meaning that Government still wishes universities to pursue knowledge transfer with a revenue generation goal (the use of income metrics for funding allocations is sometimes quoted as evidence of this). We also heard a view that different parts of Government may favour different goals.

So long as there remains a residual view that the Government wants knowledge transfer to generate net income for universities, the Group believes there is a risk that this will encourage universities to negotiate hard for the deal that is best for them financially, at risk of slowing or stopping the knowledge exploitation process to the detriment of the economy.

(B) Public funder expectations from their collaborative research funding

The second ambiguity is in relation to funding that is provided specifically by public funders as their contribution to collaborative research with business. For example, collaborative research grants from Research Councils or funding direct from Government Departments, such as through the Technology Programme's Collaborative R&D 'product'. Where public funders are paying part of the costs, do they have expectations over who should receive financial benefits from any IP arising?

If business is paying fully for a piece of research then they have freedom to negotiate terms with universities, but when public funding is also contributing, what change does that make? Some in universities feel that when public funding is involved then more of the benefits should accrue to universities, who are better placed to serve the public interest. On the other hand, some businesses expect that since they contribute to public coffers significantly through taxes some of the public funding should be to help support them. Another way of looking at this would be that with public funding involved, there should be an obligation to exploit any IP to the benefit of the economy, but then there is the question of which route would best benefit the economy – exploitation through the company or through the university: a company may be well placed to develop an idea in their own area of expertise, but a university may feel better placed to exploit it in other areas. The divergence in views could be an immediate source of tension in negotiations. At the moment it seems that some funders stand back from this. **A clearer view of intentions from public funders could potentially reduce ambiguity and set negotiations off on a faster track.**

The group considered whether to recommend that public funders should be more prescriptive in setting out how IP should be dealt with. However we decided against this – believing that a rigid approach could actually harm university / business collaborations. The rigidity of the Bayh-Dole Act in America (where IP from research with any public funding component must belong to the university) was noted as a major barrier to collaborative research there.

Research Council position on IP

The Research Councils now have a common set of conditions for their grants. Within these there is standard condition in relation to commercial exploitation, which covers IP (RG 21):

“Unless stated otherwise, the ownership of intellectual property, and responsibility for its exploitation, rests with the Research Organisation. The Research Council may, in individual cases, reserve the right to retain ownership of intellectual property and to arrange for it to be exploited for the national benefit and that of the Research Organisation involved. This right, if exercised, will be set out in an additional condition.

It is the responsibility of the Research Organisation, and all engaged in the research, to make every effort to ensure that any potentially valuable results obtained in the course of the research are exploited, and that there is a suitable return to the Research Organisation and the researchers from any such exploitation. The Research Organisation must ensure that all those associated with the research are aware of, and accept, the arrangements for exploitation.

Collaborative arrangements are expected to be put on a formal basis through an agreement covering the contributions and rights of the organisations and individuals concerning exploitation. Such agreements must be in place before the research begins. The terms of collaboration

agreements must not conflict with the Research Councils' terms and conditions of research grants."

This is a standard condition which applies to the basic non-collaborative (fully public) research grants as well as collaborative research. But in trying to cover both types of grant there is a risk that the wording is ambiguous. We heard examples from businesses of negotiations where the conditions appeared to be being misinterpreted. The general point that universities have an overall responsibility to ensure that IP is properly exploited is sometimes being misinterpreted to mean that they have to own the IP. And the point about 'suitable return' has sometimes been interpreted to mean a royalty is necessary when, according to the evidence we heard from EPSRC, that is not a necessary requirement.

Given the ambiguity it appears that there is at least scope for improved communication of Research Councils' policy on IP in collaborative research. Guidance which specifically addresses collaborative research with business would be helpful.

Some of the Research Councils do have guidance in this area; although it is not necessarily well known, and may not sufficiently clear up ambiguity. Also there are some differences in the guidance.

For example, the BBSRC do have specific guidance on IP in relation to collaborative research, which does appear to go slightly further than the standard condition:

"the industrial collaborator should have the opportunity to acquire at least user rights and it is self evident that it should not be denied access to the results of the project in which it has participated. The arrangements would usually include a revenue sharing agreement and penalties for non-exploitation by the industrial partner."⁴

EPSRC's guidance is perhaps more neutral:

"We delegate responsibility for managing IP arising from the research we fund to the funded organisation. We suggest a flexible approach, and do not lay down any prescriptive rules about how IP should be identified or managed. Agreements between partners will need to reflect the circumstances of each case, and should be put in place before projects begin.

We expect universities to manage their IP and to make sure that those generating the IP get appropriate benefit from its exploitation. Unless arrangements have been made in advance, our guideline is that IP resides with its generator. Arrangements between partners should make sure that there is a suitable return to the university and researcher, that IP ownership returns to the university if it is not exploited by the business partner in an agreed period, and that there should be no significant restrictions on researchers' future research activities.

...

We encourage universities to be realistic about the financial and other benefits of owning IP. The costs, in time and money, of developing a potential commercial product from a research discovery can be very substantial with no guarantee of success. Maintaining and defending patents can require large and ongoing financial or legal resources."⁵

The Group feels that RCUK could play a role in helping to draw up common guidance across the Research Councils in this area (and subsequently publicising it). It would be helpful to involve universities and businesses in considering this guidance.

⁴ "Intellectual Property" guidance booklet published at:
<http://www.bbsrc.ac.uk/business/ip/Intellectual%20Property.pdf>

⁵ Extract from IP Guidance Page on EPSRC website: <http://www.epsrc.ac.uk/Business/Guidance/IP.htm>

RECOMMENDATIONS:

- **Government should make a clear statement of policy that the primary objective of their support for university / business interaction is to improve the knowledge base and increase the economic impact of research, rather than generating extra funding for universities.**
- **Research Councils should ensure there is clear and well publicised guidance on the handling of IP in collaborative research which they co-sponsor – ideally this should be coordinated through RCUK to ensure consistency.**
- **Likewise, other public funders of research such as Government Departments should give clear guidance on the purpose of their contribution to collaborative projects and their expectations in relation to IP**

3.3) Clear Institutional Strategy

Whatever the official position of Government and funders may be, the senior management of each University will have its own particular strategy in relation to collaborative research with businesses and other research institutions. It is this strategy that will tend to feed through to those negotiating with companies and those taking the final decisions on contracts.

Universities may have different overall aims in their desire to engage in collaborative research, for example:

- to maximise income to cross subsidise other activity
- to undertake exciting new research
- to make their research and courses more business-relevant
- to gain high profile relationships to attract students

(A useful list of the benefits of collaborative research, extracted from the European Commission's voluntary guidelines, is attached at Annex D)

But it appears that these aims are not always clear or well communicated, and consequently not deployed. For example the very top level of the organisation may be keen to increase the number of relationships with business, but unless that objective is clear, there is a risk that staff involved on a day to day basis in negotiating agreements (or advising on them) may try to maximise net revenue and fear giving ground on one area of negotiation, not recognising the key importance of the other benefits the institution is trying to reap from the work, and how relevant they are to the institution's strategy.

The Group believes there are many beneficial reasons, beyond pure income generation, why a university engages in collaborative research with business. A clear statement from university senior management stressing the importance of some or all of these benefits would help those negotiating.

RECOMMENDATION:

- **Senior management in each university should issue clear policy statements setting out their aims for collaborative research relationships with industry, so that there are clear messages to academic staff and those staff negotiating on their behalf. This should ideally be endorsed by the University's appropriate Governing body.**

3.4) Overestimate of scale of potential reward

The Group felt that universities may sometimes have unrealistic expectations about the potential scale of reward from IP derived within collaborative research.

Income from IP in universities tends to be very small in comparison with the income from collaborative research (although the ratio will vary among institutions). For example, according to the HEBCI survey for the academic year 2005/6 (not yet published), the total value to the HE sector of collaborative and contract research was almost £1 billion, where in comparison, the income from IP was only £30 million. And even in the USA, where MIT is recognised as a leader in IP commercialisation, its income from that source only represents a small fraction of its total income. However, IP income may be seen as more desirable in that it is largely new income without the need for additional research activity.

We did hear the view that the income arising from IP tends to be predominantly derived from wholly publicly funded 'blue skies' research, rather than from collaborative research. However, there was not a simple way of testing this -- current data on IP income is not broken down by original funding source. We believe further investigation would be helpful.

Although there are significant sectoral differences, the probability of a collaborative research contract leading to a 'blockbuster' piece of IP that generates major revenues appears to be small. But the fear of 'regret' of passing up on such a major deal does seem to be a significant motivating factor in negotiations. The group was concerned that it may not be rational for institutions to hold out 'just in case', given the problems this can cause. There may be cases where institutions risk of 'throwing the baby out with the bathwater', where concern over not losing out on IP actually prevents or impedes a substantial research income.

University senior management could take a view on the likelihood of significant IP income, and whether they could have a more relaxed approach in order to facilitate more collaborative research activity. This would need to be clearly communicated to Research Contracts Offices (RCOs)⁶ and academic staff so they were empowered to agree deals on this basis.

In some cases there may be further pressure coming from academics: institutions will want to ensure that there are appropriate incentives for academics to engage in

⁶ We use this term to refer to a specialist / dedicated unit within a university that advises on or directly negotiates collaborative research contracts

research with business, but on occasions there may be unrealistic expectations over the likely extra income that might be generated.

RECOMMENDATION:

- **University senior management should encourage a balanced approach to IP negotiations, recognising the benefits of the business relationship and the relative improbability that any individual piece of IP will ultimately turn out to be a ‘blockbuster’.**

3.5) Approach to negotiations

We heard evidence of good and bad practice in the way that both sides approach negotiations.

This can be summarised in the following four areas:

- entrenched positions
- understanding the other side
- creativity / flexibility
- escalation and decision making

Entrenched Positions

The group was disappointed to hear multiple examples of negotiations where the two parties started off with entrenched positions and refused to move.

For example:

- both the university and the company entered a negotiation with each side insisting they must own the Intellectual Property – non negotiable
- a university agrees to assign IP, but insists on agreeing a royalty percentage up front, the company refuses to have any future liability
- a university insists that all collaborative research is charged at 100% FEC, and a company that will never pay that high a proportion

Some of these cases may represent fundamental mismatches where a deal would never be possible, but it is likely that in others, an early attempt to understand the other side’s motivations, and a little more creativity could result in a win-win resolution.

Understanding the Other side

It is generally accepted that good practice in negotiations is to start off by developing an understanding of the other side’s motivations. But it appears that this is not always happening, with negotiations diving straight in to exchanging marked-up legal drafts. This may depend on the initial contact. An approach via a university’s Research Contracts Office may lead to a different result than if, for example, the first contact was between a Pro-Vice Chancellor and Research Director of a company, who might agree heads of terms before passing it down for detailed agreement.

This general principle is particularly relevant when you consider the large variety of circumstances that businesses face, and the motivations they have in relation to IP. Not all circumstances require companies to own or have very strong rights over IP generated. Some simply want right to use it so that it does not block them from future work based on ideas from the collaborative project; others want to ensure their industry competitors can't use it; some have large portfolios of patents and make their money from their wider position, rather than any one patent; or may engage in patent trading swapping with others; or want to avoid 'royalty stacking' (individual royalty payments may seem small in isolation but if multiple patents involved in final product the sum total of many small royalty payments may make product too expensive and unviable). In some cases firms may wish the IP arising to be free – such as for open source software (and there may be times where this desire clashes with a university's newly-developed instinct to protect IP).

The Group found that sectoral differences are important. A pharmaceutical company may engage in research with the aim of creating strong IP towards a new therapeutic product, whilst a creative industry company may collaborate more with the aim of getting access to the right people. And the IP requirements of a small IT company working on a product they will sell directly may well be different to a large aerospace company bringing together thousands of components for a sizeable final product such as aircraft.

As part of the evidence gathering discussions, the Group heard a number of useful different points of view about the concerns of both parties. We have captured some of these in Annex B, but they can be summarised in the following table:

University Concerns	Business Concerns
<ul style="list-style-type: none"> - sustainability and income - fairness (for institution and researcher) - academic freedom - commercial freedom - incentives to researcher - complying with rules/expectations of public funders (and related confusion) - protecting the public good - ensuring full exploitation for societal benefit - creating long term relationship - getting long term buy-in from researchers 	<ul style="list-style-type: none"> - seeing IP in perspective - failure to recognise non-cash input from business - protracted negotiations - value for money - competitiveness of UK research (FEC, having to go abroad) - fairness - commercial freedom - competitive advantage - long term access to researchers

These concerns will differ in different contexts, particularly in different business sectors. Given this, a 'one size fits all' approach may be inappropriate to deal effectively with these differences, but the Group heard that such an approach was sometimes adopted by negotiators.

This could partly be a question of experience and training – for example if individual negotiators only have experience of negotiations in the pharmaceuticals sector and try to automatically apply the rules in the aerospace sector they could come unstuck. But again, the basic principle of starting with an understanding of the other side's motivations holds true.

Creativity / Flexibility

Fortunately, the Group also heard examples of creativity in agreements (See box).

Box: Examples of creativity in IP arrangements

One approach saw a company take ownership of IP, but giving lump-sum success payments to the university for patents filed (on a sliding scale, with the first group of patents being more valuable). In addition, there was an option for the university to select a predetermined fraction of the generated patent portfolio at end of the project. These patents would then be eligible for royalty payments in the case of significant commercial success. This approach helped both in giving a reward and incentive for performance, and also in avoiding the concern over the 'golden patent that got away', whilst not leaving the company exposed to a large web of liabilities

Escalation Process and Decision Making

There were good examples of how tricky problems were quickly resolved by being escalated to a **sufficiently strategic** level with the proper authority to take decisions. The general view was that if senior management on both the company and university side believe that a relationship between the two sides is important then a deal will be done fairly quickly. Staff at a more senior level are able to see the bigger picture and are better able to exercise judgement over the balancing of risk (trading off the loss of one negotiating point against the gains from another).

Clearly senior management do not have time to be involved in every collaborative research deal in a university. But an agreed escalation procedure to be used in the event of difficulties could be a good way to help smooth the process (such a procedure need not be rigid, and might reflect the specific circumstances of the negotiations).

It appears that the level and location of decision making in relation to collaborative research contracts could be an important factor. In some cases the Research Contracts Office or Finance Department is seen to have the final say over a contract. In others the Research Contracts Office acts to advise a key decision maker (eg budget holder – such as head of school) or head of research, but do not have the final say in a deal and therefore cannot hold it up on their own.

The use of **account managers / relationship managers** – appears to be another form of good practice that works. These are separate from the academic researcher (and need to represent the interests of the institution); they can be based within a research services function, but are there to help seal a deal and have more of a relationship role

than a technical / legal contracts officer role. This is also consistent with the evidence that the individual people involved and their working relationships are important – not merely the functional skill / expertise of the people.

In summary, the lessons of good practice are:

- DON'T take entrenched positions
- DO seek a clear understanding of the other side
- DO be creative / flexible and pragmatic
- DO ensure decision making is taken at the right place, and there is an appropriate escalation procedure for problem negotiations

We recognise that these are relatively straightforward principles, and certainly not unique to collaborative research negotiations; nonetheless the Group believes that they are often being overlooked by both sides of the negotiation.

The Group believes that all universities could benefit from a simple review of their own procedure for negotiations to consider whether they could be improved. We believe there could be a role for bodies such as AURIL, UNICO/PRAXIS and the Institute of Knowledge Transfer (IKT) here. The newly-formed IKT could have a particularly useful role in creating a platform for sharing of good practice given that it is designed to have a membership that covers both sides of the negotiation. The Group also felt those involved in negotiation on both sides would benefit from better informal connections with each other (outside of the charged atmosphere of a specific negotiation), through joint seminars, short secondments etc and that was something that the bodies above could help broker.

RECOMMENDATIONS:

- **Both universities and businesses should review the approach their organisation takes on negotiations and consider whether it could be improved, in line with good practice. They should also ensure that there is sufficient senior management visibility of contracts, clear direction on desired outcomes, appropriate escalation procedures, and that decisions are taken at the right level, so that strategic considerations can be taken into account.**
- **Knowledge transfer bodies such as AURIL, UNICO/PRAXIS and particularly IKT should consider what further role they could play in developing and promoting good practice to improve the quality of negotiations.**

3.6) Benefits of Strategic Relationships

There was clear evidence that long-term strategic partnerships are a powerful way to avoid problems over negotiation of individual research contracts. Within such relationships, there is more likely to be give and take, and rapid access to senior management to smooth over problems for the longer term benefit.

While not all relationships will be suited to being run as a long-term strategic partnership, seeing their strategic benefits of these relationships, rather than just the activity directly associated with the contract, is likely to lead to a smoother negotiation process.

Both companies and universities gave examples of a triangular hierarchy of relationships. In one case a university had approximately 10 strategic relationships with companies, around 150 'operational' partnership relationships, and then 2000+ purely transactional relationships.

One other type of strategic relationship is worth mentioning in passing. A number of universities have long term relationships with investment companies in order to help commercialise IP (for example at time of writing, IP Group have deals with 10 UK Universities). The Group did consider whether such deals are likely to impact on the way that those universities negotiate on collaborative research. But we were reassured that these agreements are kept separate from collaborative research and do not act as an impediment.

3.7) Research Contract Offices

Most research universities have a specialist function that considers the contract issues associated with collaborative research. The organisation of this function will vary from university to university. In some cases it may be part of dedicated Research Services function that deals with varying aspects of research funding; in other cases it is part of a broader Technology Transfer Office / commercialisation / knowledge transfer office; and sometimes it is dealt with by a team within the Finance Department. We use the term Research Contract Offices (RCOs) in this report to describe this function (irrespective of its location within the university).

There was a general view that overall the professionalism of RCOs has improved significantly over the last decade. But several of those giving evidence (from both the university and business sides) thought that these offices can act as a barrier to agreeing collaborative research -- slowing down agreement if not necessarily ultimately preventing it.

There was concern that the role of the RCO should be about helping and facilitating agreements when in some cases the role has become one of gatekeeper. Should RCOs be gatekeeper or facilitator? In some ways this may be a false distinction: they need to exhibit aspects of both. The RCO should try to facilitate contracts, going the extra mile to make sure they happen where possible; but at the same time they should help protect the interests of the university (and ultimately the research group and researcher). The Group believes there should be a clear balance between these two aspects with the primary RCO role being to advise the researcher and decision maker (eg head of school / faculty / department) to ensure they can take an appropriate decision.

It is important to recognise that their central role means that RCOs can attract disproportionate criticism. Acting as the face of the University policy and as the guide to realism in academic staff can place them as the apparent ‘opponent’ of both sides in a negotiation. It is therefore important that they are well trained and are working to clear institutional guidelines on the decision making processes.

Whilst there were significant concerns expressed over RCOs, there were also some criticisms of the equivalent function in business, eg “hard nosed lawyers don’t see bigger picture”. The Group felt that this could sometimes be counterproductive, and that it would be in the interests of business to be more sensitive to the nature of university research, recognising the wider benefits of longer term collaborations.

RECOMMENDATIONS:

- **University senior management should ensure there is clarity over the balance between facilitator and gatekeeper roles for Research Contract Offices (including where the decision making lies).**
- **Businesses should ensure that commercial officers, perhaps more used to the cut-and-thrust of supplier/customer negotiations, are attuned to the sensitivities of university research and the benefits of long-term research relationships**

3.8) Lambert Agreements

The Group investigated the extent to which the Lambert model agreements were being used. At the start of this process we heard the view that the issue of IP had already been extensively covered (‘done to death’) and the launch of the model agreements had helped solve any outstanding problems. We were therefore keen to test out how much difference the Lambert agreements had made.

Our evidence indicated that there is only a limited use of the agreements themselves. With a small number of exceptions, the majority of those we spoke to did not use them in a significant way, for example because they did not quite meet their requirements. Nevertheless, several people found the principles behind the Lambert agreements to be a useful starting point for their negotiations, and the Lambert ‘decision guide’ to be particularly useful. A number of people felt that their own standard agreements were not very far away from the Lambert agreements.

At our request, AURIL, have, offered to survey their members to get a better understanding of the extent of use of the Lambert agreements. Such a survey could also explore the reasons why some institutions don’t use the agreements.

Subject to the results of this survey, the Group felt that further publicity for the Lambert agreements may be beneficial. Publishing a list of universities and companies that already use the agreements together with, case studies indicating the benefit they brought could perhaps be a means of endorsement

We heard that collaborative research relationships were often done on a multi-party basis, and that negotiations with multiple parties were often significantly more complicated than bilateral ones. Furthermore, when multiple companies are involved, they may feel more concerned about getting the legal form of the agreement correct.

The Group notes and welcomes the fact that the groups that created the original Lambert model agreements are developing a new set of model agreements for multi-party collaborations.

There was some concern expressed that some Government Departments do not use Lambert agreements and that Government Departmental support for the agreements could help encourage greater take up.

3.9) Full Economic Costing

The issue of **Full Economic Costing** was raised a number of times.

There was some concern that the implementation of FEC is making UK Research less competitive in comparison with foreign universities, and has led to a shift from collaborative research towards consultancy (which has helped to avoid problems with FEC, but was not necessarily in the best interests of UK plc). The Group felt that further investigation of this issue would be useful.

We also heard the view that FEC was being interpreted too rigidly. Having a standard rate that had to be paid did not take account of the circumstances. Some from universities felt that there was no option but to charge 100% FEC in their institution, but it was clear that not everyone took this approach – in some cases it appeared that there was still confusion as to whether this was a requirement from Government / Research Councils (although the Group and many contributors believe this is not the case).

If there is a strategic benefit to a university in undertaking the work then receiving less than 100% FEC may be appropriate – but clearly that means cross-subsidising from other income streams.

Such decisions involve a number of factors – the cost, price and value of the work, as well as long term sustainability. The Group felt that Universities should be flexible in their decisions on pricing, taking into account the cost of the work, the broader benefits accrued, the likely value to the company, and the context of Government and funders' demands for sustainability in the sector.

Box: BBSRC Industrial Partnership Awards

One example of good practice was the BBSRC's Industrial Partner Awards (IPAs). Where an industrial partner contributes 10% in cash to the total cost of a 'responsive mode' project then that project is given special IPA status. IPA status projects can be funded in preference to non-IPA projects of equal scientific merit because of the significant user interest demonstrated by the industrial contribution to the cost of the project.

RECOMMENDATIONS:

- **Government and public funders should make a statement of clarification, reminding Universities that the advent of Full Economic Costing does not require them to charge 100% FEC on individual contracts with business – rather the price charged is their own strategic decision, so long as overall sustainability of research is appropriately factored in.**

3.10) Impact of targets and metrics

In some cases Universities may set internal targets, such as an amount of IP income to deliver, for the contract negotiation staff, which make them feel under pressure to deliver good deals in terms of IP positions. We heard one example where a contracts officer's pay was dependent on the IP outcome of negotiations. The risk is that this drives behaviour in a way that is detrimental to the volume of collaborative research.

Internal targets may be influenced by the existence of Government metrics – both through a 'peer pressure' effect arising from publishing league tables and also as determinants of funding formulae. We also heard of a residual view that Government's emphasis on spinouts puts pressure on universities to hold on to IP from collaborative research so that they could generate more spinouts.

The Higher Education Innovation Fund was specifically cited several times. Aimed at promoting university / business interaction, HEIF funding is now channelled through a formula where one of the key measures is income from business. IP income is one component of that, but collaborative research income also is.

The Group did not feel that these were likely to be major factors in driving behaviour. But they felt that the Government should keep its approach to metrics under review to ensure that it does not create perverse behaviour.

It was also noted that RDAs tend to set targets for outcomes such as jobs saved, spinouts created as a matter of course when they give funding, although the RDAs hand may be tied to some extent by the obligations on them under the single funding pot mechanism set by Government.

RECOMMENDATION:

- **University senior management should check that their own internal targets do not inadvertently drive the wrong type of behaviour in negotiations on collaborative research**

3.11) Areas for further study

As well as the specific recommendations of practical improvements that could be made, the Group was asked to consider any areas where further work might be needed.

Wider engagement with SMEs

A number of participants pointed out that, while collaborative research generally worked well, the situation was markedly different in relation to SMEs. The vast majority of SMEs do not work with universities, and more could certainly be done to encourage this. The group felt this issue was largely outside of its scope, but that this was clearly an important area that would be worth further investigation.

Use of Lambert Agreements

It would be helpful to have a better understanding of the extent of use of Lambert model agreements and any reasons why they are not being used. AURIL have already offered to help by conducting a survey of their members.

Extent of IP income arising from collaborative research

We heard it suggested that the majority of income that Universities receive as a result of IP tends to come from IP generated as part of publicly funded 'blue skies' research, and that IP income arising from collaborative research contracts with business are much lower. It could be useful to conduct a survey of those universities with significant IP income to test this out.

Impact of FEC

A number of participants in the evidence gathering sessions expressed concern that the advent of FEC was making British research too expensive and potentially driving business-funded research abroad. This issue was not the scope of our work, but the Group felt it would be worth further work.

ANNEXES

- (A) List of Group Members**
- (B) Understanding the Aims and Concerns of both parties**
- (C) Summary of Evidence**
- (D) The benefits of collaborative research**
- (E) 9 Points for Technology Transfer**

ANNEX A

Group Membership

Formally, the members originally invited by Sir Keith O’Nions to be part of the Group were:

Peter Saraga	Chair (President of the Institute of Physics, formerly Managing Director, Philips Research Laboratories UK)
Ian Leslie	Cambridge University Pro Vice Chancellor Research
Andrew Hamnett	Strathclyde University Principal
Paul Wellings	Lancaster University Vice Chancellor
Tim Wilson	Hertfordshire University Vice Chancellor
Rowan Douglas	Willis Re Managing Director, Analytics, International and Specialty
Ric Parker	Rolls-Royce Group Director of Research & Technology
Malcolm Skingle	GlaxoSmithKline Director, Academic Liaison
Graham Spittle	IBM United Kingdom Limited Vice President, WebSphere Integration Development & Hursley Laboratory Director

In practice, Tony Ford, Senior Counsel Hursley Laboratory & Corporate IP has deputised for Graham Spittle. Additionally, David Clarke, Alix Green and Trevor McMillan have attended on occasions on behalf of Ric Parker, Tim Wilson and Paul Wellings respectively.

Ashley Malster of the Department for Innovation Universities and Skills acted as secretariat to the Group, supported by Chris Bush.

ANNEX B

Understanding the aims and concerns of the parties

Here are the detailed descriptions of the concerns listed in the table in Section 3.5.

University Concerns

- **Sustainability and Income.** Universities will aim to receive sufficient income from the collaborative research to cover the costs of the work they are going to undertake. In some cases they will expect to be paid at least 100% FEC for the work. In other cases they will accept less, but in return for something else (eg if they feel that the research area is of significant strategic importance to the university). But if not paid FEC this means that they are subsidising the work from other funds (internal or external), and still need to ensure that their overall funding is sustainable. In addition, Universities will aim where possible, to have a share of any upside arising from IP created in the research.
- **Fairness.** One reason for wanting a stake in any upside is a question of fairness – the university and the researcher want a fair share of value that has been created. This seems to be particularly noticeable in relation to the possibility of a blockbuster win from IP – there may be a very low probability that this would happen, but often universities and researchers are concerned not to have lost out on this opportunity.
- **Academic Freedom.** It is vitally important for universities and researchers that they are allowed to both publish research results, and also use them in any future academic research. Contracts therefore need to give universities the right to publish (after a reasonable delay if necessary for patent filing), and a licence to use IP on academic grounds. However we have not found this to be a barrier to collaboration. This requirement is well understood and there are practical ways of working within this constraint. Indeed in some cases companies may welcome publication by a University as a mechanism to ensure that their competitors cannot patent the invention.
- **Commercial freedom.** Sometimes universities want more than just academic freedom and retain the right to pursue commercial development in the future, perhaps by building on the initial IP with further research at a later stage that is not merely of an academic nature. They may feel that they are better placed to exploit the IP in this way than the company collaborating in the research – perhaps where they wish to do this outside of the field of expertise of the company.
- **Incentives to academics.** An academic researcher who really wants to do a piece of collaborative research will usually be able to arrange things internally, to make sure it happens. On the other hand, it seems that many are wary of working with business, not necessarily seeing it as being in their interests. Many universities are working to change their culture and will be concerned that the nature of the contract with the business should at least not discourage the academic. Ensuring a reasonable personal return from any IP upside is one way of incentivising the academic. However, they are not necessarily strongly motivated by money, and peer recognition and promotion may be more effective incentives.

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- **Complying with rules/expectations of public funders (and related confusion).** For most universities public research funding is significantly larger than private funding. Universities are keen to comply with the rules associated with funding, such as the terms of a grant, which may require them to ensure they get a reasonable return. They also want to meet broader expectations – for example some institutions felt under pressure to create spinouts because it was felt that was what Government wanted.
 - **Ensuring full exploitation for societal benefit.** Universities feel they have an obligation to ensure that the knowledge they create is used for the benefit of society as a whole. This would include ensuring that potentially useful IP is exploited. In relation to IP that potentially has multiple applications in different fields, a university may wish to give a company IP rights in their field of business, but retain IP rights outside of this field if this is the best way to ensure that full benefit of the IP can be realised. Universities will also want to guard against dead/dormant IP. Where a university does assign a patent or grant an exclusive licence to a company, it will want to ensure that the company works to commercialise this. Best practice is for agreements to contain a clause allowing IP to be clawed back by the university if it is not being used.
 - **Creating long term relationship.** In some, but not all cases, the university will be looking to foster a long term relationship with the business in question, and may be willing to look wider than an individual research contract and consider its future interaction with that business in the round.

Business Concerns

- **Seeing IP in perspective.** Businesses want the value of IP to be seen in the context of the end product. The proportion of the end price of a product which is attributable to the IP (rather than say further development, investment, distribution etc) may be quite small. Also often the relationship between patent and product is complex – eg with multiple patents (and components) going to make up an end product. Businesses want negotiations over IP to reflect these realities.
- **Failure to recognise non-cash input from business.** Business is concerned that sometimes universities take too narrow a view of the contribution business makes. For example a university may focus solely on the money paid for the research, and not recognise the contribution in time by company staff, access to state of the art equipment, materials (eg physical or biological) and techniques. There may be some connection with a university's implementation of FEC – eg if there are fixed rules on what percentage FEC needs to be charged and non-cash items are not factored in.
- **Protracted negotiations.** We found that problems over negotiations tend to result in them being concluded slowly, rather than broken off altogether. Protracted negotiations are a real concern for business – probably more so than for universities. Business needs to be quick at responding to market pressures, and significant delays can make the collaborative research process unattractive. The pressure for a

quick resolution is probably less intense in universities, and this may partly explain why more is not done to combat delays.

- **Value for money.** Business clearly wants to make sure that the research it is paying towards comes at a reasonable price. The approach to IP is part of that – some businesses are concerned that having to pay a significant cost (eg FEC) for the research and then pay afterwards for the IP as well is too much.
- **Competitiveness of UK research.** There is some concern that the recent introduction of FEC (or more accurately, the way that universities have responded to this) has increased prices and made UK research less competitive. The alternatives include, doing work in-house, using a dedicated private research organisation, or going abroad. Businesses do not tend to take a simplistic ‘cheapest wins’ approach – they are looking for the best quality of research, and have an eye to strategic considerations. They are concerned about a shift towards doing more research in other countries, and a shift away from strategic collaborative research contracts towards more short-term consultancy work.
- **Fairness.** Both sides think in terms of the fairness of the deal. Some businesses take the view that they have already contributed significantly to public funds through their taxes and so on, and so that they should receive a fair portion of IP arising from collaborative research including public funding, rather than all of the IP rights going to universities.
- **Effective protection and exploitation of IP.** In some cases companies are pursuing a research project with a view to creating Intellectual Property that will put them at an advantage over their competitors. In these cases the company will feel it is important that they have strong rights over IP, particularly to ensure that direct competitors are not able to use the IP. Companies will also want to ensure that the IP can be properly defended – but there is concern that Universities may not have the capability, budget or appetite for a legal battle to enforce a patent.
- **Commercial freedom.** In other cases, a specific piece of IP alone is not to be used for unique competitive advantage, but it does help take the company forward and improve its products / services, and the company will want to ensure that it has the right to use the IP. And it may be concerned to ensure that this right does not come at a significant cost further down the line. Similarly, the company may wish to use its portfolio of patents to do cross-licensing deals with other companies (very common in the electronics industry where an end product may be made up of hundreds of components with multiple patents associated) or alternately straight sales of patent portfolios -- the company will be concerned that the deal on IP rights with a university does not hinder it from such deals.
- **Long term access to researchers:** Often business will want to ensure that it has quality access to specific ‘star’ researchers in an institution. In some cases they may wish to have that tied into the contract. In these cases it can be the researchers rather than the institution that is the draw for the company, and if the researchers leave the institution, the contract may end, and the work potentially follow later to their new institution?

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- **University Conflicts:** There can sometimes be conflicts between a university in its role as an academic research institution, and then in its role as creator / supporter of a spinout company which may operate in an area that competes with or is a potential supplier to a business that has been engaging in collaborative research. The same issue potentially occurs at the level of an individual researcher, who might receive funds from a company one day and the next become chief executive of a spinout.

ANNEX C

Summary of Evidence

The notes below provide a summary of points made during the Group's evidence gathering sessions along with some additional interviews.

To ensure a frank discussion, it was agreed that the notes would be on a non-attributable basis, although they do highlight where a source was a university or a business where this is particularly relevant.

Participants

Name	Organisation
Tim Slack	Airbus
Philip Graham	AURIL
Kevin Swale	BT
Lambert Dopping-Hepenstal	BAE
Tim Bradshaw	CBI
Tim Jones	Centre for Financial Sustainability
Philip Ternouth	Council for Industry and Higher Education
Clifford Friend	Cranfield University Engineering and Physical Sciences Research Council
Alasdair Rose	Kings College London
Alison Campbell	Kodak
Sam Weller	Philips
Jason Hector	Pfizer
Sam O'Connor	Qinetiq
Alison Hodge	Royal Holloway / 1994 Group
David Sweeney	Sun Microsystems
Simon Tindall	Tanaka Business School
David Gann	University of the Arts
Mike Matfin	University College London
Jeff Skinner	UK Intellectual Property Office
Jim Houlihan	University of Southampton
Philip Nelson	University of Surrey
Christopher Snowden	

Valuation of IP

- *Does either side in negotiations put too high a value on IP?*
- *What form does this take?*
- *Is there too much emphasis on IP rights, not considering the negotiation in the round?*
- *How easy is it to value IP upfront in research projects – could IP matters be left for later agreement (agree to negotiate later)?*
- *Should there be a difference between predictable and unanticipated IP?*
- *Does each side fully recognise the wider (non-cash) contribution made by the other?*

It was generally accepted that it is very difficult to value IP up front and at an early stage – often before it has even been developed. A number of participants, from both universities and industry, said that that they did not attempt to quantify the value of IP at the outset of a contract. A possible way forward which was suggested was to have a framework within which further discussions take place as the research work progresses, rather than try to value upfront.

Where Universities are unsure of the value of a piece of IP, it is possible in some cases for them to turn to industry to guide them towards what is an acceptable deal (example from within the Creative Industries sector – again will vary by sector).

It was suggested that there may be a lack of understanding from Universities of the full costs involved in taking an idea from research to market – and of recognition that the bulk of these costs are generally borne by the industrial partner.

A fuller understanding on both sides of what each party brings to the collaboration may improve negotiations. Some academics believe the knowledge they provide is undervalued by the collaborating business, whilst some businesses feel universities don't fully appreciate the non-financial contributions they themselves make in terms of equipment and access to their knowledge. One university representative expressed the view that companies should properly cost the 'intangible' benefits and then include them with the tangibles if they wanted them to be taken into consideration within negotiations. A number of participants from business did not agree with this approach.

Several participants felt that the issue wasn't one of IP being overvalued, but there does seem to be some unnecessary overemphasis on IP in negotiations. One university explained that they've not lost a contract as a result of IP negotiation but that it does cause an immense amount of energy and effort on both sides.

The emphasis on IP in negotiations is particularly unjustified when you take into consideration the fact that income from licensing IP is greatly out shadowed by income from business through collaborative research.

It was suggested that there may be a need to educate researchers (and companies) on the relative importance of IP in collaborative research negotiations.

Some of the businesses present acknowledged that they too can become hung-up on IP issues (including business-to-business transactions), and that in most cases it is probably not as critical as it is made out to be.

Clarity of ownership of IP is of concern to some businesses. Within the research environment there can be a lot of movement of people and ideas, and it is not easy to track these movements. There is a risk to companies exploiting IP if the clarity over ownership of what makes up the IP is not precise. One university raised the issue of student IP ownership, and enquired whether this is something which the Research Councils consider?

A question was also raised over whether universities are restricted in their ability to protect and take on the risks of IP ownership by their charters. If this is the case, does this devalue the IP when it is owned by the university?

Some academics present found that agreeing royalty payments rather than the ownership of IP is the sticking point in negotiations. However, in some situations where companies fund the majority of the

research, they have found that universities don't have a problem regarding royalty payments resulting from any IP generated. In situations where the company would like full ownership of the IP, yet are unwilling to agree to royalty payments (see example of aviation industry), then the universities concerned would expect to be paid over the FEC.

A number of participants agreed that there is sometimes a misunderstanding from universities that they must retain the IP when the research is publicly funded. Guidance from Research Councils states that the university has responsibility to ensure that IP is exploited, but this does not necessarily mean retaining the IP if a partner is in a better position to exploit it. In addition, the guidance suggests that the researcher should receive a suitable reward where their IP is exploited – but again there were some misunderstandings reported as this does not necessarily mean a financial reward, which is how some universities interpret it. It was suggested that it may be necessary to reiterate and clarify this guidance.

In the cases where a strategic partnership exists between a university and a business, it appears that IP negotiations are less of an issue. The presence of a strategic agreement allows for IP agreements not to be locked down early on, with collaborations brokered informally under a confidentiality agreement, and with IP negotiations taking place as and when required (however, this is one of the many situations where different industries will require different approaches).

Some of the businesses participating felt that there was a perception amongst some universities that they try to take advantage of academia in IP negotiations. The businesses in question explained that this would be not make good business sense and that if disputes occurred then they would try to rebuild relationships through other projects.

Another factor which was raised was that new business models are emerging in some sectors where tight control of IP is not necessary. For example, in the technology industry there is a move by some companies towards 'open source' software, where the IP is free for all to use (see IBM for an example). There needs to be a flexible and enlightened approach to these developing business models.

Different industries act in different ways with regard to IP. For example, in the aviation industry it is near impossible to attribute the value of a piece of IP to a final product maybe 10 years on from the original research, and where many different elements of research and IP would have contributed to the final product. For this reason, it is difficult for this industry sector to agree to royalty payments. In other industries, e.g. electronics, IP is traded with other companies, and so full ownership is required whilst some companies are satisfied as long as they can use (license) the IP without restriction. Within the biotech industry, there is a more sophisticated method in place in many situations where rather than simple percentage royalty payments there are milestone payments dependent on technological milestones being reached. It is key for many businesses to be able to exploit any IP but for them to be able to limit the liability which may arise from royalty payments – it is not attractive to have to worry about future payments resulting from royalties. Knowledge of these differences in industry sectors by universities would make negotiations easier.

In addition to different behaviours from different industries, it was also discussed how, for one company, the length of the research also played a part. For short-term collaborations, they found universities were satisfied with the company retaining any IP developed, whilst for multi-year collaborations a letter of agreement was signed with the understanding that negotiations over IP would occur at the point of discovery of the IP.

A further area of investigation which was raised was that of venture capitalists who have long term IP agreements with universities. In these cases, the VC supplies cash upfront so it was presumed that they have some way to value the anticipated IP over a long time frame (e.g. > 10 years). How do they carry out this valuation?

A number of participants agreed that the principle of the Lambert model agreements is a good one, and that their profile should be raised. For example, universities could potentially market themselves (similar to a kite mark), to demonstrate that they have a standard set of agreements for collaboration and therefore don't require lots of input and legal wrangling upfront.

One participant from within the technology sector gave an example of a creative way around IP negotiation. Their solution was to allow the university to select 1 patent from every 10 from which they would receive 'substantial' payments should the patent be successful. For the other patents, the

university would receive a lump sum upfront for each patent filed (reducing on a sliding scale) and ownership would pass to the company. This was felt to be a good example of how a creative approach to negotiations can solve problems. Also, in this example there was an umbrella agreement in place with the university which facilitated the setting up of collaborative projects.

A number of businesses made the point that the most effective way to conduct IP negotiations was for universities to act professionally and pragmatically and judge the merits and details on a case-by-case basis.

They would like the government to be mindful of not overcomplicating things and making IP more of an issue that it actually is.

Flexibility and building relationships over time appear to be important criteria for success.

However, activities such as running workshops and improving education of the individual needs of different sectors may improve understanding and aid negotiations – one size does not fit all.

Ownership

- *Is there a strong bias towards either side needing to own the IP?*
- *Do negotiations explore the motivations behind both side's positions, or is there a "we must own it or no deal" approach from either side?*
- *What influences this?*

A representative from EPSRC explained the explicit IP and Exploitation policy it issues to those it funds. A key point of this guideline is that the university has the *responsibility* to ensure that any IP derived from the research is exploited. From the course of the discussions, it appears that there may be some misunderstanding amongst some universities who take this to mean that they must *own* the IP – this is not the case and it was felt that this may need some clarification. Some participants from within industry confirmed that they had come across situations where academics claimed incorrectly that they were required to retain ownership of IP. Representatives from businesses felt whoever is best placed to exploit the IP should take responsibility for it. Some also commented that there is sometimes a lack of understanding of the huge costs involved in taking a piece of IP to market, and that this should also be considered within the negotiations, and not just who puts in the majority of the funding at the outset.

There was evidence that on occasions both universities and businesses adopt an unhelpful and entrenched position on IP ownership. For example, one business had an experience where an exclusive license would have been acceptable to them rather than outright ownership yet this wasn't even an option for 2 of the universities they had tried to collaborate with. A number of participants believed that the negotiations tended to get off to an unbalanced start, with universities almost always working from a position of wanting to retain ownership of IP. One company suggested that they should have a right to a non-exclusive license from collaborative research they co-fund, with the option to negotiate exclusive rights.

A number of businesses revealed that one of their motivations behind requiring ownership of IP was that they would be better placed than the university in ensuring the IP is not infringed, and that if it is infringed they believe that they are more likely to prosecute the infringers (due to the large costs involved in doing so). An example of this was given by one of the contributors. Following a piece of collaborative research, the university in question refused to surrender ownership of the IP created to the company who was exploiting the IP in one of their products (via a licensing agreement). When a rival company infringed upon the patent, a lawsuit was entered into by the university, but despite being informed by lawyers they were very likely to succeed, the lawsuit was dropped as it was becoming too expensive to pursue. As a result, the relationship between the business and university suffered, leading to reduced funding and collaboration.

The issue of ownership also depends on the type and scale of project being undertaken. For example, one business explained that for short term projects the universities they deal with are happy for the company to have ownership of the IP. For longer term projects, however, over a number of years, their

approach was to work under a letter of agreement which allows for IP ownership to be negotiated as and when it arises.

A number of participants from universities and business agreed that the key issue with IP ownership was actually whether the company in question would have the freedom to exploit the IP (e.g. via an exclusive or non-exclusive license) rather than the question of ownership itself. In some cases ownership can be seen as a talisman, when in reality the most important thing is having the necessary rights required to exploit that IP. However, this varied by sector, as some companies with a large patent portfolio engage in the trading of patents for which they would require full ownership. For these companies the freedom of use of the patent which comes with full ownership is required. Another difference between industries is that in some cases whilst an exclusive agreement for applications within a certain field is required (for example, to use a patent in an aviation product), a non-exclusive license would be acceptable for out-of-field uses. This again demonstrated the need to understand the industries with which the universities are dealing with on a case-by-case basis.

For some small businesses, it was suggested that ownership might be important to give them an asset against which to raise investment.

Another issue which was raised by business representatives was that surrounding royalty payments. A number of business explained that their motivation behind preferring ownership of IP is that they do not want to be liable for potentially large, uncapped payments arising from use of IP as this would be a large risk for them to adopt. The extent of this is such that one business revealed that they would have to walk away from a potential collaboration if the university in question insisted on royalty payments as part of the agreement. Some universities also acknowledged that the negotiation of royalties can be a sticking point in negotiations, rather than ownership of IP. One university representative commented that in cases where a company requires full ownership of IP and was unwilling to negotiate royalty payments then they would expect to be paid the FEC of the research. One company also believes that FEC has confused the issue of IP ownership, as some universities believe that they are entitled to more rights to IP if they aren't being paid at FEC level.

Some of the comments from representatives in the technology sector show that the industry sector itself influences the issue of ownership. In some cases a tight IP ownership model is not necessarily required. An example of this is the recent trend in moving towards open source software.

One participant from a university explained that in their experience the biggest problem was in negotiating ownership of IP with other partner universities, and in some cases with RDAs. Others present thought it was unusual that an RDA would seek any level of ownership, and it was felt that this may be a misunderstanding on the part of the RDA who may have mistakenly felt that DTI guidelines required it to do this.

There was a general agreement from a number of participants that if the approach to negotiations is right and there is consideration of both sides' perspectives then this mitigates most of the problems which arise around IP ownership. One company explained that making joint appointments (e.g. with an academic working one day a week at their own site) was one way they had found to be successful in developing an understanding of one another's motives.

Drivers

- *Are there Governmental / regulatory drivers that influence the positions taken in negotiation, for example:*
 - *commercialisation targets and metrics on Higher Education Institutions;*
 - *tight funding environment;*
 - *Research Council conditions;*
 - *state aids rules;*
 - *charity law;*
 - *any others?*
- *Is there interference between collaborative research activities and commercialisation activities?*
- *Are universities expecting to create significant income from IP exploitation (perhaps offsetting funding constraints elsewhere) or just get a fair share?*

A key issue that arose in the sessions was over what the driver was for the government to encourage interaction between universities and business. Is the primary aim to encourage universities to ensure that as much of their exploitable research results in an impact upon the UK economy as possible for the public good, or is it for the universities to generate extra income? A representative from the EPSRC felt that Government policy was to encourage universities to make money (reinforced when metrics are used which measure the income universities receive from collaborative research – though this seems to be part of a wider problem of how to develop appropriate indicators and metrics), but also made the point that no Research Councils use university income metrics in allocating money, which supports the case that the main aim is to increase public good. Some participants felt that the main function of universities is to publish results to ensure the advancement of science and not to undertake research with the primary aim of raising revenue for business. In one session, all of the university representatives present were asked if they agreed that public money support is to promote public good and wider exploitation rather than raising revenue for universities and all of them agreed. However, some participants believed that there may be some confusion over this issue, and possibly a discrepancy between a recommendation within the Lambert report and Government policy. Several participants suggested that it would be useful to have a clear statement from Government (and Research Councils) that they want universities to collaborate with business to maximise economic impact rather than to make money for the university.

HEIF was given as an example where government money is used to incentivise and encourage relationship with business. It was accepted that whilst the main driver is to achieve greater interaction with business and not to increase revenues for universities, there may be some misinterpretations, arising partly from the fact that income is used as a measurement for allocation of HEIF. One participant claimed that they are not being measured on the outcomes they were asked to achieve (such as industry links), but on income that is generated. It was suggested that this may be a consequence of using proxies to measure difficult things rather than unclear policy, but again clarification may be useful.

The incentives mechanisms for individuals involved in projects also need to be carefully considered as they can have a strong influence on behaviour too. For example, one business explained that in a negotiation with an RCO, it was discovered that the salary of the RCO was dependent on the IP agreements they were able to secure for the university.

Some university representatives agreed that there is a pressure on them from senior management to build up revenue streams as they are compared to other universities in terms of their licensing income. This therefore influences their position in IP negotiations.

Participants explained that some universities seem to feel that there is pressure on them to keep hold of IP from Research Councils, although this may arise from a misunderstanding of the Research Councils guidance that they are responsible to ensure exploitation of any IP resulting from research they help to fund.

It had been observed by some participants that universities feel under more pressure when funding research with public money, and as a consequence believe that the deal should not be as beneficial for the company. Two elements of the guidelines issued by one of the Research Councils in particular were cited. The first was that exploitation of research is the responsibility of the research organisation, which is unclear as responsibility does not necessarily equate to ownership. The second is that the university should receive a suitable return as a consequence of successful exploitation of IP. Again, this may be due to a misunderstanding in the spirit of the guideline, and that the return in question need not be a financial one. It was generally felt that universities weren't using the above guidelines as a negotiating ploy, but were genuinely concerned that they were adhering to the rules and didn't want to 'give away too much'. Some participants therefore would welcome clarification of these guidelines.

One participant also had experience of an RDA desiring a 50/50 share of IP which caused additional complications in negotiations. Other participants in the same session had not experienced this with RDAs.

The question of RAE as a driver was raised, as it was suggested that a successful collaboration relies on the motivation of the researcher, which in turn is influenced by their desire to achieve an excellent RAE assessment. RAE is seen to be a critical determinant of reward and acceptance within the institution, yet it is felt by some that researchers in the UK are not rewarded or respected if they decide to engage with industry as opposed to being completely focused on research. It was also suggested that RAE can

encourage a silo mentality which is not helpful considering the increasing multidisciplinary nature of research. However, one participant suggested that researchers still behave in the same way in other parts of the world without RAE so this may not actually be a factor.

Another key driver which emerged from the sessions was FEC. One university participant felt that FEC and the cost of research is a bigger impediment than IP in setting up collaborative research projects. It was felt by some that it was not always understood that cost and price are different. Pricing has become more of an issue since the introduction of FEC, but it has also been useful in negotiations in terms of fully understanding costs. One university explained that whilst recognising that FEC doesn't strictly feed through to pricing, if 100% FEC is not charged for then there is a shortfall there which needs to be made up from other sources. Another consequence observed is that when universities understand that they are not getting paid the FEC of research, they desire more rights and ownership of resulting IP. One university explained that they don't necessarily expect a substantial revenue stream from research collaborations, but do want to see short term revenue from business paying the full cost of research.

Some universities, it was claimed, ask for the FEC of the research to be paid as they believe it is required by Government. This may be an area which needs clarification.

A consequence of FEC, according to some businesses, is that they may be driven to collaborating with universities outside of the UK, especially in an environment with a strong pound. Others said that the number of formal research collaborations has declined dramatically over the last year as a consequence of FEC. Companies generally don't want to pay FEC and academics feel they won't be able to negotiate the FEC, so in place of collaborative research one participant claimed they have seen an increase in studentships and other perceived lower value collaborations. Another participant believed that the full impact of FEC on research collaborations is yet to come to light, due in part to the time lag in collecting relevant metrics, and also due to the metrics employed currently.

One participant suggested that tax and VAT could be used as a driver to encourage collaborations between business and universities. He explained that if a business was to donate a piece of equipment towards a collaborative project, then the university is expected to pay VAT on it, which can lead to practical impediments to collaborations if they don't have the cash available to cover this. The general feeling from this university representative was that tax has become more complicated for universities and companies dealing with them, and that it actually costs a company to collaborate. When decisions are being taken by the Finance departments of large companies, this will negatively influence any decisions to form collaborations.

Pro-forma Agreements (e.g. Lambert Agreements)

- *Do you use Lambert agreements?*
 - *if yes, do they help solve these problems;*
 - *if no why don't you use?*
- *If you have used the Lambert agreements, have you used them exactly as drafted or have you or the University sought to modify them in any way?*
- *Would equivalents of the Lambert agreements for other types of collaborations, such as studentships, be of any value?*

There were a number of participants that used Lambert agreements in some form, but they were generally modified in some way. Some participants explained that they were a useful starting point for negotiations, and one participant said there can sometimes be an issue over which version to use. An industry participant said, however, that their main concern was that they can deal with someone with good business acumen and not someone who will just try to fill in the blanks on a model agreement. For that reason, they prefer to look at the research first and then draft the agreement around that. If used appropriately though, model agreements could be a good thing, they added.

A question which was raised was how prevalent Lambert agreements are. One business revealed they had a number of collaborations set-up using the agreements, but had no data of their more widespread use across the country. They went on to explain that they were in the process of translating the Lambert agreements into Chinese for use abroad, and another company revealed that Denmark is considering following the same model, which suggests that there is recognition of the value of the agreements. It was

suggested that it may be useful to examine more systematically what the uptake of these agreements has been, and possibly for AURIL to do a survey on the use of Lambert agreements. Participants also believed it would be useful to have case studies and examples of where Lambert agreements have worked and facilitated agreements, both to raise the profile of the agreements and to share best practice.

One suggestion put forward to raise the profile of these agreements further, and potentially use them as a tool by which universities could market themselves to businesses (similar to a Kitemark). This would show that the university in question used a set of standard agreements which would not require a lot of input and legal wrangling upfront. Not only could this aid working with SMEs, but it could also attract inward investment.

A number of those present agreed that the whilst the principle of the Lambert agreements is a good one, it would be useful to have a wider range of tailored versions which are more fit for purpose in dealing with the varying natures of industry sectors. One participant suggested that as there is no such thing as a model, one-size-fits-all contract, a pick and mix type approach may work better. A university also suggested that it may be useful to have guidelines for how a group of universities could use a single agreement, given the increasing number of multi-partner collaborations. It was noted that the Lambert groups are working on new model agreements for multi-party collaborations.

Within the aerospace industry, the Aerospace Technical Steering Group (involving both universities and business) has already attempted to develop model agreements for multi-company / multi-business collaborations, but have yet to reach agreement on these. The sticking points for universities, according to an industry representative, were around publication, IP and confidentiality issues. A disconnect appears to be between what aerospace consider to be confidential and what universities want to publish. The industry representative was interested to find out if other areas and groups experienced the same issue.

There seemed to be a consensus that a lot of negotiations, come down to good relationships, dialogue and whether both sides understand where other party is coming from, in which case sticking to prescribed agreement not the most constructive way. Another potential issue with model agreements raised is that cultural differences could hinder their use. A participant explained that in their experience US companies don't understand template agreements.

One participant explained that they have found that not all Government departments use Lambert agreements, for example DEFRA.

Research Contract Offices

- *For business:*
 - *Do you have experience where the academic and the business partner agree terms, but it is then held up / varied by the RCO?*
- *For universities:*
 - *What influence / oversight do senior managers have over RCOs involvement in specific deals?*
 - *Do you think RCOs fully consider the longer term strategic implications of a particular negotiation (repeat custom etc).*
- *For all:*
 - *The increase in 3rd stream funding (and training programmes) should have increased professionalism in this function – what is your view?*

A number of participants explained that they employ a triangular hierarchy relationship management model. At the top level are long-term, strategic partnerships with influence at the main board level. The next level consists of operational partnerships with a larger number of partners, but not really touching the strategy of the institution. Finally, the lowest level consists of a much greater number of transactional partners, with much simpler interactions such as through courses and events.

The importance of building constructive relationships was stressed a number of times throughout the sessions, from both university and business representatives. It was felt that the most successful and easily negotiated agreements arose through these relationships, as opposed to through RCOs. The level

of sophistication of the interaction increases as you move further up the levels towards a strategic relationship, with much more give and take from both sides compared to a lower, transactional level agreement. Problems therefore generally occur at these lower levels, therefore there is a need to either improve operational and transactional relationships, or to move more things to a strategic level.

There was a feeling from a number of participants that there can often be a monoculture within RCOs, with a lack of understanding of the needs of different industries and their key drivers. One participant described their own RCO as lacking sophistication, and trying to use a one-size-fits-all approach. Another, also from a university, felt that they sometimes got in the way, didn't add value, reduced the tempo of the negotiation and created complexities. A few participants added that engaging with RCOs can result in time consuming negotiations and that there is sometimes confusion over responsibilities between academics and RCOs.

A representative from industry explained that in their experience, if the collaboration begins as a single academic who goes to their RCO then the negotiation ends up as a clause by clause ordeal which "is a disaster". By going in at a higher level, this can be avoided.

One university explained how they have restructured and now much of their face-to-face interactions are carried out by the Principal Investigator (PI) on the research project, rather than an RCO, but supported by a contracts team and the business development team if necessary. The Head of the School in question then makes the final business decision, which was felt to be a better way than leaving things to the RCO.

Another university explained how they had deliberately separated the function of technology transfer and commercialisation of IP from the research services contract support and believed that the RCO should be in the loop but not driving the details, which should be done by the academic.

An industry representative found that they often had regular conversation with RCOs around levels of confidentiality, which prolongs negotiations. In situations where confidentiality is required, there is a need to define clearly the boundaries, but also to ensure that research is not hindered. When it is not required then the situation should not be complicated by making it so.

The function of the RCO was debated within the groups, with some believing that RCOs should act as a support function rather than a control function. Others believe that some level of control is required, but in the area of managing lines of communications, such as a relationship manager to act between the academic and the person 'dotting the i's and crossing the t's' (normally within the RCO). An industry representative explained that they normally initiate a project with academics, who are excellent at technical matters but regard legal and commercial issues as 'admin', whilst these are actually important in their own right, which reinforces the need for a support function to focus on these issues.

Some participants did recognise that universities are becoming far more professional in the way RCOs handle negotiations and that thanks to HEIF money they have been able to build up professional negotiations teams.

ANNEX D

BENEFITS TO UNIVERSITIES OF COLLABORATIVE RESEARCH

Extract from European Commission staff paper: “Voluntary guidelines for universities and other research institutions to improve their links with industry across Europe”, COM(2007) 182 final

“2.1. Benefits to research institutions

Benefits to research institutions resulting from knowledge transfer to industry are not – and should not be expected to be – primarily financial, even though any revenues resulting from knowledge transfer can help fund additional R&D activities, in addition to the knowledge transfer activities themselves. Instead, the main benefits are indirect and should be considered in the longer term. They include for instance:

- The development of mutual trust between the research institution and industry, beneficial to the establishment of long-term strategic partnerships (as opposed to one-off contracts);
- The enhancement of research institutions research activities (access to state of the art industrial equipment, improving research institution project management skills, complementing the research institution competence base by new skills and techniques developed in industry, improved understanding of market needs and of industry problems);
- Gaining status and prestige (resulting from successful partnerships and products);
- The enhancement of research institutions teaching activities (involvement of industry-based lecturers, enrichment of teaching contents and materials with practical examples, learning how to apply skills and knowledge to solve real business problems ...);
- The identification of potential new clients or partners for further research;
- Attracting, retaining and motivating good scientists interested in entrepreneurial aspects or in new professional career opportunities;
- Contributing to public authorities better recognising the socio-economic relevance of publicly-funded research, potentially leading to increased funding thereof. These benefits will have further positive consequences, such as facilitating exchanges of staff between the research institution and industry, or the hiring of new graduates from the research institution by industry.”

ANNEX E

Nine Points to Consider in Licensing University Technology

Summary of the 'White Paper', *"In the Public Interest: Nine Points to Consider in Licensing University Technology"*⁷. This paper was written on behalf of the following American research universities and institutions: Stanford, California Institute of Technology, Cornell, Harvard, Massachusetts Institute of Technology, the University of California system, the Chicago and Urbana-Champaign campuses of the University of Illinois, University of Washington, Wisconsin Alumni Research Foundation and Yale, the Association of American Medical Colleges.

1. Universities should reserve the right to practice licensed inventions, and to allow other nonprofit and governmental organizations to do so.

The report says that institutions should clearly articulate the scope of reserved rights.

2. Exclusive licenses should be structured in a manner that encourages technology development and use.

Technology transfer offices should avoid overly broad exclusive rights agreements that stifle future research and "diligent" development of the technology.

3. Strive to minimize the licensing of "future improvements."

Colleges should aim to avoid "enslaving" a faculty member's research program to a company, thus thwarting his or her ability to receive corporate and other research funding and work with scientists employed by other companies that don't hold the license.

4. Universities should anticipate and help to manage technology transfer related conflicts of interest.

For instance, licensing a startup founded by faculty, students or other university inventors can be problematic.

5. Ensure broad access to research tools.

6. Enforcement action should be carefully considered.

Universities should keep in mind the primary mission of using patents to promote technology improvements for the benefit of society when considering enforcement of intellectual property. Litigation should be a last resort for resolving disputes. "It reflects poorly on universities to be involved in "nuisance suits," the report says.

7. Be mindful of export regulations.

8. Be mindful of the implications of working with patent aggregators.

The paper notes that as most university-owned patents are unlicensed, technology transfer officers are approached by those who want to commercialize it through further licenses.

9. Consider including provisions that address unmet needs, such as those of neglected patient populations or geographic areas, giving particular attention to improved therapeutics, diagnostics and agricultural technologies for the developing world.

⁷ This summary includes some additional commentary and is taken from a news article: <http://www.insidehighered.com/news/2007/03/07/tech> The original report can be found at: <http://news-service.stanford.edu/news/2007/march7/gifs/whitepaper.pdf>