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## Contents

Summary and Major Recommendations ........................................................................................................... 3  
Section 1: The review process............................................................................................................................. 6  
Section 2: Stronger academic-led culture of knowledge exchange, innovation and enterprise/entrepreneurship ................................................................................................................................. 7  
Section 3: Greater cohesion and integration across different activities, and opportunities for more cross-disciplinary initiatives and activities................................................................................................. 8 
Section 4: Better communication of the University’s innovation strategy and impact ........................................... 10  
Section 5: Enhanced intellectual property exploitation and impact ........................................................................... 11  
Section 6: Greater impact from and recognition for public engagement in research .................................................. 16  
Section 7: Making a greater impact in Oxfordshire and in ‘the golden triangle’ ...................................................... 17  
ANNEXES .................................................................................................................................................... 19  
    Full List of Recommendations .......................................................................................................................... 20  
    Oxford University Innovation Working Group Terms of Reference and Membership .............................. 24  
    Colleagues who met with the Working Group, 24-25 April 2014 ................................................................. 26  
    Submissions .................................................................................................................................................... 28  
    Documents Provided to the Working Group .................................................................................................. 30  
    Extract from Working Group Discussion Paper .............................................................................................. 31  
REFERENCES ........................................................................................................................................... 33
Summary and Major Recommendations

It is strategically important for the University of Oxford to be (and be seen to be) a global leader in knowledge exchange, innovation and entrepreneurship. This is a key route by which the fruits of research and teaching contribute to the good of the nation and the world. A vibrant knowledge exchange and innovation culture will contribute to sustained research and teaching excellence by helping to attract the best and most creative students, academics and researchers from around the world. It will also help to secure research and research-related funding from public funders, including the Research Councils, the EU, the NIHR, HEFCE, charities and business. Engagement with businesses and other organisations can help to identify interesting problems and stimulate high quality research. Education and training in entrepreneurship to help develop skills in turning ideas into action, including new or improved products and services, is increasingly demanded and valued.

Although there are many good stories of activity and success, knowledge exchange and innovation are not as embedded in the Oxford culture as they need to be. More should be done to encourage and celebrate entrepreneurial learning and activity, knowledge exchange and public engagement. All parts of the University should, as a matter of principle, make every effort to maximise contributions to economic, social and cultural growth - this needs to become part of the academic culture of the University. There should be greater institutional recognition of contributions to the arts and society as well as economy and health care, more local academic champions of knowledge exchange and innovation and academics and researchers with relevant experience and interests willing to act as mentors or advisers. Oxford has, as one of the world’s leading universities, an enormous responsibility to ensure its intellectual resources are used for national and international benefit. The University needs to be as ambitious in this domain as it is in relation to excellence in research and teaching. Its activities and achievements in ‘Wider Engagement’ will be founded on that excellence.

Every opportunity should be taken to foster cross-division and cross-disciplinary activities as innovation so often occurs at the intersections of disciplines.

There should be much greater emphasis on enterprise and entrepreneurship education, especially for students and early career researchers who are the entrepreneurs of the future. The provision of skills training and experiential learning needs to more joined-up, accessible and visible across the institution.

The University needs to capitalise upon and help to further develop the regional research and innovation eco-system, which includes a unique grouping of ‘big science’ research facilities and around 1500 high technology firms in Oxfordshire. The relations between a strong technology cluster and the science, business education and other activities in the University can be powerfully synergistic. The University is now more strongly engaged than ever before with Harwell Oxford, Culham Science Centre and the Local Enterprise Partnership (LEP) but more can be done to realise fully the growth potential.

The University should review its strategy in relation to generating income from intellectual property. The University’s model for technology transfer focusses on the direct financial benefit from licences and spin-outs. Evidence suggests that the financial benefits from this are too unpredictable to be a major source of funding and that focussing on these metrics may on some occasions deflect attention away from longer term impact. This report suggests that the right balance needs to be found for this activity alongside other priorities; these include fostering entrepreneurship; building
strategic partnerships and collaborative research programs; demonstrating the role of the University in wider wealth creation; and securing philanthropic support, in the longer-term, from company founders.

Should the University decide to make changes to how it approaches technology transfer, this will have implications for what it asks of Isis Innovation Ltd and Oxford Spin-out Equity Management (OSEM); and for the way in which the University works with young businesses. The very successful history of Isis in technology transfer should be recognised and used as a foundation for any such changes.

The University needs to take a much more active role in the oversight of Isis and respond positively to the request from Isis for the University to clearly articulate its priorities. The University needs to take more advantage of the skills and experience in Isis and the external networks developed by Isis over the past 25 years. The Divisions and the Research Committee should be much more actively involved in helping Isis to develop its Five-Year Plans and in re-planning as needs and circumstances change. Isis should focus on its core strength in transferring technologies to create new enterprises or enhance existing businesses or services.

More effort should go into proof-of-concept work and incubation of businesses before they are spun out (with support from a much larger early seed fund); and a more flexible approach should be taken to the licensing of intellectual property. If that service model is pursued, the short-term financial gains from licensing would likely reduce. The University therefore should consider and develop a means to resource innovation and knowledge exchange activity in a long-term, sustainable and scalable manner.

University services to support research-related knowledge exchange and wider engagement need to be sustained, closely linked to or embedded within divisions and departments and better utilised. There are opportunities overall for more coordination; cross-divisional activities; joint planning of new roles; agreeing an overall strategy for links with business; and much better marketing of research impact.

**Major Recommendations**

1. A series of measures should be taken to build a much stronger academic-led culture of knowledge exchange, innovation and entrepreneurship across the University. These include focussed academic leadership, mentoring and advisory roles, departmental and divisional planning designed to optimise the impact of research and celebration of achievement.

2. The University should make a clear, unequivocal commitment to enhance institutional leadership of and support for public engagement (i.e. engaging the public in and with the University’s research).

3. The PVC (Research) and PVC (Education) together with other Senior Officers should examine what is required in terms of enterprise and entrepreneurship education, both in formal and extra-curricular programmes, determining whether the current provision meets these needs or not, and working with Divisions, Continuing Education, Isis and the Careers Service to develop new educational initiatives where required.
4. The PVC (Research) should work with the Knowledge Exchange and Impact Sub-Committee (KEISC) to identify where more joint academic planning and coordination of activities (in particular cross-disciplinary and cross-Division initiatives) would enhance knowledge exchange, innovation and entrepreneurship, and with senior managers and administrators to ensure the best possible levels of support.

5. The Board of Isis should ensure that Isis is more directly responsive to the needs of the academic divisions, and is positioned first and foremost as a service to academics and researchers and not a profit centre. Firmer connections would be established by developing Isis’ plans in direct consultation with the divisions, and with Research Committee, and by embedding Isis staff closer to research activity who are empowered to make decisions on optimising the practical use and exploitation of intellectual property. The role and remit of Isis Enterprise and the locus of services provided by Oxford University Consulting (OUC) should be examined.

6. The Divisions should work with Isis, the Development Office and Oxford Spin-Out Equity Management (OSEM) to ensure very high priority is given to attracting significant funds for proof of concept work, incubation and strategic investment in the University’s spinouts.

7. The PVC (Research) should work with other Senior Officers, the Finance Division and Isis to identify and recommend to the Planning and Resource Allocation Committee (PRAC) a sustainable funding model for growing innovation activity.

8. University Senior Officers should continue to focus on key strategic relationships and projects aimed at strengthening the regional research and innovation eco-system and facilitating researcher-led initiatives with business, the major science facilities and other organisations.

9. The PVC (Research) should continue to ensure the University’s involvement with the Oxfordshire Local Enterprise Partnership (LEP) and the importance and mutual benefits arising are clearly communicated within the University.

10. Estates strategy and planning should provide spaces for knowledge exchange and innovation activities, especially cross-department and, where appropriate, cross-division interaction and initiatives, and enable advisory and support services to be co-located and based as close as possible to the academic enterprise.

11. The PVC (Research) should work with the Divisions and Services to develop a Communications Strategy for Innovation, Impact and Entrepreneurship which addresses key internal and especially external constituencies, with the objective of improving the visibility of all of the University’s achievements in knowledge exchange and innovation.

The full list of recommendations is provided in Annex 1.
Section 1: The review process

1.1 The Pro-Vice-Chancellor for Research, Academic Services and University Collections (the PVC(Research)) chaired this review on behalf of Council and its committees; specifically, in response to a request from the Planning and Resource Allocation Committee (PRAC) for a review of the structures supporting knowledge exchange; and for information for the Research Committee. (See Annex 1 for the Terms of Reference)

1.2 The Review Group (the Group) included four external members, from Stanford, Harvard and Cambridge Universities and from the national technology transfer body of Ireland; representatives from each of the four academic Divisions, a representative from the Knowledge Exchange and Impact Sub Committee (KEISC) of Research Committee, and one of Conference of College’s representatives on Research Committee. (See Annex 1)

1.3 A notice was sent to all departments inviting comments and a number of interested external parties were also invited to comment. Written submissions were received and consultation meetings with stakeholders were held. Isis Innovation (Isis) submitted a number of documents to the Group including a summary response to the key consultation questions. A full list of those contributing is attached in the Annexes. The Group is very grateful to all for their contribution.

1.5 The panel met three times over a six-week period. 28 people attended the sessions to give evidence and 9 others attended separate consultation meetings. External parties attending included stakeholders in local government, representatives from the Oxford Academic Health Sciences Network (AHSN) and external consultants in the field of knowledge exchange. University members attending included the Heads of Divisions or their nominees, the Director of Finance, the manager of the Begbroke Science Park, business development and knowledge exchange facilitators in the Academic Divisions, members of Research Services, and academic colleagues.

1.6 The group would like to thank Dr Glenn Swafford and his colleagues Dr Phil Clare, Ms Judith Finch and Ms Carolyn McKee for their help in advising and briefing the group and facilitating its work.

1.7 This report examines key issues and actions designed to assist the University to achieve the potential for:

1. Stronger academic-led culture of knowledge exchange, innovation and enterprise/entrepreneurship
2. Greater cohesion and integration across different activities, and opportunities for more cross-disciplinary initiatives and activities at scale
3. Better communication of the University’s innovation strategy and impact
4. Enhanced intellectual property exploitation and impact
5. Greater impact from, and recognition for public engagement
6. Greater impact in Oxfordshire and in ‘the golden triangle’
Section 2: Stronger academic-led culture of knowledge exchange, innovation and enterprise/entrepreneurship

2.1 The University of Oxford Strategic Plan 2013-2018 features a strong commitment to ‘Wider Engagement’ as one of three over-arching academic objectives alongside ‘Research’ and ‘Education.’ The Plan observes that ‘Enterprise and innovation are fundamental to Oxford’s continuing research success’ and includes commitments to ‘foster creative, entrepreneurial activity by our staff and students’, ‘stimulate collaboration with research users to increase uptake of research outputs’, ‘inform and advise a wide range of organisations’ and promote ‘more interaction with business and industry, including through continuing professional development, collaborative research, translational activities, consulting, licensing, spin-out companies, and commercial ventures.’ However, the Group heard that for many people there is (still) an uncertain place for this activity within the predominant academic culture at Oxford. Is there a climate of enterprise and innovation? (‘A buzz not only about research but about its impact’ as one person put it).

2.2 To help embed knowledge exchange, innovation and enterprise/entrepreneurship, there need to be more local academic champions and academics and researchers with relevant experience and interests identified to act as mentors and advisers, indeed as ‘role models’ for their colleagues; supported by alumni and friends of the University informally and by honorary and visiting appointments. (The Working Group was very impressed, for example, by what has been achieved since the first KE Academic Champion in the Humanities and the first Humanities KE Fellows were appointed). As Gümüsay and Bohne’s ethnographic research at Oxford shows, networks and other activities to bring together academic entrepreneurs and nascent academic entrepreneurs are needed.

2.3 The Group discussed the role of senior leadership. It heard from Harvard’s Vice-Provost for Research that ‘the cultural issues at Oxford are the same ones we face at Harvard ... knowledge exchange and entrepreneurship has to be continually promoted.’ There needs to be more visible ownership (both real and symbolic) and focussed academic leadership for the knowledge exchange and impact agenda at Oxford. Potential actions could include revising the remit of the PVC (Research) to encompass Research and Innovation and each of the Academic Divisions, ASUC and Continuing Education identifying at least one senior academic leader with responsibility for knowledge exchange and impact to form a small advisory network with the PVC (Research). The terms of reference, names and membership of relevant committees and subcommittees, such as the Research Committee and its Knowledge Exchange and Impact Sub-Committee (KEISC), should be reviewed to ensure that knowledge exchange, innovation and entrepreneurship are clearly addressed and have appropriate expertise.

2.4 The implications of KE on an individual’s career were discussed. The Group heard that while it was acceptable to take time out for childcare or for an academic sabbatical, it often felt less acceptable to take time out to run a company, have an industry placement, take part in ‘meet the politicians’ events or provide advice to a local SME. This should be addressed. Discussions should be held about knowledge exchange, innovation and entrepreneurship forming part of academic selection, contracts, time/workload allocation and, potentially, promotion criteria.
(though the latter is not typical in the top US universities, including Stanford, and UK universities).

2.5 The University should consider creating a University of Oxford Knowledge Exchange Awards Scheme which recognises and celebrates excellence and commitment in knowledge exchange activities.

2.6 There was quite a strong plea from many academics to have more advice to hand about ways to start up or contribute to new enterprises and new ventures in general. The working group heard of two very interesting initiatives in this area at Harvard: the Harvard Innovation Lab (‘a place where people go for advice and inspiration ... to connect’, which the current Dean of the Said Business School helped to found) and Entrepreneurs in Residence (EiRs) helping students and staff make the most of their ideas and turn breakthroughs into businesses. These are models that Oxford may wish to explore.

2.7 The University of Oxford should work systematically to achieve the following aspirations

(i) To be part of and be a major contributor to a region world-renowned as a place of innovation and enterprise, with a strong, vibrant knowledge-based economy.

(ii) To be recognised internationally (and especially by researchers and prospective students) as ‘a hot bed’ of ideas and knowledge exchange with a major commitment to entrepreneurship and impact, attracting like-minded students, staff, collaborators and supporters/investors.

(iii) To generate significant economic and other benefits from its intellectual assets and its role in the innovation eco-system.

Section 3: Greater cohesion and integration across different activities, and opportunities for more cross-disciplinary initiatives and activities

3.1 The Group heard evidence from the Divisions, ASUC and Continuing Education that they wished to do much more to share experiences and expertise, including on how to plan, support, evaluate and celebrate knowledge exchange, impact and enterprise; and to collaborate in linking with key external organisations. Every opportunity should be taken to foster such cross-division and cross-disciplinary activities, especially as innovation so often occurs at the intersections not only of disciplines but also of cultures, organisations and sectors of the economy. Targeted events across two or more divisions, or University-wide, can help to add scale, cost-efficiencies, visibility and impact.

3.2 Cross-department and cross-division academic networks can play a key role in this agenda. In their submission to the Working Group, the ONE networks (see Box 1) illustrated how they have facilitated workshops, seminar series, showcase events and funding proposals and have helped to forge new links with government, business and academic institutions, nationally and internationally. The network websites seek to provide an inclusive overview of relevant Oxford research. There are many such networks at Oxford. These networks typically need relatively
small amounts of on-going funding for coordination activities; support from the participating departments/divisions for the appointment of an academic convenor (who is a senior member of academic staff who can convene academics from across the University and is in a position to represent the network’s activities to external partners in business and government) succession arrangements as these roles rotate; and appropriate formal recognition. The Group felt that there was potential for the Divisions to further nurture and support these academic networks.

**BOX 1. The Oxford Networks for the Environment**

The Oxford Networks for the Environment are five research networks that have come into being to promote cross-departmental communication and collaboration within Oxford University, and between the University and its partners in government and business. ONE mobilises the University's expertise in science, technology, business, and society. They enable Oxford to find solutions to the complex, converging challenges of energy, water, and food security, climate change and threats to biodiversity.

The networks operate in different ways, with a variety of funding mechanisms, including the Oxford Martin School and the John Fell fund ... Each network has governance arrangements involving senior academics from the relevant academic departments.

3.3 Relevant University bodies such as the Knowledge Exchange and Impact Sub-Committee (KEISC) or the linked groups who oversee the Impact Acceleration Accounts (or similar) from the Research Councils can also play a greater role in fostering cross-Divisional or University-wide plans and initiatives.

3.4 The Group heard that there was scope for the Museums/Collections to create and support opportunities across the University for public engagement and knowledge exchange. The Divisions, Continuing Education and ASUC should consider developing a three to five year plan of joint activities in this area.

3.5 The Group considered the status of entrepreneurship education for both students and staff, and for student engagement in entrepreneurship at Oxford.

3.6 As a QAA report (2012) noted, the call for a ‘greater emphasis on enterprise and entrepreneurship education is compelling. Driven by a need for flexibility and adaptability, the labour market requires graduates with enhanced skills who can think on their feet and be innovative in a global economic environment.’ The Wilson Review of University-Business Collaboration (2012) advocated embedding enterprise skills within an existing curriculum, ‘tutored by academic staff from that discipline who have enterprise mind sets and experience’, skills modules for early career researchers and well publicised support and advisory services.

3.7 The University currently has many offerings in this area (such as Oxford Entrepreneurs, the student society; the Shed; the Launchpad; and some division-based activities). However, there is no University-level strategy or single description of the extracurricular offerings. Provision of entrepreneurship skills training should be better coordinated, accessible and visible across the institution. An approach is needed which has clear goals, strong channels for publicity and an
evaluation plan, and which is scalable (whilst also taking into account disciplinary differences). The Group heard that more departments would like to include entrepreneurship in degree programmes but that curricula and timetables are already very crowded. It was advised that 1+1 programs, e.g. a Masters in Environmental Studies and an MBA, had potential to be extended, and noted that the Said Business School was planning to expand its activity in this area. It was suggested that the University should encourage more involvement from alumni and friends, including those overseas, in mentoring, educational programs and internships. The Kauffman Foundation study of the impact of MIT alumni highlighted the importance of educational programs and advisory services to the high number of entrepreneurs that MIT turns out™. Oxford should examine what is required in terms of enterprise and entrepreneurship education, both in the formal and extra-curricular programmes, set its goals and determine whether the current provision meets this need or not.

3.8 The Group heard evidence on the administration structures supporting knowledge exchange at Oxford. Research Services (including the KE & Impact Team), Legal Services, the Divisional Business Development Teams and the Divisional Knowledge Exchange Teams were all commended by key clients and their service partners. There are some good examples of co-ordination across service unit boundaries. Partnerships between the Research Services and the MPLS and MSD Business Development Teams seemed particularly strong, helped by proximity or co-location, as was the link between Humanities Knowledge Exchange and Research Services. The partnership between Isis and Research Services, at all levels, and would be further enhanced if there was more space for co-location of Research Services staff and their Isis counterparts. Research Services and Isis should work with Divisional Offices to plan for the future co-location of services in close proximity to academic activity. This should be given a high priority in Divisional and Estates Services’ planning. The importance of the Oxford Research Facilitators Network and the Knowledge Exchange Network and the sharing of information between the MPLS and MSD Business Development Teams were highlighted. Every effort needs to be made to achieve ‘joined-up thinking’ and ‘joined-up action’ of this kind. Proposed changes to services and service staffing should be discussed between relevant areas. Local administrators need to take an active part in Divisional and University-wide networks. ‘Central’ university-wide coordination services needed to be adequately resourced. Customer feedback should be encouraged and acted upon. If, as some submissions suggested, there is lack of clarity, gaps or duplication in service provision, these points need to be taken up directly with the relevant areas.

Section 4: Better communication of the University’s innovation strategy and impact

4.1 The need for more internal communication about the ‘who, what, where, why and how’ of knowledge exchange, innovation, enterprise and public engagement is tied up with earlier observations about culture, advocacy and celebration of participation and success and the importance of these activities to the University. Funding for research and research training will increasingly depend on a commitment to knowledge exchange and impact and to evidence of success. Science and research funding from UK governments has been largely insulated from cuts since the economic collapse in 2008 because of the belief that UK universities, and UK
research more generally, will help fuel economic growth and also social and cultural
development. Very high expectations are being placed on UK HEIs and on their academics and
researchers. In Europe, similarly, the European Commission positioned Horizon 2020 (the
successor to the Seventh Framework Programme for Research, FP7) to be about achieving
'smart, sustainable and inclusive growth and jobs' by 'coupling research and innovation'
emphasising 'excellent science, industrial leadership and tackling societal challenges.' An
emphasis on realising impact from translational research and development/innovation is an
important cultural shift that needs to take place not only for the reasons of fiscal challenge,
but also for the effective realization of the University’s strategy.

4.2 Given the importance of the impact agenda, the Research Committee needs to give academic
leadership both to internal communications and to a much a much stronger, coordinated
external marketing campaign. That campaign should project Oxford as a leader in knowledge
exchange, innovation, enterprise and public engagement and help attract new potential
collaborators and supporters. The Oxford brand needs to include all these elements. The
Group heard of or saw some good external communication initiatives, including Oxford Impacts
(leaflets, videos and web sites). But knowledge exchange, innovation, enterprise and
public engagement must now feature more strongly in the UAS Research Communications
Strategy developed by Public Affairs and Research Services and endorsed by the Research
Committee. That Strategy should be broadened to include the Divisions, Continuing Education
and ASUC. The new Partnerships web site - http://partnership.ox.ac.uk/ - needs to be better
promoted and evaluated. The PVC (Research) and the Registrar together with other Senior
Officers and the management team at Isis should review which communication activities by
Isis should in future form part of the University’s program and what branding strategy should
be used. The Group heard that UCL and the University of Cambridge were among the national
benchmarks for the effective management of reputation around knowledge exchange and
innovation and Oxford should look at what it can learn from them.

Section 5: Enhanced intellectual property exploitation and impact

5.1 The Group sought and received extensive evidence on Oxford’s approach to intellectual
property (IP) exploitation, including from the Divisions, Isis, OSEM, staff who had licensed
technology or created companies, investors and actual or potential IP licensees. Six key issues
emerged.

Issue 1: Income and impact

5.2 ‘Income versus impact’ became the debate shorthand. [Isis had stated that ‘[it] requires clarity
from the University on what the University wants from Isis on the balance between optimising
for ‘income’ versus ‘impact.’ This influences how we do things’]. That dichotomy will often be
false and in many instances the University can do both. However on those occasions when
there is a choice to be made between maximising income from IP and maximising impact,
then the latter objective deserves greater emphasis. The Academic Divisions were clear in
their advice to the Group: IF there has to be a trade-off between (a) making money and (b)
seeing a technology readily transferred to a third party well placed to optimise the inventive
impact or a long-term strategic relationship for the University being built, then (b) should always prevail.

5.3 The evidence suggests that the financial benefits from licences and spin-outs are too unpredictable to represent a steady stream of income for universities and whilst one always hopes for ‘a blockbuster’ which brings in significant revenue, these are rare. Reflecting on the situation at Stanford, historian Timothy Lenoir argued that the vigorous technology licensing program there is not about commercial revenue; rather ‘interaction with industry produces cutting edge science that is not only economically relevant but enhances Stanford researchers’ competitive edge in winning federal funding, the main plum in the game.’ Here at Oxford the right balance needs to be found for income generation from IP exploitation alongside the key strategic priorities of fostering entrepreneurship; building strategic partnerships and collaborative research programs; demonstrating the role of the University in wider wealth creation; and securing philanthropic support, in the longer-term, from company founders.

5.4 Current policy and related settings do create points of tension from time to time. For example, Isis Technology Transfer has an incentive to optimise royalty income from licenses as this is used as a key performance indicator (and it distributes normally 70% of that income to parts of the University and uses 30% to support its operating costs). One colleague captured a sentiment expressed by several academics and researchers:

> The setting of (any) Isis revenue targets skews its focus on to getting the payment for IP up at all cost to hit financial targets: at cost of syphoning money out of companies just when they have least; at cost of getting the deal done regardless of longer term position; at the cost of not valuing ideas and opportunities small in value (little or no IP return) yet large in ambition and radical in nature.

5.5 With spinouts, Isis operates under the University’s guideline of normally a 50/50 University-founder inventor equity split but this can be a point of debate/dispute. The Group supports the recommendation by Isis that there should be ‘increased flexibility with clearer guidelines to give an increased understanding of where there is flexibility, allowing an agreement on equity sharing to be reached much more quickly than is currently possible.’ Group members from Harvard and Stanford observed that if you negotiate University/founder shares, the University or the technology transfer office (TTO) ‘always loses.’ There are so many negative emotions. At Harvard for example ‘the University takes 5% and you go in peace.’

5.6 At both Harvard and Stanford there is flexibility around licensing deals and equity in spin-outs. Both universities look downstream at the benefits of the technology, positive internal news and good PR externally, and for donations and other support later on from staff, students and alumni. There is not the pressure on the TTO to cover its cost as the expense of that goodwill. Equally at MIT the TTO is squarely positioned as a service not as a profit centre.

Issue 2: Isis and OSEM

5.7 The second issue relates to the University interest in both licencing IP and in growing companies. There can be conflicts between these two objectives and challenges for Isis managing the licence and the OSEM managing the equity. It is important that Isis and OSEM work closely to ensure optimal exploitation and draw on their collective experience and networks.
5.8 External parties seemed to be confused about the roles of Isis and OSEM in spin-outs and critical of what they saw as a lack of continuity and interest in those spin-outs. Some talked of being expected to deal with a whole new set of people (from OSEM) after many months, often years, of building relations with Isis. Isis was on occasions criticised for what was seen as a lack of long-term interest, in spin-outs, though this may be a natural result of the new role for OSEM. Isis and OSEM have quite different views on the current situation and future directions. These matters need to be addressed by the University.

**Issue 3: Seed and investment funds**

5.9 The third issue was about the need to support development before license or spin-out in order to realise the full value and impact of the IP. It is vital that efforts continue to grow the funds available to (a) support very early stage technologies and proof-of-concept in-house and de-risk potential spin-outs and (b) tactically invest in University spin-outs. The Group was advised that at Harvard the fund-raising push in this area has been led by the President, the Provost, the Vice-Provost (Research), the faculty and the Development Office. It was considered that Oxford should seek to build a University-level fund for Knowledge and Innovation activities analogous to the OUP John Fell Fund for Research in scale and prestige.

**Issue 4: Isis, the Divisions and the University – governance and partnership**

5.10 The fourth issue relates to the role and thus the funding and business models for Isis.

5.11 The Group sought comments on the remit of Isis, noting especially that Isis had asked for guidance on its priorities.

5.12 Isis has been widely regarded as one of the leaders in Europe in technology transfer. During the financial year ending March 2014 Isis reached the milestones of its 100th spin-out and the 10th company formed in the Isis Software Incubator.

5.13 Overwhelmingly, the Divisions want Isis to focus on technology transfer, which they view as being a highly successful activity: they need and want to take more advantage of Isis’ expertise in technology transfer. All felt there is scope to do much more technology transfer. [Isis expressed a similar view – ‘Disclosure data shows areas where there should be more ... if Isis can add more value within individual cases then more disclosures can be converted into deals; and deals = technology transfer.’]

5.14 MPLS and MSD, as the two main clients of the Isis technology transfer service, argued the need for much closer links with Isis. The Divisions and their researchers want to see Isis staff embedded in Divisions alongside Research Services, with specialist dedicated staff based for significant periods each week in the major departments, rather than the current practice of visits or the limited hot-desking which Isis representatives described to the Group. There was a feeling that Isis needs to be better connected to the research base of the University. The Board of Isis must ensure that Isis is more directly responsive to the needs of the academic divisions, as a service to academics and researchers. Firmer connections could be established by Isis developing its Five-Year Plans in close and direct consultation with the Divisions, with those plans reviewed annually in discussions between the Divisions and Isis (and other relevant groups, e.g. Research Services), and by embedding Isis staff closer to research activity, with autonomy to make decisions on optimising the practical use and possible
financial exploitation of intellectual property. Research Committee drawing on specialist expertise should also be involved in articulating key priorities for Isis.

5.15 There was no support for asking Isis to take on a broader business liaison/business development function to build research collaboration and support for research – this was seen very strongly as the domain of the Divisions, with support from Research Services. The Divisions and their researchers want to see Isis management and staff focussed on technology transfer.

5.16 The Divisions raised the question of where Oxford University Consulting (OUC) is best located; it was suggested that staff from OUC might, space permitting, be co-located with Research Services’ Divisional teams and work more closely with Divisional Offices (this would help to develop services more attuned to the work within each Division and their objectives) or that OUC staff be invited to transfer across to work in the relevant Research Services’ team. These options need to be further considered.

5.17 Questions were also raised about selling services (e.g. time on machines, use of facilities, conducting analysis of materials, preparation of vaccines for clinical trials) and it was suggested that this was best handled by Divisions in consultation with Research Services.

5.18 Concerns were raised that Isis Enterprise, established in 2004 to sell Isis expertise in technology transfer to other universities, research institutes, governments, and companies had ventured into other unrelated consulting/development areas. Isis Enterprise should be focussed solely on sharing Isis expertise in technology transfer.

5. Alternative Models of innovation

5.15 The fifth issue was about alternative models for exploiting IP.

5.16 The Group heard that the Intellectual Property Advisory Group (IPAG) has been discussing cases where some University some researchers and research groups are proposing what they term ‘patent free’ approaches or exploring ‘open innovation.’ Questions were raised about

- When ‘open models’ are most appropriate (especially in relation to which sectors of the economy)
- How widely such models are properly understood (it was suggested for example that the very successful Structural Genomics Consortium (SGC) model, which is quite nuanced, can be misread by groups as somehow being ‘IP free’ or about ‘free IP’)
- The implications for departments, divisions and the central University if local decisions are made which, in effect, forego the possibility of a revenue stream from the sale or licensing of patented technology or which could limit potential up-front investment in return for a share of future commercialisation deals (such as the IP Group deal in Chemistry)
- The pathways for approval of any proposed variations which would affect the University’s normal IP position (see Box 2)

IPAG needs to continue to address these issues.
5.17 There are not only substantive but also marketing issues to be considered. The University needs to be, and be seen to be, flexible and innovative in the ways it approaches technology transfer. Those companies and regional groupings which made submissions to the Group generally saw Oxford as ‘rather old school’ (as one person put it) and inflexible in its view of IP. The Oxford Academic Health Sciences Network (AHSN) suggested this was particularly the case in relation to the NHS; arguing that the University needs to be more creative in how it seeks to translate research into improved patient care and health outcomes with the NHS, ‘explore new models of innovation’ and emphasise long-term partnerships. Members of the Medical Sciences Division also observed that often low cost (non-commercial) innovations can make a big difference in the NHS.

6. Sustainability

5.18 The sixth issue related to sustainability.

5.19 Should the University decide to make changes to how it approaches technology transfer, this will have implications for what it asks of Isis and OSEM and for their business and funding models. Short-term financial gains from licencing would likely reduce. The pipeline of spin-outs may change. The University therefore should consider and develop a means to resource innovation and knowledge-exchange activity in a long-term, sustainable and scalable manner.

5.20 The Science Divisions indicated they would be willing to help examine alternate models for funding technology transfer. It may be, for example, that the Divisions would prefer to fund Isis TT via a traditional service funding (JRAM, Type 123) model, with a larger fraction of returns coming to Divisions level for reinvestment in innovation. The University may wish to revisit the financial incentives for researchers to be involved in the spin-out process generally enhances the prospects of success and long-term impact. If Oxford revised the IP exploitation allocation formula from IP exploitation to include Divisions this may help departments and Divisions to enhance their encouragement and support for researchers to become involved in technology transfer. It is possible, though unlikely, that there may be additional government funding for technology transfer, beyond HEIF. The timescale for returns would need to be assessed, and metrics for those returns developed. It might be hoped that a rather different and more flexible approach to how the University views its IP as an asset may assist key
relationships and lead to other benefits, including more research collaboration and funding and goodwill from successful entrepreneurs. US experience suggests there is scope to harness significant support for some aspects of innovation and entrepreneurship from alumni and friends, longer-term; in particular funds for early stage proof-of-concept work.

Section 6: Greater impact from and recognition for public engagement in research

6.1 Public engagement involves both informing the wider public about research and its benefits and research being influenced by and involving the public. It is enacted by a diversity of activities, including:
1. Participating in festivals
2. Working with museums / galleries / science centres and other cultural venues
3. Creating opportunities for the public to inform the research questions being tackled
4. Researchers and public working together to inform policy
5. Presenting to the public (e.g. public lectures or talks)
6. Involving the public as researchers (e.g. web based experiments)
7. Engaging with young people to inspire them about research (e.g. workshops in schools)
8. Contributing to new media enabled discussion forums

6.2 The Concordat for Engaging the Public with Research drawn up by the funders of research in the UK and supported by numerous bodies, including Universities UK, The Russell Group, the Academy of Medical Sciences and the Academy of Social Sciences sets out clear expectations for research organisations, researcher managers and supporters and researchers themselves, ‘to strengthen existing good practice in public engagement by ensuring it is valued, recognised and supported.’ (See Box 3).

BOX 3. Concordat for Engaging the Public with Research

Key principles
1. UK research organisations have a strategic commitment to public engagement
2. Researchers are recognised and valued for their involvement with public engagement activities
3. Researchers are enabled to participate in public engagement activities through appropriate training, support and opportunities
4. The signatories and supporters of this Concordat will undertake regular reviews of their and the wider research sector’s progress in fostering public engagement across the UK

6.3 Institutional support for public engagement is crucial for accessing funding, including from the Research Councils and the Wellcome Trust.

6.4 The University should establish academic leadership and support structures for public engagement; such as a university lead and a network of academic advisers and “champions” and advisers, supported by a coordinator. One of the first tasks for this new network should be to review Oxford’s position in relation to the ‘Expectations of research organisations’ set out in the Concordat.
Section 7: Making a greater impact in Oxfordshire and in ‘the golden triangle’

7.1 The University needs to continue to look for ways to stimulate the regional research and innovation eco-system. It is very important for the University’s future that it is part of a strong and vibrant regional knowledge economy. Professor Sir John Bell provided a compelling view of the benefits of a large and successful technology cluster geographically associated with leading universities; ‘the relationship between the cluster and the science activities in the University as well as the Business School are powerfully synergistic.’

7.2 The University has been influential in placing ‘Innovation led business growth’ at the heart of the regional agenda. This emphasis has in turn resonated with Government which sees universities, and research-led innovation, as key contributors to economic growth. Through the Government’s City Deal programme, Oxfordshire has to date received support for planning and development, transport for innovation, locally responsive skills systems and four innovation hubs along Oxfordshire’s ‘knowledge spine’ at Harwell and Culham in the south to the life science BioEscalator in Oxford and the advanced engineering hub at Begbroke in the north.’ The Chairman and the CEO of the Oxfordshire Local Enterprise Partnership (LEP) commented there is ‘strong collaboration and engagement’ between the LEP and the University; research and knowledge exchange have been ‘recognised and embedded’ in the City Deal program; and ‘the University is part of a much stronger dialogue with government.’ The University is involved in putting forward proposals to the LEP and Government under the Oxfordshire Strategic Economic Plan. [The overall vision for the Oxfordshire Strategic Economic Plan is: “By 2030 Oxfordshire will be a vibrant, sustainable, inclusive world leading economy, driven by innovation, enterprise and research excellence.”xvii] Work is well underway to plan and build the BioEscalator at the Park Hospital site and the Innovation Accelerator at Begbroke Science Park (total government funding for these two projects is £15.9m).xviii

7.3 Advice to the Group emphasised that there is room for improving University links with businesses of all kinds in the region. The CEO of the SQW Group indicated (from his survey) that businesses are not clear about University motives; ‘there are very mixed opinions as to why the University of Oxford is engaging with business ... was it about making money from business ... about helping them ... about long-term links or short-term ones ... about impact for the REF or about economic impact?’xix The University needs to clearly project that its primary goal in developing business links is business growth and not generating revenue for itself. It was suggested in various submissions that ‘the University is a large and complex place for groups to navigate through’ and that ‘there is no easy way in.’

7.4 The Group was advised by Professor Alex Halliday, the Head of the MPLS Division, that his leadership team, including through the MPLS Impact and Innovation Committee, is seeking to increase two-way interactions, including though co-location of academic and industry researchers and bringing industry on to campus more often; the redevelopment of the Science Area (Parks Rd) and Begbroke Science Park offer some interesting possibilities. Professor Alastair Buchan, the Head of MSD, commented that he wishes to see the BioEscalator as ‘highly permeable’ and more generally to not have people ‘coccooned’; he would like to see
more two-way secondments, more visiting professorships and more offers to host proof-of-concept work with industry.

7.5 The Group would stress that business links (regional, national and international) are not a matter only for the Science Divisions. It heard that at the Divisional level, Humanities was systematically examining ways to work with business in terms of research and knowledge exchange. The Country Houses Project is an example of a project that operates on several levels, including an aim to encourage tourists to stay an extra day in Oxfordshire and increase tourism revenues. The Social Sciences Division is also capitalising on the fact that many of its staff are doing engaged research (where ‘knowledge exchange is part of the research process’) in order to foster stronger business links.

7.6 The University is investing in developing physical innovation centres and incubators alongside its provision for entrepreneurship training and mentoring. These include the new City Deal buildings (BioEscalator and Begbroke Accelerator), the Shed, the Isis Software Incubator and the Launchpad. Colleges are also investing in spaces for entrepreneurs, and other organisations in and around Oxford also run incubators and science parks. The University must ensure that as far as possible there is a clear strategy internally and at a regional level for future development of such facilities. The PVC (Research) should work with Divisions, departments and units running incubators and innovation centres that support start-up businesses (including the BioEscalator, Begbroke, Launchpad, Isis Software Incubator and SHED) to coordinate the development of the Collegiate University’s incubators, innovation centres and science parks in a connected way across the institution.
ANNEXES
ANNEX 1

Full List of Recommendations

1.0 A series of measures should be taken to build a much stronger academic-led culture of knowledge exchange, innovation and entrepreneurship across the University. These should include focused academic leadership, mentoring and advisory roles, celebration of achievement and departmental and divisional planning to optimise the impact of research.

1.1 Potential other actions could include revising the remit of the PVC (Research) to Pro Vice Chancellor (Research and Innovation) and each of the Academic Divisions, ASUC and Continuing Education identifying at least one senior academic leader with responsibility for knowledge exchange and impact to form a small advisory network with the PVC (Research). The terms of reference, names and membership of relevant committees and subcommittees, such as the Research Committee and its Knowledge Exchange and Impact Sub-Committee (KEIC), should be reviewed to ensure that knowledge exchange, innovation and entrepreneurship are clearly addressed and have appropriate expertise.

1.2 Discussions should be held about knowledge exchange, innovation and entrepreneurship forming part of academic selection, contracts, time/workload allocation and, potentially, promotion criteria.

1.3 The University should consider creating a Knowledge Exchange Awards Scheme which recognises and celebrates excellence and commitment in knowledge exchange activities.

2.0 The University should make a clear, unequivocal commitment to enhance institutional leadership of and support for public engagement (i.e. engaging the public in and with the University’s research).

2.1 The University should establish academic leadership and support structures for public engagement; such as a university lead and a network of academic advisers and “champions” and advisers, supported by a coordinator. One of the first tasks for this new network should be to review Oxford’s position in relation to the ‘Expectations of research organisations’ set out in the Concordat for Engaging the Public with Research.”

3.0 The PVC (Research) and PVC (Education) together with other Senior Officers should examine what is required in terms of enterprise and entrepreneurship education, both in formal and extra-curricular programmes, determining whether the current provision meets these needs or not, and working with divisions, Continuing Education, Isis and the Careers Service to develop new educational initiatives where required.

3.1 Provision of entrepreneurship skills training should be better coordinated, accessible and visible across the institution. An approach is needed which has clear goals, strong channels for publicity and an evaluation plan, and which is scalable (whilst also taking into account disciplinary differences).
4.0 The PVC (Research) should work with the Knowledge Exchange and Impact Sub-Committee (KEISC) to identify where more joint academic planning and coordination of activities (in particular tactical cross-disciplinary and cross-Division initiatives) would enhance knowledge exchange, innovation and entrepreneurship, and with senior managers and administrators to ensure the best possible levels of support.

4.1 Every opportunity should be taken to foster cross-division and cross-disciplinary activities especially as innovation so often occurs at the intersections not only of disciplines but also of cultures, organisations and sectors of the economy.

4.2 The Divisions should further nurture and support cross-department and cross-division academic networks (which e.g. facilitate cross-disciplinary workshops, seminar series, showcase events and funding proposals, help forge new links with government, business and academic institutions, nationally and internationally and often provide an inclusive overview of relevant Oxford research).

4.3 The Divisions, Continuing Education and ASUC should consider developing a three to five year plan of joint activities with the Museums and Collection designed to create and support opportunities across the University for public engagement and knowledge exchange.

5.0 The Board of Isis should ensure that Isis is more directly responsive to the needs of the academic divisions, and is positioned first and foremost as a service to academics and researchers and not a profit centre. Firmer connections would be established by developing Isis’ plans in direct consultation with the divisions, and with Research Committee, and by embedding Isis staff closer to research activity who are empowered to make decisions on optimising the practical use and exploitation of intellectual property. The role and remit of Isis Enterprise and the locus of services provided by Oxford University Consulting (OUC) should be examined.

5.1 The University should clarify the roles and responsibilities of OSEM and Isis in relation to spin-outs.

5.2 The Intellectual Property Advisory Group (IPAG) should continue to address key issues related to new forms of intellectual property management and exploitation, including when open models of innovation are most appropriate and pathways for approval of any proposed variations which would affect the University’s normal intellectual property position.

6.0 The Divisions should work with Isis Innovation, the Development Office and Oxford Spin-Out Equity Management (OSEM) to ensure very high priority is given to attracting significant funds for proof of concept work, incubation and strategic investment in the University’s spinouts.
7.0 The PVC (Research) should work with other Senior Officers, the Finance Division and Isis to identify and recommend to the Planning and Resource Allocation Committee (PRAC) a sustainable funding model for growing innovation activity.

7.1 The University should seek to build a University-level fund for Knowledge and Innovation activities analogous to the OUP John Fell Fund for Research in scale and prestige.

8.0 University Senior Officers should continue to focus on key strategic relationships and projects designed to strengthen the regional research and innovation eco-system and on facilitating researcher-led initiatives with business, the major science facilities and other organisations.

9.0 The PVC (Research) should continue to ensure the University’s involvement with the Oxfordshire Local Enterprise Partnership (LEP) and the importance and mutual benefits arising are clearly communicated within the University.

9.1 The University should continue to look for ways to stimulate the regional research and innovation eco-system.

9.2 The University should clearly project that its primary goal in working with businesses of all kinds in the region is economic growth and not generating revenue for itself.

9.3 The Collegiate University should ensure that as far as possible there is a clear strategy internally (between the University and the Colleges) and at a regional level for future development of innovation centres and incubators alongside provision for entrepreneurship training and mentoring.

10.0 Estates strategy and planning should provide spaces for knowledge exchange and innovation activities, especially cross-department and, where appropriate, cross-division interaction and initiatives, and for advisory and support services to be co-located and as close as possible to the academic enterprise.

10.1 Research Services and Isis should work with Divisional Offices to plan for the future co-location of services in close proximity to academic activity. This should be given a high priority in Divisional and Estates Services’ planning.

10.2 The PVC (Research) should work with Divisions, Departments and Units running incubators and innovation centres that support start-up businesses (including the BioEscalator, Begbroke, Launchpad, Isis Software Incubator and SHED) to coordinate the development of Oxford’s incubators and science parks in a connected way across the institution.
11. The PVC (Research) should work with the Divisions and Services to develop a Communications Strategy for Innovation, Impact and Entrepreneurship which addresses key internal and especially external constituencies, with the objective of improving the visibility of all of the University’s achievements in knowledge exchange and innovation.

11.1 Given the importance of the impact agenda, the Research Committee needs to give academic leadership both to internal communications and to a much stronger, coordinated external marketing campaign. That campaign should project Oxford as a leader in knowledge exchange, innovation, enterprise and public engagement and help attract new potential collaborators and supporters. The Oxford brand needs to include all these elements.

11.2 The new Partnerships web site - [http://partnership.ox.ac.uk/](http://partnership.ox.ac.uk/) - needs to be better promoted and evaluated.

11.3 The PVC (Research) and the Registrar, together with other Senior Officers and the management team at Isis, should review which communication activities by Isis should in future form part of the University’s program and what branding strategy should be used.
Background

The University of Oxford wishes to ensure that we are effectively and comprehensively making use of our intellectual property for national, international and institutional benefit. The outcomes of research can often be of benefit to the wider world beyond the academy. The University recognises its responsibility to efficiently and effectively maximize these benefits. This will in turn benefit the University in both financial and reputational terms, and help to create an environment that will continue to attract the best and most creative students, academics and researchers from around the world. We aim to be a global leader in knowledge exchange.\textsuperscript{xxxi}

The Working Group will assess the degree to which Oxford is achieving these aspirations, including by comparison with the best practice in the world (and in particular successful models in the UK and USA which have similar university systems and economies). Are we being sufficiently ambitious at Oxford? Do we have the right facilitating structure(s) in place? Are there exciting new approaches we should take?

The Working Group will help construct an Innovation Strategy that defines an over-arching plan for action and can be used to identify key goals and priorities for the allocation of resources.

As one element of its deliberations, the Working Group will consider two specific questions referred by the Planning and Resources Allocation Committee (PRAC), viz.

- whether there is scope to undertake more technology transfer activities leading to new or improved means to utilise intellectual property or expertise across the University
- whether there should be any changes in this context and in the wider context of Oxford’s ambitions in knowledge exchange and wider engagement, to the role of Isis Innovation Ltd and/or in the funding and business model for Isis.

The Working Group is encouraged to consult with the University community, including through inviting brief written submissions (comments and recommendations) in response to specific questions and issues and to make effective use of national and international comparators and exemplars.
## Membership of the Working Group

<table>
<thead>
<tr>
<th>Chair</th>
<th>Professor Ian Walmsley, PVC (Research, Academic Services and University Collections)</th>
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One member of each Academic Division, appointed by the PVC(R) in consultation with the Heads of Divisions

| Humanities Division | 1 Professor Shearer West  
|                    | 2 Dr Martin Conway (alt) |
| Mathematical, Physical and Life Sciences Division | 1 Professor Patrick Grant  
|                                                    | 2 Professor Peter Grindrod (alt) |
| Medical Sciences Division | 1 Professor Matthew Wood  
|                            | 2 Professor Keith Channon (alt) |
| Social Sciences Division | 1 Dr Felix Reed-Tsochas  
|                          | 2 Professor Peter Tufano (alt) |

A member of the Knowledge Exchange and Impact Sub Committee of Research Committee, appointed by the PVC(R)  
**Professor Chas Bountra**

One of the Conference of Colleges’ representatives on the Research Committee  
**Professor Richard Carwadine**

Up to four external members, appointed by the PVC(R) in consultation with the Heads of Divisions

- **Dr Tom Baer**, Executive Director of the Stanford Photonics Research Centre at Stanford University and co-founder of Arcturus Bioscience, Inc.
- **Dr Alison Campbell**, Director of Technology Transfer, Ireland
- **Professor Richard McCullough**, Vice Provost for Research, Harvard University
- **Dr David Secher**, Senior Bursar, Life Fellow, Gonville & Caius College, Cambridge

### Support Staff

- Dr Glenn Swafford (Principal Contact) and Dr Phil Clare, Research Services
- Ms Judith Finch, PRAS
- Ms Carolyn McKee, Legal Services
### Colleagues who met with the Working Group, 24-25 April 2014

<table>
<thead>
<tr>
<th>Session</th>
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<tr>
<td>1.</td>
<td>• Lord (Paul) Drayson, External Member of the University Council; Founder and Managing Partner, Drayson Racing Technologies</td>
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</table>
| 2.      | • Professor Jonathan Michie (Head of Continuing Education)  
          • Professor Sarah Whatmore, Head of School of Geography and the Environment and Associate Head (Research), SSD  
            *representing Professor Roger Goodman, Head of Division, SSD*  
          • Dr Abigail Williams (English) and KE/PE Academic Champion, *representing Professor Shearer West, Head of the Humanities Division* |
| 3.      | • Professor Alex Halliday, Head of the Mathematical, Physical and Life Sciences (MPLS) Division |
| 4.      | • Dr Andrew Fairweather-Tall, Senior Assistant Registrar (Research), Humanities  
          • Dr Sam Sneddon, Assistant Registrar (Research), Social Sciences Division (SSD)  
          • Ms Aileen Marshall-Brown, *Knowledge Exchange Facilitator, SSD* |
| 5.      | • Dr Adrian Stokes, Director of the Continuing Professional Development Centre, Continuing Education  
          • Ms Liz Sanders, Programme Development Officer, Continuing Education |
| 6.      | • Professor Alastair Buchan, Head of the Medical Sciences Division |
| 7.      | • Mr Tom Hockaday, Managing Director, Isis Innovation Ltd  
          • Ms Linda Naylor, Head of the Technology Transfer Group, Isis Innovation Ltd  
          • Mr Nigel Keen, Chair of the Board of Directors, Isis Innovation Ltd |
| 8.      | • Mr Giles Kerr, Director of Finance, University of Oxford  
          • Dr Chris Towler, Director, Oxford Spin-Out Equity Management (OSEM) |
| 9.      | • Dr Maxine Allen, Head of Business Development and Partnering, Medical Sciences Division (MSPD)  
          • Dr Caroline Livingstone, Manager of Bedgecome Science Park, MPLS  
          • Dr Stuart Wright, Head of Impact and Innovation, MPLS |
| 10. | • Dr Phil Clare, Associate Director and Head of Knowledge Exchange, Research Services  
• Dr Richard Liwicki, Deputy Director, Research Services  
• Ms Barbara Murray, Head of the Science Area Team, Research Services |
| 11. | • Mr Chris Green, Chief Executive, SWQ Group Ltd (and co-author of the report *The Oxfordshire Innovation Engine, Realising the Growth Potential* (October 2013)) |
| 12. | • Professor Sir John Bell, Regius Professor of Medicine |
| 13. | • Mr Nigel Tipple, Chief Executive, Oxfordshire LEP  
• Mr Adrian Shooter, Chairman, Oxfordshire LEP |
| 14. | • Professor Gary A Ford, Chief Executive Officer, Oxford Academic Health Science Network  
• Dr Nick Ram-Scott, Director of Commercial Development, Oxford Academic Health Science Network |
Submissions

A. WRITTEN SUBMISSIONS

- **Alison Noble** - Technikos Professor of Biomedical Engineering and Director of the Institute of Biomedical Engineering
- **Dave Tapolczay** - Chief Executive Officer, MRC Technology
- **Frank von Delft** - Principal Investigator, Group Head/ PI, Member of congregation and Supervisor, Structural Genomics Consortium
- **Graham Richards** - Professor and former Chairman of Chemistry
- **Jim Hall** - Director, Environmental Change Institute; Professor of Climate and Environmental Risks, School of Geography and the Environment
- **Kate Bingham** - Managing Partner, SV Life Sciences
- **Keri Dexter** - Assistant Registrar, MPLS Division
- **Leila Whitworth** - Assistant Registrar (Research), Medical Sciences Division
- **Lucy Tallents** - Postdoctoral Research Officer and Overseas Training Coordinator, Zoology Department
- **Nicholas Edwards** - Chairman of Kinapse and Oxtex
- **Nick Cross** - Deputy Chairman – (Non-Executive), Immunocore
- **OBN**
- **Peter Dobson** - former Academic Director, Begbroke Science Park, University of Oxford
- **Phil Clare** - Associate Director, Research Services and Head of Knowledge Exchange
- **Stephen MacMahon** - Director, The George Institute for Global Health

B. TWO-PAGE SUMMARIES OF MAJOR POINTS FROM THE PEOPLE WHO MET WITH WORKING GROUP MEMBER PROFESSOR PETER GRINDROD

- **Achillefs Kapanidis**, *Professor of Biological Physics, Department of Physics*
- **Manus Henry**, Director of the *Invensys University Technology Centre for Advanced Instrumentation* at the Department of Engineering Science
- **Michele Sanders**, Post Doctoral Researcher, Department of Zoology
- **Oliver Cox**, Knowledge Exchange Fellow - Thames Valley Country House Partnership Project
- **Paul Newman**, Faculty member of the Department of Engineering Science and the BP Professor of Information Engineering at the University of Oxford.
C. SUBMISSIONS FROM PEOPLE WHO MET WITH THE WORKING GROUP, 24-25 APRIL

- **Professor Jonathan Michie** - Head of Continuing Education
- **Dr Abigail Williams** - English Faculty and KE/PE Academic Champion, representing Professor Shearer West, Head of the Humanities Division
- **Dr Andrew Fairweather-Tall**, Senior Assistant Registrar (Research), Humanities
- **Dr Sam Sneddon**, Assistant Registrar (Research), Social Sciences Division (SSD) and **Ms Aileen Marshall-Brown**, Knowledge Exchange Facilitator, SSD
- **Dr Adrian Stokes**, Director of the Continuing Professional Development Centre, Continuing Education and **Ms Liz Sanders**, Programme Development Officer, Continuing Education
- **Mr Tom Hockaday**, Managing Director, Isis Innovation Ltd, **Ms Linda Naylor**, Head of the Technology Transfer Group, Isis Innovation Ltd and **Mr Nigel Keen**, Chair of the Board of Directors, Isis Innovation Ltd
- **Dr Chris Towler**, Director, Oxford Spin-Out Equity Management (OSEM)
- **Dr Maxine Allen**, Head of Business Development and Partnering, Medical Sciences Division (MSD), **Dr Caroline Livingstone**, Manager of Begbroke Science Park, MPLS and **Dr Stuart Wright**, Head of Impact and Innovation, MPLS
- **Dr Phil Clare**, Associate Director and Head of Knowledge Exchange, Research Services, **Dr Richard Liwicki**, Deputy Director, Research Services, and **Ms Barbara Murray**, Head of the Science Area Team, Research Services
- **Mr Chris Green**, Chief Executive, SWQ Group Ltd
- **Professor Sir John Bell**, Regius Professor of Medicine
- **Mr Nigel Tipple**, Chief Executive, Oxfordshire LEP and **Mr Adrian Shooter**, Chairman, Oxfordshire LEP
- **Professor Gary A Ford**, Chief Executive Officer, Oxford Academic Health Science Network and **Dr Nick Ram-Scott**, Director of Commercial Development, Oxford Academic Health Science Network
Documents Provided to the Working Group

- University
  - University of Oxford Annual Review 2012 – 2013
  - Oxford University Strategic Plan 2013 – 18
  - HEIF5 Institutional Strategy
  - OIWG Oxford University Selected University Facts and Figures
  - Research Services Plan 2013 – 14
  - Posts and Job descriptions for KE related support roles
  - University Intellectual Property Policy and Guidelines
  - Brief Summary of the University’s Statutes and Regulations on Intellectual Property
  - Overview of the Research Councils’ Impact Acceleration Accounts at Oxford
  - REF 2014 – Evidence and indicators for environment and impact
  - Isis Innovation Ltd
    - Isis Economic Impact Brochure March 2014
    - Isis Innovation Annual Report 2013
    - Isis Innovation Ltd Annual Report 2012
    - Charter
    - Mission
    - Five Year Plan
    - Customer Views

- Encouraging a British Invention Revolution: Sir Andrew Witty’s Review of Universities and Growth

- Extract from the City Deal

- Imperial Innovations Plc Annual Report 2013

- Cambridge Enterprise Ltd Annual Review 2013

- Oxford Economic Growth Strategy Summary

- Oxfordshire Innovation Engine, Realising the Growth Potential

- Rick McCullough - The Future of University Partnerships

- Skoltech –MIT overview of leading university based technology innovation ecosystems
Isis Innovation Ltd

The main object of Isis is defined in the 2013 Memorandum of Association between Isis and the University.

1.2 The main object of Isis, as stated in its Memorandum of Association, is to carry on the business of:-

(a) arranging for the development of ideas, inventions or discoveries arising out of research carried out within or in association with:

   (i) the University of Oxford;

   (ii) corporations, trusts and institutions with which the University co-operates for the purpose of teaching, research or clinical care;

   to a stage at which they can be externally licensed or otherwise commercially exploited;

(b) undertaking such licensing or other commercial exploitation, either directly or by contract or arrangement with other parties;

(c) making the expertise gained from (a) and (b) available to other parties;

(d) providing consultancy and other services using the expertise and facilities of the University.

Isis has three principal activities⁴:

(1) Technology Transfer for Oxford

Managing the University’s intellectual property, through investing in patents and completing licensing deals and spin-out company creation

Isis manages the University’s intellectual property portfolio, working with researchers on identifying protecting and marketing technologies through licensing, spin-out company formation, consulting and material sales.

(2) Oxford University

Managing Oxford University Consulting as a service to Oxford academic staff. In 2002 Oxford University Consulting (OUC) became part of Isis, working alongside Isis’ existing activities. OUC provides a service to University academics to help them manage and win consulting work, and manages risk for the University. This provides support to researchers in identifying and managing consulting opportunities and helps businesses identify expertise within the University to help solve their problems.

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¹ Extract from the Isis ‘Report to GPC. Review of six months to September 2013’
(3) Isis Enterprise

Managing Isis Enterprise as a profitable business division. In 2004 Isis established a new operating division, Isis Enterprise, to sell Isis expertise in technology transfer to other universities, research institutes, governments, and companies.

Isis activities are managed under a number of different business models.²

Technology Transfer

Isis receives royalty income from licensees and distributes it according to the University statutes and guidelines. Isis recovers patent costs and retains 30% of net revenue to support its operating costs. The remaining 70% of net income is paid to the University (and distributed according to the table below). There are some projects where Isis retains less than 30%; changes to the 30% are made following agreement by the University and Isis. Isis retains 15% of net income from licences for end-user software and material sales.

For spin-out companies, Isis works with researchers to set up the companies, and creates a shareholding for the University; the shares are held in the name of the University, not Isis. Revenues generated by the University’s shareholdings are distributed: - Capital Fund 50%, Department/Faculty 25%, John Fell Fund 10%, Isis 15% (Isis does not receive distributions in excess of the annual subvention). For Isis Software Incubator start-ups, the shareholder is Isis together with the founders, and sometimes other investors.

Oxford University Consulting

The business model for this Group is that Isis retains 10% of the consulting contract value and 7.5% of Departmental Services income. This does not cover costs and the balance is met with support from the University. In recent years the University has provided this support from its HEIF award from government. The remainder is paid direct to academics or transferred to University Departments. The 10% for consulting was reduced from 15% in September 2011; the 7.5% for services was reduced from 15% in January 2011.

Proof-of-Concept and Seed Funds

These funds are owned and held by the University. Isis receives a management fee for each successful project presented to the Funds.

Isis Enterprise

Isis Enterprise is a separate business within Isis Innovation Ltd. Overall, final profits made by Isis are paid to the University under gift aid on an annual basis.

Oxford Innovation Society

Membership fees from OIS Members are retained by Isis (£200k in 2012) to meet Isis operating costs. OIS Dinners are self-funding through industry sponsorship.

² Extract from the ‘Isis Five Year Plan April 2013 to March 2018’ (presented to PRAC, 16 October 2013)
REFERENCES

1 Knowledge exchange: ‘The two-way flow of people and ideas between the research environment and wider society and economy’ (adapted from the RCUK definition); Innovation: ‘The creation, diffusion and application of knowledge’ (adapted from The OECD Innovation Strategy. Getting a Head Start on Tomorrow, 2010); Entrepreneurship ‘Identifying a need - any need - and filling it. It’s a primordial urge, independent of product, service, industry or market.’ From http://www.forbes.com/sites/brettnelson/2012/06/05/the-real-definition-of-entrepreneur-and-why-it-matters/

2 There are an estimated 1500 high tech firms in Oxfordshire employing 43,000 people – see page 29 of The Oxfordshire Innovation Engine. Realising the Growth Potential. A report commissioned by the University of Oxford and Science Oxford with support from the Oxfordshire Local Enterprise Partnership, and prepared by SQW in consultation with representatives from the research, government, financial and business communities of Oxfordshire. October 2013.

3 http://www.admin.ox.ac.uk/pras/planning/


5 See e.g. http://www.cio.com/article/741169/What_Is_an_Entrepreneur_in_Residence_and_Why_You_Need_One

6 See e.g. http://www.fransjohansson.com/the-medici-effect-by-frans-johansson/

7 See Enterprise and entrepreneurship education: Guidance for UK higher education providers, The Quality Assurance Agency for Higher Education 2012


10 See e.g. http://www.brookings.edu/research/papers/2013/11/university-start-ups-technology-transfer-valdivia


12 Service agreements are contracts under which an external purchaser buys a service from the University. This is distinct from funding research, although sometimes the distinction can be difficult to make. It might include time on machines, use of facilities, preparation of a report or conducting analysis of materials. It may even include the preparation of vaccines for clinical trials.

13 The Oxford Academic Health Science Network is one of 15 AHSNs licensed for five years by NHS England in 2013. Its vision is ‘Best health for our population and prosperity for our region’. Mission: We will support collaboration, research and innovation across the NHS, universities and business, building on our strengths to deliver exemplary care and create the strongest life science cluster.

14 From The National Coordinating Centre for Public Engagement
The Government’s City Deal programme sees cities and their surrounding areas as important to the long-term growth and economic success of England. The programme involves the Government giving funding and powers to the city in exchange for key stakeholders in the city taking on responsibility for creating economic growth in the area.

‘Oxford and Central Oxfordshire’ was one of 20 cities invited to bid in the second wave of the programme. The regional City Deal was led by the Local Enterprise Partnership (LEP) and Oxfordshire County Council with input from the Atomic Energy Authority, STFC, Oxford University, Oxford Brookes University, and district councils. The Government’s announcement of the successful outcome of the “Oxford and Oxfordshire City Deal” was made on 28 January and spanned innovation hubs and support, planning and development, transport for innovation and locally responsive skills systems.

Mr Green was reflecting on a wide-ranging survey of businesses in the region that was conducted as part of work on the report titled *The Oxfordshire Innovation Engine*.

*The University Strategic Plan 2013-2018* features a strong commitment to ‘Wider Engagement’ as one of three over-arching academic objectives alongside ‘Research’ and ‘Education.’ The Plan observes that ‘Enterprise and innovation are fundamental to Oxford’s continuing research success’ and includes commitments to ‘foster creative, entrepreneurial activity by our staff and students’, ‘stimulate collaboration with research users to increase uptake of research outputs’, ‘inform and advise a wide range of organisations’ and promote ‘more interaction with business and industry, including through continuing professional development, collaborative research, translational activities, consulting, licensing, spin-out companies, and commercial ventures.’