INTELLECTUAL PROPERTY, PATENTS AND LICENCES

These guidelines have been written for researchers at the University of Oxford to guide you through the patenting procedure and describe how Oxford University Innovation will market and commercially develop your work through to licensing.

This booklet is one of a series of five Guidelines to Researchers available from Oxford University Innovation Ltd (and at www.innovation.ox.ac.uk). These are:

* Intellectual Property, Patents and Licences
* Starting a Spinout Company
* Consulting Agreements
* University Proof of Concept & Seed Funds
* Oxford Startup Incubator

I welcome any comments you have on how these guidelines could be made more helpful.

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The Technology Transfer Company of the University of Oxford

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INTRODUCTION TO OXFORD UNIVERSITY INNOVATION

Oxford University Innovation Ltd is the University of Oxford's wholly owned technology transfer company. Oxford University Innovation was established in 1988 and in 1997 started a major expansion phase. Oxford University Innovation manages the University's intellectual property portfolio, working with University researchers on identifying, protecting and marketing technologies through licensing, spin-out company formation, consulting and material sales.

Oxford University Innovation (OUI) provides researchers with commercial advice, funds patent applications and legal costs, negotiates exploitation and spin-out company agreements, and identifies and manages consultancy and service opportunities. OUI works with researchers from all areas of the University: medical sciences, mathematics, physical and life sciences, social sciences and humanities.

Patents & Licensing OUI files around 100 patent applications on behalf of the University per year, manages over 1500 patent application families and has concluded over 3000 commercial deals since the year 2000. OUI licenses technologies to companies who invest in developing and selling products in a timely and ethical manner. Licensees are sought from all technology and business sectors on an international basis.

Creating New Companies OUI has assisted in the formation of more than 110 University spin-out companies, generating significant value in equity holdings for the University of Oxford. OUI works with University researchers to develop new business opportunities, identifying and sourcing investment, management and professional services.

Consulting Oxford University Consulting (OUC) offers access to the expert knowledge of University researchers and departmental services within the University. OUC is part of OUI, providing a professional service dedicated to finding cost effective solutions to consultancy needs. Areas of expertise include problem solving, data analysis, expert evaluation, due diligence, management and business development. OUC's activities meet the ISO 9001 quality assurance standard.

Material Sales OUI manages the negotiation of sales agreements for biological and physical science materials developed within the University.

The **Oxford Innovation Society**, founded in 1990, enables industrial companies to benefit from OUI' activities by having a 'window' on Oxford science. Members enjoy advance notification of all patent applications marketed by OUI, a regular newsletter, customised benefits, including seminars and needs analysis, and attend meetings and dinners, which provide a unique environment for constructive interaction between business leaders, investors and top University scientists.

The **Oxford Angels Network** introduces private investors and seed/venture capitalists interested in investing in spin-out companies from the University of Oxford to investment opportunities. IAN is a not-for-profit company limited by guarantee, established by OUI in 1999. Members of IAN may also be interested in serving as non-executive directors, nominated by the University, on the boards of the new spin-out companies.

OUI has strong **University links** with all the parts of the University involved in technology commercialisation and enterprise. These include Research Services; Begbroke Science Park; Oxford Science Enterprise Centre; and Entrepreneurship Said at the Saïd Business School.

Isis Enterprise is a division of OUI, offering consulting expertise and advice in technology transfer, based upon Oxford University Innovation Ltd's success as Oxford University's technology transfer company. Isis Enterprise helps universities, research organisations and governments develop their technology transfer activities.

WHAT IS INTELLECTUAL PROPERTY?

INTELLECTUAL PROPERTY (IP) is ideas, information and knowledge; in the University context IP can be viewed as the results and outcomes of research. "Intellectual" because it is creative output; and "Property" because it is viewed as a tradable commodity.

INTELLECTUAL PROPERTY RIGHTS (IPR) are specific legal rights which protect the owners of IP. IPR can be subdivided into the following major categories.

1. **PATENT**

A legal monopoly lasting 20 years granted in exchange for describing an invention and paying fees to the Patent Office. A patent position is destroyed by public disclosure of the idea before a patent application is filed (except for a short grace period in the US). **Think patent before you publish.**

2. **COPYRIGHT**

Copyright applies to literary and dramatic works, artistic and musical works, audio and video recordings, broadcasts and cable transmissions. Copyright is also the usual way of protecting software, although some software may be patented if it is a functional part of an invention. Copyright arises automatically; it does not need to be applied for; and lasts 70 years after the death of the author.

3. **DATABASE RIGHT**

Database rights apply to databases which are not protected by copyright (an EU right only).

4. **DESIGN RIGHT**

Design rights apply to aspects of the shape or configuration of an article. Unregistered design right (which covers computer chips, for example) can protect internal or external features. In the case of registered designs, the features must appeal to and be judged by the eye.

5. **TRADE MARK**

A mark (logo) or other distinctive sign applied to or associated with products or services, which does not describe the products or services.

6. **CONFIDENTIAL INFORMATION**

Confidential information is knowledge which only you possess and which you have only revealed under a non-disclosure/confidentiality agreement.

IPR	COVERS	NEED TO APPLY?	MAXIMUM DURATION
Patent	Inventions	Yes	20 years
Copyright	Literary, musical, artistic works, & software	No	70 years after death of author
Registered Design	Image; look & feel	Yes	25 years
Registered Trade Mark	Name, logo	Yes	Unlimited
Confidential Information	Unpublished secret information	No	Unlimited
Database Right	Databases	No	15 Years

Successful management of IPR provides the means by which individuals and institutions are able to protect their creative output from imitators. An understanding of IP and IPRs is an increasingly important aspect of University and business life. Now, more than ever, IP is recognised as a tradable commodity.

WHERE DOES OXFORD UNIVERSITY INNOVATION FIT IN?

Oxford University Innovation helps researchers in these areas:

*Identifying research output of potential commercial value
*Evaluating its commercial potential
*Protecting research output with IPR
*Marketing inventions
*Deal-making

These activities form the foundation of successful technology transfer, which can be described as stimulating contact between the owners and potential users of IP. Successful technology transfer is a team activity and we expect researchers to participate in the promotion of their inventions. This can become a time-consuming activity although it is also very interesting.

IDENTIFYING

This involves encouraging researchers to consider the commercial applications of research at an early stage and also working to identify novel, inventive and protectable aspects of research.

OWNERSHIP OF INTELLECTUAL PROPERTY

It is essential always to have a clear understanding of who owns IP arising from research activities. Establishing ownership of IP arising within Oxford University is the responsibility of Research Services (contact the Director, Research Services, University Offices). This involves establishing the 'trail' from: invention, to inventor(s), to employer (normally), to funding body (where research contract terms dictate). The University will assign (or license) to Oxford University Innovation IP which it owns where Oxford University Innovation is the chosen means of exploiting that IP.

EVALUATING

Technology transfer is a commercial activity and the money spent on patents is an investment from which a financial return is expected. Due to the early and complex nature of University research the return is likely to be long term and difficult to define. Nevertheless we need to establish clearly that a market (current or potential) exists before we spend money on patenting.

PROTECTING

Building defensible walls around inventions and other research outputs is essential. It is a complex and hence expensive activity. Oxford University Innovation manages a portfolio of patent families and has pursued initial applications through to granted patents on a global basis. Oxford University Innovation pays for filing and prosecuting patent applications, design rights and trademarks, using a range of patent attorneys and lawyers expert in high technology fields.

MARKETING

Oxford University Innovation uses its specialist searching skills and leads from researchers to identify potential commercial partners; prepares and distributes non-confidential marketing information and follows up potential leads.

DEAL MAKING

Negotiating and closing deals associated with licensing and spin-out activity for the development and exploitation of IP to optimise the overall benefit to the researchers, host Departments, the University and Oxford University Innovation. The resulting revenue is distributed according to University Regulations (see page 10).

THE TECHNOLOGY TRANSFER PROCESS (LICENSING)

Obtain this booklet from OUI; visit OUI www site; contact OUI and be put in contact with OUI Technology Transfer Manager.

Complete Invention Record Form (page 11 of this booklet).

Complete IP/1 and IP/2 forms and return to OUI.

OUI registers project and sends IP forms to Research Services for checking and assignment of University rights.

OUI together with the inventor assesses patentability and commercial value. Should it be patented?

Yes

No

OUI instructs patent attorney to draft patent application.

OUI explains alternative strategies.

Patent attorney drafts patent application; OUI Technology Transfer Manager and Inventor approve it.

UK patent filed

30 days minimum

Oxford Innovation Society Marketing Launch

General Marketing Launch

OUI liaises with inventor(s) and reviews options.

OUI enters into discussions and negotiations with interested parties.

OUI negotiates and concludes Licence agreement.

PATENTS

A patentable invention must be new, inventive, capable of industrial application and must not fall into an excluded category (e.g. artistic creations, mathematical methods, some computer programs, and business schemes). Oxford University Innovation and its patent attorneys will help with determining the question of patentability. Establishing whether an invention meets these criteria is a complicated, time consuming and expensive process. Although patenting is expensive (e.g. over £40,000 over five years), the rewards may be significant. If inventions are not properly protected, rights may be lost irretrievably.

1. THINK PATENT BEFORE YOU PUBLISH

The opportunity for obtaining a patent can be lost by publication of the underlying research. No information on an invention should be made available to the public in any way anywhere in the world prior to a patent application being filed. This includes publication in grant applications, journals either as articles or as letters, oral presentation at seminars, or information posted on the Internet, abstracts, theses, e-mails, poster displays, exhibitions, open days, or confidential disclosures to many people. Any "enabling" information about an invention which is published in any way will constitute a disclosure and weaken or destroy its patentability. An enabling disclosure is one which provides the means by which someone skilled in the subject could reproduce the work about to be patented.

Patent provisions in the USA are different (until the America Invents Act of 2011 they operated a *first to invent* system, rather than the *first to file* system), and if the invention has been disclosed, Oxford University Innovation and its patent attorneys will advise as to whether it is still possible for valid patent protection to be secured in the USA.

Oxford University Innovation will not prevent you from publishing your work. A patent application can be prepared and filed quite quickly (days, more normally weeks) once a patent attorney has been instructed. As soon as the patent application has been filed there is no restriction on subsequent publication of the invention, subject to the points below.

Following filing an initial patent application no information which is new or additional should be published without first checking with the patent attorney involved in the case. It is possible that the new information could be included in the patent application. If the information needs to be included in the patent application the only way this can be done is by way of a new updated application; and the same requirement for novelty as discussed above will apply in so far as the new application is concerned.

If there is a risk that necessary development work or securing necessary investment may take more than one year from the filing of the patent application, the invention should not be published or otherwise made available to the public during that year. Any new patent applications filed in the UK within a year of the filing date of an original patent application for the same invention are entitled to claim the filing date of the original application. After the first year it is no longer possible to claim priority, and any publication of the invention during that year could be used to challenge the validity of any subsequent application filed outside of the first year. This is important in case it becomes necessary for the original application to be abandoned in favour of a new application with a new filing date.

2. PREPARING THE PATENT APPLICATION

In completing the Invention Record (see page 11) you will be providing to Oxford University Innovation important information to help the patent attorney draft the application.

In preparing a patent application the attorney is required to draft a specification which describes the invention in detail and highlights those features of the invention which are new and inventive over what is already known. At least one way for the invention to be put into effect should be included in the specification. Hence information on experimental examples and/or prototypes, although not essential, may make the difference in successfully securing valid patent protection.

The patent application will aim to describe the work in as broad a way as possible, so as to avoid others easily 'inventing around' your work. You will be encouraged to speculate as to the possible uses of your work to a level beyond that in an academic publication. The application itself will be published 18 months after filing.

It is possible to describe more than one related invention in a single patent application. In due course, however, the inventions will need to be divided out into separate applications, as a patent is only granted on a single invention. Oxford University Innovation and its patent attorneys are able to advise on this.

3. INVENTORSHIP

It is essential to identify accurately the people who made the invention(s) described in the patent application. Inventorship is a matter of legal fact, not opinion. It is unusual for an invention to be made by more than two or three people. Whilst those associated with research may be included as authors on academic publications, only true inventors may be included on patent applications. If inventorship is recorded wrongly, this may be enough for the patent authorities to refuse grant of or revoke a patent. Oxford University Innovation and its patent attorneys are able to assist in discussions to establish correct inventorship.

4. SEARCHING

Patent applications and granted patents are published by patent offices around the world and are publicly available documents. Published patents provide a wealth of information which researchers may wish to access for a number of reasons:

*assessing the likelihood of your own work being patentable over the existing publications;

*exploring the way patents are written to clarify the scope of an invention;

*part of a 'literature search' when embarking on a research programme;

*assessing the likelihood of planned commercial activities infringing existing patents.

Patent applications are published 18 months after they are filed. The published patent information can be accessed free on a number of www sites:

United States Patent & Trademark Office - http://portal.uspto.gov/external/portal/pair

UK Intellectual Property Office - http://www.ipo.gov.uk/

European Patent Office – http://www.european-patent-office.org/index.en.php

Japanese Patent Office – http://www.jpo.go.jp/

Google Patents – www.google.com/patents

World Intellectual Property Organisation - http://www.wipo.int/portal/index.html.en

Australian Patent Office - http://www.ipaustralia.gov.au/patents/search_index.shtml

Canadian Patent Office - http://brevets-patents.ic.gc.ca/opic-cipo/cpd/eng/introduction.html

Oxford University Innovation is able to assist in patent searching.

5. KEEPING A LABORATORY NOTEBOOK

It is only in 1996 that it became possible to prove a date of invention for US Patent purposes from evidence produced outside the US. In order to take advantage of this change in US Patent law inventors must follow certain guidelines.

Under US Patent law, an inventor must provide evidence of the following in order to prove a date of invention: date of conception of the invention; reduction to practice of the invention; diligence in achieving reduction to practice. The evidence which an inventor requires may be in a variety of forms but is frequently contained in a laboratory notebook.

In order to provide irrefutable evidence the following procedures are required in keeping a laboratory notebook: Permanent binding (not loose-leaf or spiral bound); Numbered pages; Good paper quality; Permanent ink (not pencil); Legible and factually complete entries; Describe all experimental procedures, giving conditions of experiment and apparatus; Ensure each page is signed off and dated by the author and witnessed as soon as possible (the witness should be someone who understands the area of research but who is not directly involved and cannot be considered to be under the control of the author); Do not leave any gaps, pages undated unsigned or unwitnessed. Oxford University Innovation and its patent attorneys are able to advise on this issue.

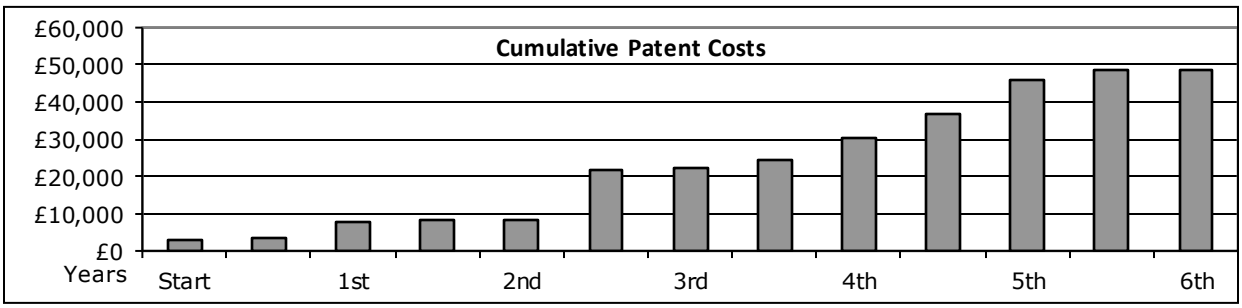
6. PATENT APPLICATION PROCEDURE

Most Oxford University Innovation patent applications are filed first in the UK, which establishes an international 'priority date'; then after 12 months international protection is sought via the Patent Co-operation Treaty (PCT). This enables filing of a single patent application to establish protection in a range of countries. It simplifies international patent filing and prosecution, and defers costs. Over one hundred countries have signed the PCT, and these can all

be designated in one patent application. In addition Oxford University Innovation may file a separate US patent application to protect better this important market.

The maximum life of a patent in most countries of the world is 20 years from the initial filing date. Further protection can sometimes be achieved for some products in some markets (e.g. Supplementary Protection Certificates).

TIMESCALE	ACTIVITY
Start	Patent Application filed in UK; Priority Date established; Further exemplification of the invention must be done within the next 12 months, this period being crucial for adding value to the patent. **THE OPPORTUNITY FOR OBTAINING A PATENT CAN BE LOST BY PUBLICATION BEFORE FILING.**
1st year	Updated Application filed; At this stage more data can be added to the invention; Overseas countries are designated under the PCT system
1.5 years	Patent Application published with search report.
2 years	Patent Examiner report received
2.5 years	National Phase entry – key, expensive, decision point about which territories to pursue. Commercial interest is important to justify continued investment at this point.
3-6 years	The patent attorney working with the Oxford University Innovation Technology Transfer Manager, inventor(s) and the examiner to negotiate and agree the Patent claims. The patent is granted / refused in each of the designated countries
4 – 20 years	Annual renewal fees payable



Oxford University Innovation and its patent attorneys are able to assist and advise on all aspects of patenting.

MARKETING, COMMERCIAL DEVELOPMENT AND CONFIDENTIALITY

When potentially valuable technology has been identified and protected, Oxford University Innovation works closely with the inventors to commercialise the technology. This involves identifying the right partner for the commercial development and exploitation of the technology in the marketplace. It is easy to choose the wrong partner and a number of considerations should be addressed when choosing partner(s). Examples are: sufficient resources to take the technology to market; real intent to develop the technology as it may compete with in-house programmes; and awareness of access of the final products, where applicable, to developing countries. This last point, involving partly ethical concerns, is of particular relevance to human healthcare technologies and researchers should discuss with Oxford University Innovation appropriate measures which can be taken.

Oxford University Innovation will write a one page, non-confidential, summary of the invention in conjunction with the inventor which is initially distributed to the members of the Oxford Innovation Society, a group of leading industrial companies and potential investors.

One month after launching the technology to the Oxford Innovation Society, Oxford University Innovation then contacts other potential licensees and publishes the opportunity on the Oxford University Innovation web site. We actively encourage networking between potential licensees and researchers, and welcome commercial leads from researchers.

Following expressions of interest from companies, Oxford University Innovation will arrange meetings to discuss possible commercial transactions with a view to entering into option, evaluation or licensing arrangements. Such arrangements may also involve the funding of further research in the researchers' laboratory.

ACCESS TO ESSENTIAL MEDICINES IN THE DEVELOPING WORLD

The University of Oxford and Oxford University Innovation are mindful of the importance of development and distribution of new health-related technologies for less developed countries. The University's policy when licensing its technology for commercial exploitation purposes is, as far as is practicable:

1. to prosecute patent applications in less developed countries only as necessary (for example, to provide development and marketing leverage for new products, or to exert leverage over global licensees); and
2. to grant licences with provisions that seek to increase the availability of medicines at affordable prices to less developed countries.

The University expects its commercial licensing partners to appreciate and cooperate with this policy.

CONFIDENTIALITY AGREEMENTS

Unless published for academic reasons, it is very important that researchers do not discuss their inventions with third parties without the protection of a confidentiality (or non-disclosure) agreement (available from Oxford University Innovation). This is the case even when a patent application has been filed.

Outline or selected information about the technology is possibly of value to companies and can be obtained by companies from preliminary discussions with researchers. Confidentiality Agreements are necessary when you wish to disclose confidential information to a company in the early stages of discussions which may lead to research collaboration, or licensing of intellectual property.

Keeping information confidential until it can be protected by, for example, patents is often essential in establishing links with industry. It is far harder to encourage a company to fund research or to licence technology if the company has no privileged or exclusive access to the research work.

LICENSING

Licensing enables Oxford University Innovation to maintain ownership, and therefore control, of the University's IP whilst at the same time generating royalty income from the use of the IP by industry. A licence is an agreement involving the transfer of rights from one party ("the licensor") to the other ("the licensee"). These rights commonly control the use (for copying, manufacture, sale etc.) of an IPR (a patent, copyright material, confidential knowhow etc.).

A licence deal may include a lump sum payment for the right to exploit the invention (either exclusively or non-exclusively), usually in a particular market or for a particular purpose (referred to as the "field"), plus a royalty on the licensee's sales. The deal may include a consultancy or service arrangement under which the inventor gives the company assistance in setting up work in its own laboratories. Oxford University Innovation supports academic staff undertaking consultancies through Oxford University Consulting. OUC manages all the contractual and administrative aspects of consultancy, minimising the administrative burden while protecting your interests and those of the University. We also support departments to undertake departmental consulting and services work. The deal can include a research contract with the University, and this would be managed through Research Services for the University.

There are certain terms of a licence which **affect you directly**: confidentiality, improvements, and publication. Please discuss these issues with your Oxford University Innovation Technology Transfer Manager.

Confidentiality: the terms of the licence agreement (and occasionally its existence) and information about the licensee's development and commercial plans and activities are confidential to protect the University's and the company's interests.

Improvements: licensees expect access to improvements in the technology so they can sell more, better products and to protect against your future ideas going to a competitor. The risk is the creation of a 'pipeline' through which your future ideas are pre-sold to a single company, who may in future become an unsuitable commercial partner. Oxford University Innovation limits the definition of 'improvements' to ideas by named individuals, within two years, within the scope of the licensed technology.

Publication: companies sometimes insist on the right to review papers before they are submitted for publication; Oxford University Innovation limits any delay to up to 3 months.

SOFTWARE LICENSING

Oxford University Innovation has a strong portfolio of software technologies which are licenced to commercial organisations on an exclusive or non-exclusive basis. Researchers who wish to obtain clearance to publish and share their software though open source licensing should contact Research Services.

REVENUE SHARING FROM LICENSING

For each piece of intellectual property, the revenue from successful exploitation by Oxford University Innovation (whether lump sums or royalties, from option, licence, assignment or other agreements), is:

*first subject to repayment of external project costs (inc. patenting (page 8), exploitation, legal);

*Oxford University Innovation then retains 30% as a contribution towards its ongoing costs on this and other patents;

*the remainder, i.e. 70% of the net licence income, is then passed on to the University for distribution to the researchers, General Fund and Department, in accordance with University Council Regulation 7 of 2002.

TOTAL NET REVENUE	RESEARCHER(S) TOTAL	GENERAL FUND	DEPARTMENT	OXFORD UNIVERSITY INNOVATION
To £72k	60%	10%*	0%	30%
£72k to £720k	31.5%	21%	17.5%	30%
Over £720k	15.75%	28%	26.25%	30%

(Effective since 1st April 2003. *This figure is intended to enable the University to pay Employer's National Insurance Contributions but otherwise leave the General Fund out of distribution in that band).

WHAT DO I DO NEXT?

Start by getting in touch with us, if you haven't already! We will ask you lots of questions in order to understand what you have done and explore with you the commercial potential of your work.

We will need some information from you and we use forms to collect this information. Although this may seem bureaucratic, it is tremendously helpful in ensuring that we get all the information needed to get the project off to a great start. We are happy to answer any questions you might have about this.

You can find the forms on our website: http://innovation.ox.ac.uk/university-members/. You will need to fil in:

- Invention record
- IP forms – IP/1 and IP/2

INVENTION RECORD

The invention record (template available from http://innovation.ox.ac.uk/university-members/) is a written description of your invention. It fulfils several important purposes:

- It helps Oxford University Innovation to assess whether the work is patentable;
- It helps the patent attorney to prepare the draft patent, if Oxford University Innovation decides to proceed with patenting;
- It helps give Oxford University Innovation and the University's Intellectual Property Due Diligence team an early indication as to the University's ownership of your invention, and identify issues which will need to be addressed downstream; and
- It provides an important record of the date of invention, which can become important in future patent process.

IMPORTANT: Discussions between you and Oxford University Innovation about your invention are confidential. To avoid any inadvertent public disclosure of your invention please consider all discussions about the invention confidential. Please use Confidential Disclosure Agreements to protect discussions with anyone outside the University. Please ask Oxford University Innovation for advice.

IP FORMS

The Invention Record is an important first step in creating a written description of your invention.

The IP/1 and IP/2 forms (available from http://innovation.ox.ac.uk/university-members/) must also be completed, signed by all researchers and returned to Oxford University Innovation for onward transfer to the University's Research Services to audit University ownership. It is not Oxford University Innovation policy to suggest delays to academic publications; so patent applications need to be filed in good time.

There are two Forms:-

1. **IP/1 Intellectual Property Due Diligence Form**, which asks about who did the work, when it happened and where all the funding came from. It is used in order to establish the 'chain of title' to the intellectual property – a clear picture of the ownership and any conditions on the intellectual property.
2. **IP/2 Intellectual Property Income Distribution Form** is used to understand the revenue distribution.

WHAT WE DO WITH YOUR DATA

We will hold the information that you provide for the purposes of registering your project with Oxford University Innovation and in connection with any of the work and the support that Oxford University Innovation provides. We shall not disclose it to any third parties except in connection with the support we provide to you and only to the extent necessary. For example, if a patent is filed on your technology and you are an inventor on that patent, we will be required by the patent office to disclose your name and departmental address. We may also be required to provide information about projects to the University's research funding and commercialisation partners (e.g. BRC, OSI, Technikos, BBSRC). The personal data requested in the IP2 will be used by the University for revenue sharing purposes.