

INTRODUCTION

What is Technology Transfer?

Technology transfer is the process of developing practical applications for the results of scientific research. The process to commercially exploit research varies widely. It can involve licensing agreements or setting up joint ventures and partnerships to share both the risks and rewards of bringing new technologies to market. Other corporate vehicles, e.g. spin-outs, are used where the host organisation does not have the necessary resources or skills to develop a new technology. However, the main aim of technology transfer is to take fundamental scientific discoveries and make them into marketable products so that the general public at large can benefit from the research as quickly and efficiently as possible.

In order to successfully develop technology transfer of a product, it must be ensured that the technology underlying the invention is appropriately protected via Intellectual Property provisions (see below). These can involve patents, trade marks as well as the non-registerable rights of copyright and know how.

What is Intellectual Property?

Intellectual property is the name given to the means of protecting the fruits of intellectual labour, whether it is laboratory research, a novel, the logo of a business or the knowledge associated with a product or process. It is a method of commercially protecting assets, that, without protection, would rapidly lose their value. Intellectual property includes patents, trade marks, copyright and know how and the protection of this knowledge is seen as an incentive to continue to produce works of value.

When granted, an Intellectual Property right will give you the right to prevent others from using your property. This can give you a monopoly in the market, lasting from 15 years, in design rights, to potentially indefinite rights in the case of trade marks, provided the trade mark is maintained and continually renewed). This protection gives value to your invention, and will increase the Technology Transfer opportunities available to you.

UCL Business

What is UCL Business?

UCL Business (UCLB) is the technology transfer arm of UCL. We offer advice and support at all stages of commercialisation, from financially supporting proof of concept experiments, to advising on patent strategies, negotiating licensing deals and setting up spin out companies. We can also advise on confidentiality agreements and Material Transfer Agreements. Through our integrated approach to technology transfer, combining scientific expertise and business acumen, we can help you take advantage of your research at UCL. (www.uclb.com)

Who to contact regarding Intellectual Property?

It can be difficult to know who to contact about which area of Intellectual Property:

Type of query	Who to contact
Research Contracts and sub contracts	Diran Solanke at Research Contracts (d.solanke@ucl.ac.uk),
Patents, Trade marks, know how protection	Alex Weedon at UCL Business (a.weedon@uclb.com)
Academic Copyright issues	Dr Paul Ayris (p.ayris@ucl.ac.uk)
Licences and other aspects of commercialisation	Alex Weedon at UCL Business (a.weedon@uclb.com)
Student Intellectual Property	Alex Weedon at UCL Business (a.weedon@uclb.com)

If you are in any doubt as to who to contact, then please do not hesitate to contact UCLB on 0207 679 9000.

UCL's IPR Policy

UCL has an Intellectual Property policy that applies to all staff, that aims to maximise the value of the intellectual property being generated at UCL for the benefit of the college, the individual and society as a whole. The policy covers the approach to all intellectual property (IP), the ownership expectations of UCL and the appeals process where there are disputes over IP. It should be noted that the policy only applies to UCL staff, and students are subject to separate provisions, as set out in the Student Intellectual Property policy (<http://www.ucl.ac.uk/current-students/rights/ipr/>). In the event that the work is subject to an external agreement as part of collaboration, or other funding scheme, ownership of IP will be subject to the terms of that agreement

Ownership of Intellectual Property

1. **Patents:** In line with the Patents Act 1977, UCL asserts its right to inventions made by staff in the course of their employment. However, UCL will endeavour to compensate the inventor in line with the standard Revenue Sharing Policy
2. **Copyright:** UCL recognises the rights of its staff to the ownership of their copyright, with the following exceptions:
 - a. Institutional material commissioned by UCL for administrative purposes
 - b. Materials generated by prior agreement, for which UCL provided resources in excess of those normally available
 - c. Materials generated by prior agreement which will involve sharing of copyright ownership between UCL and the member of staff

Where a member of staff is required to assign their Intellectual Property rights to UCL, the standard Revenue Share Policy will operate.

Revenue Sharing Policy

Where UCL receives an assignment of IP rights from a member of staff, any revenue commercially generated from those rights will be subject to the following policy:

Net Cumulative Income**	Exploitation Fee	Inventor(s) / Authors*	UCL Central Funds	Department
<50K	30%	50%	10%	10%
>50K	30%	30%	30%	10%

*The income allocated to inventors is shared on the basis to their contribution to the patent / paper. For example, equal inventors would receive half of this income.

** Net cumulative Income is Gross Cumulative Income less patent, legal and development costs incurred by UCL or its nominees.

How is this organised?

UCLB can arrange for any assignment or revenue share agreements to be completed, as well as offering advice about potential commercialisation of the invention / work. Please see below, diagram 2 for an explanation of the UCLB's process.

The UCLB Intellectual Property protection and commercialisation process

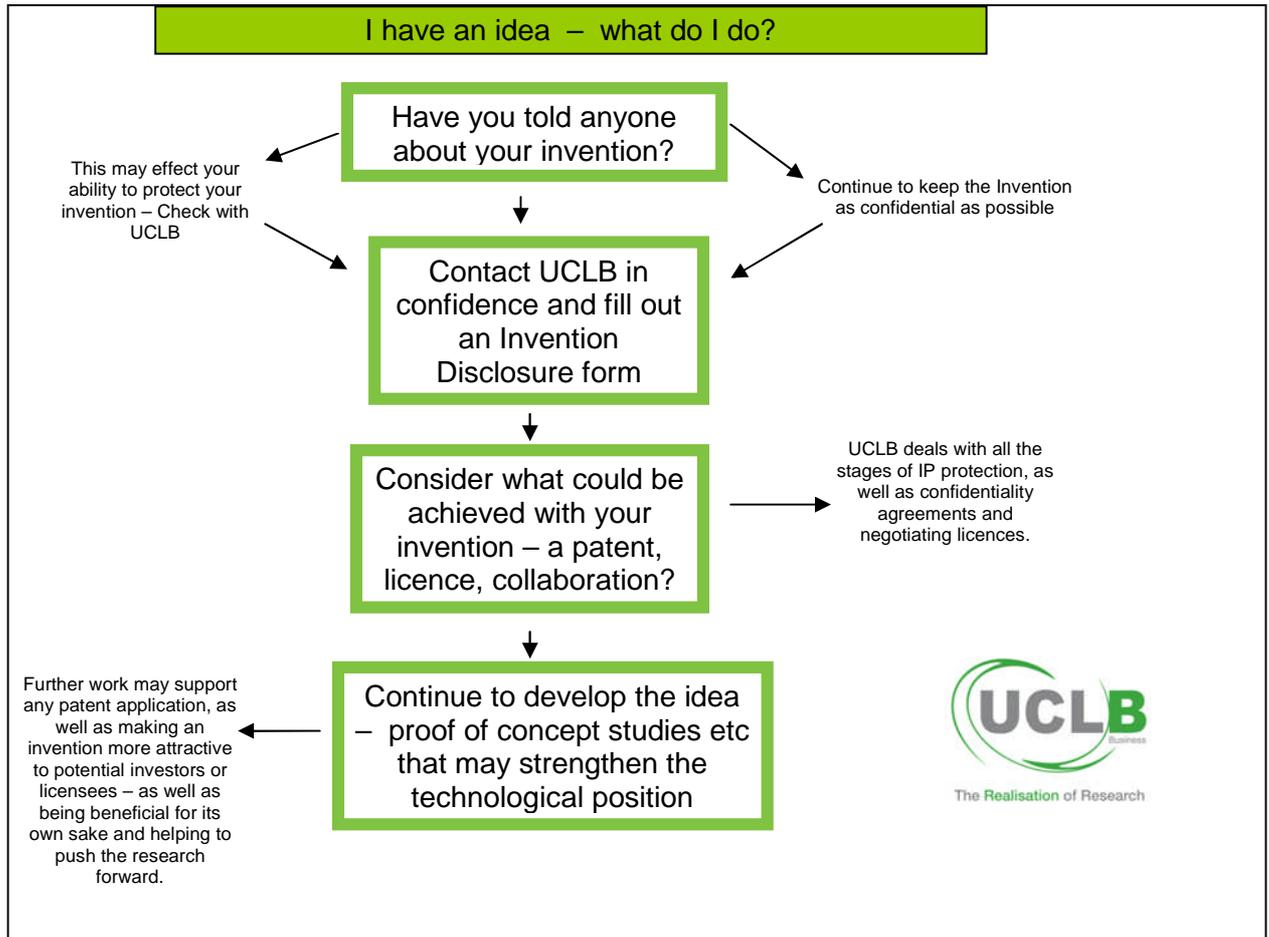
Once a first contact has been made with UCLB, a Business Manager is assigned to the project who has extensive experience in that particular scientific area. If you think you may have a commercially valuable idea, please contact us before

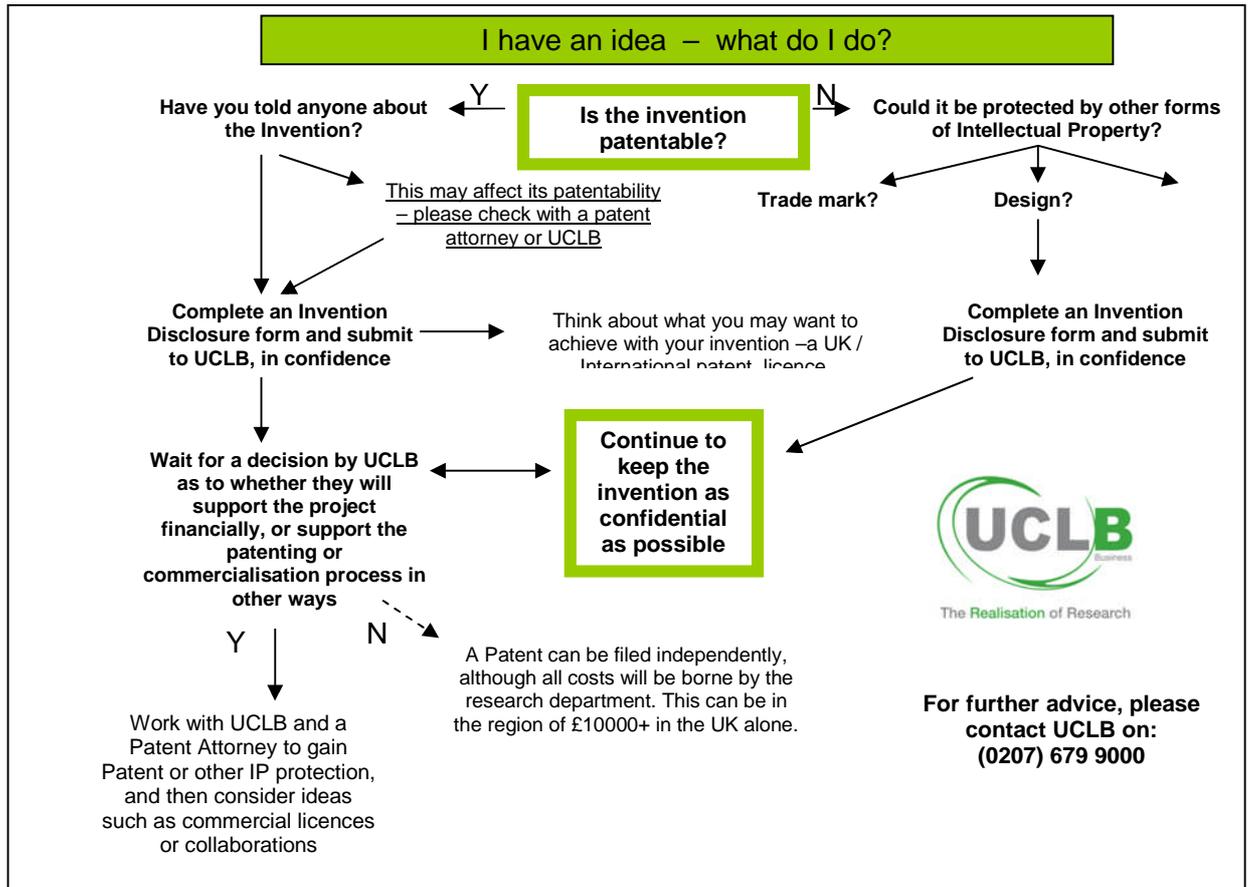
publication. An Invention Disclosure form will be sent out for you complete (in confidence) which will include:

- an outline of the idea / invention,
- any disclosures made, such as papers published or presentations given,
- details of funding sources,
- if possible, the commercial direction of the invention, such as potential licencees or companies that may be interested in the invention

Once this has been received it will be presented to a meeting of all the business managers and its viability discussed. Approval at this stage will lead to the project being taken on by UCLB. From this stage, the Business Managers will lead the development of the commercialisation and will help and advise in relation to patent filings other IP protection that may be available.

The viability of an invention is not purely based on scientific merit. The Business Managers will also consider commercial issues such as market size, competing technologies etc, as well as the strength of Intellectual Property protection available, such as patentability and enforceability. An idea that is scientifically interesting may not be commercially feasible, but all avenues and routes to market will be explored so that the university, individual and most importantly the general public get the largest benefit possible from the research being conducted at UCL.





Patents

What is a Patent?

A patent is a means of gaining protection for your idea against other people using it without consent. A patent is a legally enforceable document granted by the government of a country (or in the case of Europe, group of countries) which enables the holder to control who uses or benefits from an invention. A patent is means of protecting an application of a scientific or industrial idea – it is not a means of protecting an idea *per se*.

What can be Patented?

In order for an invention to be protectable by a patent, it must be novel (new), possess an inventive step (something which separates it from inventions that have gone before it, known as the “state of the art”) and be capable of industrial application (this includes research as well as traditional ‘industry’). However, there are certain areas in which a patent will not be granted:

- A computer program (as such) or a mathematical method
- A method of doing business
- A means of displaying information
- An aesthetic, literary or artistic creation (these may be protectable by copyright or another form of intellectual property)
- A discovery, such as a new compound, without any application

This is because a patent gives protection not for an idea, but for the application of the idea. There are potentially ways of getting round these restrictions – for example, a new compound may not be patentable in itself, but the method of making it, or of purifying it may be.

How do you get a Patent?

A patent is granted after application to the UK Intellectual Property Office. This application must be done in a very specific way and it is best to get the advice of a Patent Attorney first, so that your invention can be protected in the most appropriate way. UCLB can help arrange this, and in some case help with payment of expenses.

Why should you get a Patent?

A patent is a valuable legal document. It allows the holder (inventor) to control who uses his invention, and so potentially, allows him to licence out the right to work the invention, thus gaining a potentially lucrative income. It can also be valuable for researchers seeking grants or funding, as it is often seen to demonstrate the utility of a line of research.

As an employee of UCL, the university legally owns the Intellectual Property in your invention (this is set out under the Patents Act). However, you may be entitled to a share of any revenue that is generated as a result of commercialisation of your invention.

Ownership of Patent rights

Under the Patents Act, any invention that comes about during the course of employment, where the employee is employed to research or invent articles legally belongs to the employer. UCL tries to insure that inventors are reasonably compensated, and so operate a Revenue Share Policy with inventors which entitles them to a proportion of any revenue generated by their invention, after its commercialisation.

The Process of Obtaining Patent Protection in the UK

Examine Patentability

Go through the patentability checklist at the back of the information with a patent attorney to determine the most suitable type of protection. It may be that your invention or idea could be protected by another form of Intellectual Property such as a Design Right.

File an Application

This is done via a patent attorney. This sets out what your invention actually is and what you seek to protect about it. This is filed, for a UK application, through the UK Intellectual Property Office.

Preliminary Examination

There is a preliminary examination and a report issued about the formalities of the application, within 12-16 months, as well as a search report, detailing similar inventions that have been patented in the past. This can be responded to, and any objections can be addressed. If the objections of the examiners cannot be overcome, the application fails

Publication

If the application proceeds after the preliminary examination, the application is published after 18 months

Substantive Examination

This examination looks in detail at whether the invention fulfils the criteria for patentability, and again, can be appealed and responded to.

The Decision

The application is then either granted or rejected. The whole process normally takes 2 – 3 years, from filing to grant

International and European Patent Applications

Is there an International Patent?

There is no “International Patent” as such. Instead there is a system that generated International Patent Applications, known as a PCT Application. This uses the Patent Cooperation Treaty (which now contains over 130 member states across the world), as a central mechanism taking the place of many individual foreign patent applications. After a set amount of time, this central application (known as the International phase) will be converted into many individual foreign applications (known as Regional National phase), one in each country where protection is sought. These are then pursued individually to obtain full patent protection in those countries. Therefore it can be seen that the PCT does not actually “grant” patents, it is simply a centralised application process, which comes to an end upon entry into the Regional National phase.

The examination of the application is done during the International phase – although once it has entered the Regional National phase the individual countries can arrange new examinations and can reject the application.

What are the advantages of the PCT System?

As shown above in the diagram, the PCT system allows you to delay the expensive step of filing lots of individual foreign patents, and so gives you a chance to assess the viability of the invention and whether the scope of the protection gained justifies the high costs. It can also allow you to select the territories around the world that are likely to be of most benefit to you commercially.

How does the European patent System work?

The European Patent System is relatively similar to the UK patent system but also contains elements similar to the PCT system. There is a centralised application, either as an original application to Munich, or based on a previous UK filing (a priority filing). There is then search, publication and examination as in the UK system. The application then splits into national applications in “designated states”. These are the territories with Europe that you wish to gain protection in, and their designation requires payment of a fee. The patent will then come into force a bundle of national rights, with a patent in each of the designated contracting states. For more information on this, please see the diagram on page xxx

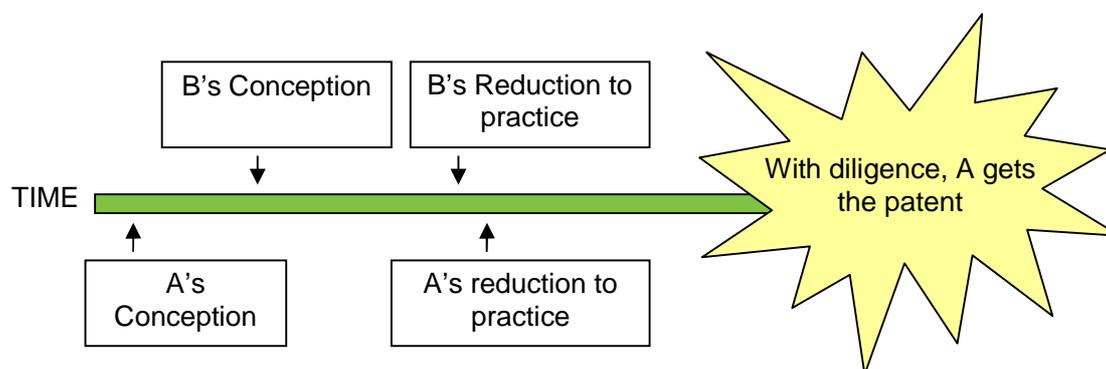
The US Patent System

Main Differences Between the US and UK Patent System

There are several differences between the UK and the US Patent System. The main ones include:

(1) First to File vs First to Invent

The UK operate a “First to File” system where the first person to file a patent on an invention is legally entitled to it, whereas the US operate a system of “first to invent” where the first person to file a patent may not necessarily be the person legally entitled to the invention. If another party can prove that they had the idea first, and were using all their efforts to reduce it to practice (i.e. to a working technique / prototype) then they may be entitled to the patent instead. This is demonstrated below.



(2) Grace Period

The US operates a system that gives an inventor 12 months to file a patent application after the first disclosure of an invention. In the UK, any disclosure that is “enabling” (i.e. allows the invention to be recreated by another party) immediately destroys patentability.

(3) The Inventors apply

In the UK, it is possible for companies and universities to apply for patents. In the US, it is necessary for the inventors to be named as the applicant and then ‘assign’ their rights to the company.

Effects that this may have on your patent application

- The First to File angle can be difficult for UK academics to take advantage of, due to the stringent nature of the evidence required to prove that the inventor was indeed the first to conceive the invention. (For more information on this, and how to overcome the criteria for proving that you were the first to conceive an idea, please see the section on Laboratory Notebooks.)
- The US (and a limited number of other states) offers a chance for some patent protection to be gained, even if a disclosure has been made, by means of the 12 month grace period. However, this should be thought of as more a ‘safety net’ rather than a strategy! This is why it is important to contact UCL Business before any presentations or publications.

- The formality of inventors as applicants can lead to a confusing array of paperwork from the US Patent Attorneys. It is required that the inventors sign a Declaration of Inventorship stating that they are the inventors and then an Assignment which assigns their rights back to their employer. (As noted above, in the UK the employer is the first owner of any patent rights arising out of the course of employment).

Trade Marks

What is a Trade Mark?

A trademark is a visual symbol that is used to identify visually where a product has come from, and can be used by consumers to identify a ‘family’ of products, i.e. ones that come from the same producer. A company trademark can be a guide for consumers as to the quality of the product, and so a good experience with one product in a trademark family can lead to the purchase of another in the family

When are they used?

A trade mark may be applied for when it is a name, or a logo, or some kind of insignia that is recognisable to the public that requires protection. In the Trade Marks act it must be “a sign capable of being represented graphically which is capable of distinguishing the goods or services of one undertaking from those of another undertaking”. In practice this means that the mark must be significantly different from any other sign so that the consumer is not confused into thinking that their goods are those of another business.

We sometimes use trade marks as a useful addition to other IP ‘packages’ such as patents or spin outs.

How do you get trade mark protection?

Trade marks can be protected in the UK by applying to the UK Intellectual Property Office, or internationally via the community Trade Mark office in Alicante. The UK initial application costs around £200 and will generally be complete in about a year. There is an examination as to whether your sign meets the criteria for registration – it must be distinctive, but cannot be descriptive of your goods or deceptive in any way. Your mark should also not include any marks such as royal insignia, the Olympic mark etc. If the mark is refused, there is the option to reply to the examiner also to ultimately to appeal the final decision. This, of course, adds to the costs and the length of the process.

Why should you use a Trade mark?

Trade mark protection can help a business to create a reputation based on the name and the quality of its products. This means that future products brought out by that company would benefit from the “goodwill” generated by the trade marked name, and could be the difference between completing or losing a sale. This could be vital to businesses providing a service, such as those providing testing kits, wet lab studies or physical analysis.

How can Trade Marks be enforced?

If a trade mark is thought to be “confusingly similar” to another mark, ie consumers are likely to be confused as to which business is behind which goods, the more recent mark will be refused registration, or will be struck off the register to protect the reputation of the more established mark.

Copyright

What is Copyright?

Copyright is an Intellectual Property right that regulates the creation and use of items such as books, songs, films and computer programs. It arises automatically on creation, and is chiefly for the benefit of the creator, as it governs the uses that can be made of the work. The right itself is not inconsiderable – it lasts for 70 years from the death of the author.

What can be protected?

Copyright protection is given to artistic, literary or musical works, films, broadcasts and computer software, regardless of merit. The main criteria for protection are:

1. It must be recorded in material form – ie it must be written down, or physically recorded in some way
2. It must be original in the sense that it is not copied from anyone else
3. The creator of the work must be connected either by domicile or business to the UK (to gain UK copyright protection). This is known as ‘qualification’.
4. It is not excluded on policy grounds, for example, it cannot be libellous, blasphemous etc.

If all of the criteria are satisfied, then copyright will automatically subsist – no registration of the right is required.

When can you invoke copyright protection?

Copyright grants an exclusive right for the creator to do, as well as preventing others from doing the following:

1. Copy the work
2. distribute the work
3. rent or lend it to the public
4. adapt the work for any use
5. Authorise others to do the work.

This right has been expanding over the years – protection is based on the idea of strict liability. Whether the infringer meant to infringe the creator’s copyright is irrelevant, the fact that it occurred is the important point. If an infringement occurs and this deprives the creator of the economic value of the copyright then they may be liable for damages.

Ownership of copyright

Copyright follows the same pattern as patents, where the first owner of an employee’s copyright is the employer, provided that it was made in the course of the employment, and there is no contractual agreement to the contrary. However, in copyright, the author of the work retains the moral rights to the creation. This gives the author certain non pecuniary rights, such as the right to be identified as the author of the work, and the right to maintain the integrity of his work i.e. he can

prevent the distortion or mutilation of his work. Infringement of the moral rights of an author can result in damages if a breach can be proved.

As mentioned on page X, academic copyright e.g. in text books, personal teaching materials and academic publications will vest in the individual academic.

Design Rights

What is a design?

The appearance of a product, in particular, the shape, texture, colour, materials used, contours and ornamentation. To qualify as a new design, the overall impression should be different from any existing design.

What is an Unregistered Design Right?

Unregistered design rights protect the shape or configuration of a marketable (or potentially marketable) product, and are used to prevent unauthorised copying of an original design. Design rights can also be bought, sold or licensed in a similar manner to copyright. Design rights exist independently of copyright, while copyright may protect documents detailing the design as well as any artistic or literary work incorporated within the finished product, the design right focuses more on the shape, configuration and construction of a product.

In the UK, unregistered design rights have been available since 1989, and have been available since March 2002 throughout the European Community. Unregistered design rights are automatic and are treated in the similar manner as copyright. For this reason they may be registered with the UK Copyright Service in the same manner as copyright work in order to establish proof of the date and content of the work in case of any later dispute or legal claims

In the UK rights the duration is 10 years from the end of the calendar year in which the design was first made into a marketable product. The original date the design was first fixed in a tangible form is also taken into account, and the duration should not exceed 15 years from the end of the calendar year in which the design was first recorded. The UK 10 year duration is split into two 5 year periods: Exclusive rights are retained for the first 5 years, but during the last 5 years other parties are allowed to apply for licenses to the design (for which the owner may claim royalties).

What is a Registered Design Right?

A registered design may be applied for to provide additional cover over and above any design right or copyright protection that may exist in the design. Registered designs are administered by the Office for Harmonization in the Internal Market (Trade Marks and Designs) in the EU, and the UK Patent Office in the UK.

In the US designs may be registered as part of the standard patent system via the United States Patent and Trademark Office, where they are treated as 'design patents', (as opposed to 'utility patents').

The benefit of a registered design is that the design may enjoy prolonged protection from copying, although this protection would only be available in countries or territories where the application was made, up to 25 years protection is available in the UK and EC.

UCLB have a dedicated Art and Humanities Business Manager that deal with issues more often faced by these disciplines, such as Design Rights and the protection of Copyright.

Confidential Disclosure Agreement (CDA)

What is a CDA?

A confidentiality agreement protects information that is in the hands of one party from being made public during discussions with another party. It is a legally binding document based on the law of confidence which prevents others from disclosing sensitive information. It operates as an important supplement to the statutory intellectual property regime and records the terms under which you exchange information.

A CDA can be described as one-way, if only one party is disclosing the information, or two-way if there is going to be an exchange of information

When would you use a CDA?

A CDA can be useful when discussing a new product or process with a new investor or with another party if considering a collaboration as sharing commercially valuable or sensitive knowledge requires a high degree of mutual trust. Without a CDA in place, you may not be able to disclose enough information to get an investor interested.

Failing to put the proper measures in place could potentially destroy patentability, and even lead to the ‘theft’ of the information.

What is contained in a CDA?

A CDA contains the legally binding conditions under which you can share information with another party. Types of clauses include:

- definition of confidential information
- obligations on the receiving party as regards disclosure
- limitations of the use of the information
- return of the information, either when the agreement is terminated (for a breach of the agreement) or expires at the end of its term
- The governing law, should there be any disputes.

Material Transfer Agreements

What is a Material Transfer Agreement (MTA)?

An MTA is a legally binding agreement that governs the transfer / exchange and use of research materials from the owner to the organisation who wishes to use the materials for their research purposes. These can be put in place as stand alone agreements – it is not necessary that an official collaboration exists between parties.

What kind of information is required for an MTA?

For an MTA to be effective, certain points must be addressed:

- Clearly and precisely define the material and the field of use
- Clearly outline any restrictions on the recipients use of the material
- Highlight the confidentiality obligations on the recipient, and their freedom (or not) to publish results obtained whilst using the material
- Define the providers rights to the results of the work
- Provide a warranty disclaimer and indemnification (if the samples turned out to be not –as – described)
- The governing law in case of disputes – this must be English law (if there are issues as regarding the ‘choice’ of law, it is often better to stay silent of the issue)

How can an MTA be arranged?

Before entering into any agreements regarding the transfer of materials, it is best to have an MTA in place. UCLB can arrange for MTA’s to be put in place and signed by the correct people. For more information, please contact Mars Bai, m.bai@uclb.com

Laboratory notebooks

What is a Laboratory Notebook?

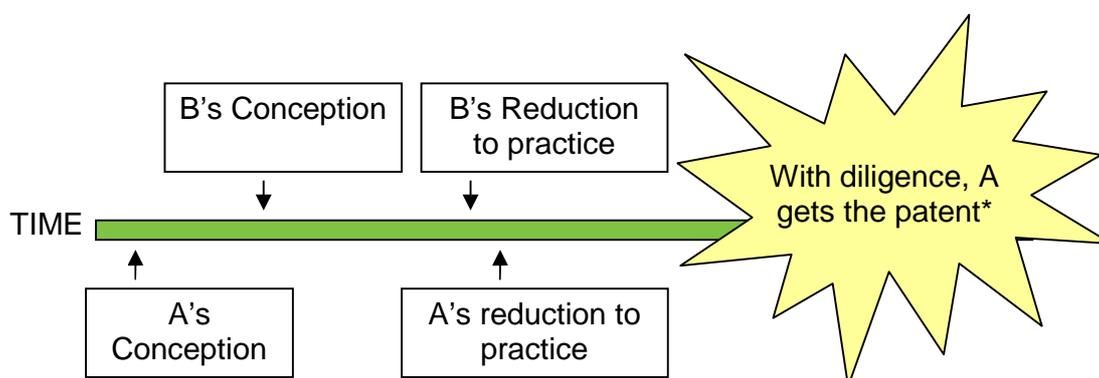
A laboratory notebook is a complete record of all the work and results that are created in a laboratory, with each page dated and signed by the inventor and then countersigned by a senior laboratory manager.

Why should you keep a Laboratory Notebook?

Many inventors are used to keeping detailed notebooks in their laboratories, with the aim of publication in a peer reviewed journal. However, the standard required for a notebook to be able to be used in court, should there be any legal challenges regarding the identity or contribution of other parties, is significantly higher. This can include steps such as signatures and counter signatures on each page, or group of pages, and initialling any changes. The idea is that the notebook should be treated as a legal document, not just a record of results.

The strength of the notebook can be vital when deciding to patent a research outcome, especially in the US. It can prove that the inventor conceived the idea originally (and show the date of this) and that the inventor has used due diligence to reduce the invention to a practical prototype (or if the invention is not in a practical form yet, that all steps have been taken to reach that point). It can also help to explain any large gaps in the work, for example, where equipment has been delayed, which otherwise may count against an inventor in an entitlement dispute (as diligence could not be shown).

An example based on the US Patent System:



(*If diligence cannot be proved eg by a laboratory notebook, B will get the patent)

It can also be invaluable when preparing to write grant applications, or when preparing for publication.

Therefore, it can be demonstrated that any inconvenience caused by keeping a good laboratory notebook is more than outweighed by the potential benefits.

How should a Laboratory Notebook be kept?

Ideally, all information should be kept in a single notebook, but where that is not practical, e.g. experiments are done in different labs / countries etc, the notebooks should be cross referenced.

The notebook should be stored safely for 6 years – this is the limit of when court action can be brought under a patent.

Key points for a legally acceptable laboratory notebook:

- It should ideally be an indexed, bound paper notebook
- Any changes or additions should be initialled and dated, with abbreviations defined
- The date of conception of the idea should be clearly recorded
- It should be a complete chronological record of all the experiments that take place – but care should be taken to avoid using words such as ‘failure’ which could count against diligence. Any blank pages should be crossed through to limit any chance of accusations of tampering
- All essential facts should be recorded, such as equipment and conditions
- Experiments that go across several pages should be clearly referenced
- If a standard method is used, provide a reference where the full method can be found e.g. "The DNA sequence was determined by the method of Maxam and Gilbert (1977) PNAS USA 74:560-564
- All results should be stuck in and dated and there should be a signature across the join – where results may degrade over time, they should be converted to a more permanent form (e.g. scanned or photocopied) and attached.
- Conclusions about the work should also be included wherever possible to satisfy the ‘reduction to practice’ element of patenting.
- Every page should be signed and dated, and then counter signed by a non-inventor witness
- A custodian should be appointed who is in charge of the notebooks. The notebook should be stored safely for 6 years – this is the limit of when court action can be brought under a patent.

Glossary

- **Assignment** – an agreement that covers the transfer of property between parties, e.g. from an Inventor to UCL. This is either with payment of a fee (a contract) or where there is no financial consideration (a deed)
- **Confidential Disclosure Agreement** – a binding contract that sets out the terms under which sensitive information is shared between parties.
- **Copyright** – a form of intellectual property governed by the Copyright, designs and Patents Act 1988, dealing with aesthetic, literary, musical and dramatic works, as well as with software and databases
- **Registered Design right** – this is governed by the 1949 Registered Designs Act and offers protection for the design of industrial objects, packaging etc.
- **Grace Period** – A US phenomenon, where an inventor has a 12 month period after disclosure of an invention in which to file a patent in the US
- **Invention Disclosure** – in the context of UCL Business this relates to the form that an inventor will fill in when contacting UCL Business to allow assessment of the invention and its IP and commercialisation value
- **Inventor** – as defined under the 1977 Patents Act, it relates to the person responsible for an invention
- **Know how** - the associated information along side traditional protectable intellectual property that can have commercial value, either alone, or when considered in conjunction with patents
- **Licence** – a document that gives permission to licensees to complete certain activities with regard to the licensors rights. The document will include a description of the rights, the fees to be payable and any restrictions on the territory in which the licensee can exercise the rights
- **Material Transfer Agreement** – an agreement relating to the non commercial transfer of property between research organisations.
- **Moral rights** – the non commercial rights afforded to an individual that cannot be assigned or licensed with regard to intellectual property
- **Patent** – a monopoly right granted to an invention that is new, not obvious, and capable of industrial application without falling outside the accepted categories of inventions
- **Trade mark** – a mark or logo that adds value to goods associated with a particular company, by virtue of being recognised by consumers.