CPSBB Inventor's Guide to Technology Transfer

The CPSBB is where research excellence comes together with an entrepreneurial spirit. CPSBB'S inventors tackle global challenges and solve real problems.

Innovation comes in many forms, follows many pathways, and emerges from many disciplines. Our inventors have a common passion for ideas and a willingness to take risks.

MISSION

The CPSBB Department of Technology Transfer and IP management (TT&IPM): our mission is to promote the transfer of CPSBB technology for society's use and benefit while generating unrestricted income to support research and education at the center. TT&IPM is committed to nurture and manage CPSBB's IP portfolio, supporting CPSBB by fostering research collaborations among scientists, entrepreneurs and corporations to speed innovation and catalyze commercialization of technologies. We work synergistically with Inventors to promote research that leads to IP.

CPSBB Inventor's Guide to Technology Transfer

This guide is designed to answer the most common questions TT&IPM department typically experiences from the CPSBB researchers and provides a broad overview of the technology transfer process and services available for departments, researchers, staff and student-staff.

I. OVERVIEW: TECHNOLOGY TRANSFER IN GENERAL

WHAT IS TECHNOLOGY TRANSFER?

WHAT CAN BE TRANSFERED?

Technology transfer is the movement of knowledge and discoveries from academics to industry for the benefit of general public. It occurs in many ways: through research publications, exchanges at scientific conferences, and informal and formal relationships with industry. Most importantly, technology transfer occurs via educated students entering the workforce.

For the purposes of this guide, however, technology transfer (commonly known as "tech transfer") is considered in limited sense to refer to the formal licensing of technology and intellectual property to third parties—only this?? Why not commercial collaborations which is more common than licensing may be, where TT also occurs

WHAT IS INTELLECTUAL PROPERTY?

Intellectual property (IP) refers to creations of the mind, such as inventions; literary and artistic works; designs; and symbols, names and images used in commerce. Intellectual property (also known as "intangible property") is different from "tangible property" such as land, a building, a computer, etc. Intellectual property may be protected under the patent, trademark, trade secret, and/or copyright laws.

WHY DO RESECHERS PARTICIPATE IN THE TECHNOLOGY TRANSFER PROCECESS?

The reasons are unique to each researcher and may include: Making a positive impact on society; Seeing their ideas or inventions put into practice; Feeling a sense of personal fulfillment; Achieving recognition and financial rewards; Generating additional research funding; Meeting the obligations of a research contract; Attracting research sponsors; Enriching educational opportunities for students and etc.

HOW IS THE TECHNOLOGY TRANSFERRED?

a) Technology is typically transferred through a license agreement in which the rights in the defined technology are transferred to a third party for a period of time, often limited to a particular field of use and/or region of the world, or sold completely. The licensee (the third party licensing the technology) may be an established company or a new business start-up.
b) Licenses are contracts that include terms requiring the licensee to meet certain performance requirements and to make financial payments (some of which are royalties) to CPSBB. After the legal and marketing costs associated with the licensed technology have been recouped, significant portions of royalties are shared with the inventor(s). Other portions of royalties received are used to provide support for further research, education, and participation in the technology transfer process using the money from IP and Commercialization Fund.
c) During cooperative projects between academics and industry, the technology/knowledge is also transferred from academics partner to Industry for co-development of a product/service. Such technology transfer operations are supported by specific collaboration and Joint IP ownership agreements.

II. THE TECH TRANSFER PROCESS AT CPSBB

WHAT IS THE DIPM&TT ROLE IN TECHNOLOGY TRANSFER?

In brief, the TT&IPM department licenses intellectual and tangible property to industry and arranges collaboration opportunities with industrial sector.
Specifically, DIPM&TT tries to find the best and most relevant companies to develop and commercialize inventions.
We: advice on CPSBB's Inventions Policy; evaluate promising technologies/know-how generated by CPSBB's staff and students; Support the protection of CPSBB inventions through patenting and other means; market them to industry with the hope of finding companies interested in developing products based on the technology; negotiate license agreements with the interested companies (i.e., licensees; maintain long-term relationships with the companies developing products based on the licensed technology. Revenue management?
DIPM&TT negotiates industry sponsored research agreements, material transfer agreements, collaborations, and other research agreements with a significant intellectual property component.
A license granted may be **non-exclusive**, which gives any qualified company the right to develop products based on the technology, or **exclusive licence.** In an exclusive licence, the parties agree that no other person/legal entity can exploit the relevant IPRs, except the licensee.
The licensee may be an established company or a new business start-up. Licenses include terms that require the licensee to meet certain performance requirements (also known as diligence requirements) and to pay royalties to the CPSBB. These royalties are shared with the inventors, the inventors' departments and IP and commercialization Fund to provide support for further research and education.

HOW DO I WORK WITH TT&IPM DEPARTMENT?

We encourage you to contact DIPM&TT during your research activities to be aware of the options that will best support the commercial potential of your research. We can assist with questions related to marketability, funding sources, commercial partners, patenting and other protection methods, new business start-up considerations, CPSBB policies and procedures, and much more.

WHAT ARE THE TYPICAL STEPS IN THE PROCESS?

The process of technology transfer is summarized in the following steps. Steps may vary in sequence and often occur simultaneously. The steps can be generalized as:

1) **Research Step**

Observations and experiments during research activities often lead to discoveries and inventions. An invention is any useful process, machine, composition of matter (e.g., a chemical or biological compound), or any new or useful improvement of the same. Often, multiple researchers – including trainees and research staff – may have contributed to an invention and may be inventors.

2) Invention Disclosure Step

This written notice of invention to TT& IPM Department begins the formal technology transfer process. The Invention Disclosure is a confidential document, and should fully describe the new aspects of your invention, including the critical solution it provides and its advantages and benefits over current technologies.

3) Assessment Step

We will review the invention disclosure, conduct patent searches (if applicable), and analyze the market and competitive technologies to assess the invention's commercialization potential. The assessment process will guide our strategies for protection, publication, marketing and licensing.

4) Decision Step

The TT& IPM Department will give an evaluation report to inventors who have disclosed the invention. An 'action plan' will be devised by DIPM&TT mutually with the inventor and the decisions will be made towards protection/publication/commercialization of the invention.

5) Protection Step

Patent protection, a common legal protection method, begins with the filing of a patent application with the EU or BG Patent Office and, when appropriate, foreign patent offices.

Other commonly used forms of intellectual property protection include copyright and trademark. Unique biological materials and software can often be successfully licensed without formal intellectual property protection.

6) Marketing Step

CPSBB is committed to broadly marketing all technologies to appropriate companies that could be interested in commercializing the particular invention. With your help, we will create a marketing overview of the technology, and identify and contact candidate companies that have the resources and business networks to bring the technology to market.

7) **Identifying the Potential Licensee(s)**

If there are several parties interested in a license, we will endeavor to license non-exclusively or grant field-of-use licenses, if possible. If it is not possible to accommodate all interested parties, we will license the company most committed and able to bring the technology to the marketplace. Typically, there is only one interested party or none at all.

8) License Negotiation and Execution Step

The TT& IPM Department negotiates and executes a license agreement. This agreement is a contract between the CPSBB and a company in which certain CPSBB rights to a technology are granted to a company in return for financial and other benefits. An option agreement is sometimes used to allow a company to evaluate the technology for a limited time before a formal license agreement is concluded.

9) Commercialization Step

Most inventions are very early stage and require further research and development efforts. The licensee company typically makes significant business investments of time and funding to commercialize the product or service. This step may entail regulatory approvals, sales and marketing, support, training, and other activities

Revenue Step

Royalties received by the CPSBB from licensees are distributed according to the IP policy to inventors, CPSBB and CPSBB's IP Fund to fund additional research and education.

HOW LONG DOES THE TECH TRANSFER PROCESS TAKE?

The amount of time will depend on the development and validation stage of the technology, the market for the technology, the amount of work needed to bring a new concept to the marketplace, and the resources of the licensee.

WILL I BE ABLE TO PUBLISH THE RESULTS OF MY RESEARCH AND STILL PROTECT THE COMMERCIAL VALUE OF MY INTELLECTUAL PROPERTY?

Since patent rights are affected by publication, we strongly encourage you to submit an **Invention Disclosure Form** into TT& IPM Department well before any public communication or disclosure of the invention. Once publicly disclosed (published or presented in some form), an invention may have restricted or minimal potential for patent protection in countries with a "first to file"patent system. 'Protection before publication' could often be a smarter strategy. **Publication after filing the patent application is possible.**

WHAT IS MY ROLE?

• **Tell us about the invention.** Complete and submit the Invention and Technology Disclosure Form.
In order to preserve potential patent rights, we strongly encourage you to disclose your invention *before* publicly describing in a presentation, lecture, poster, abstract, website description, research proposal, dissertation/master's thesis, publication, or other public presentation of the technology. It is also very important that laboratory notebooks are well maintained in order to document the conception and reduction to practice of an invention.
• **Help us to prepare marketing materials and identify potential licensees.**
On the Invention Disclosure Form, include companies and contacts you believe might be interested in your intellectual property (IP)/know-how or who may have already contacted you about your invention. We will also ask for your input when creating non-confidential marketing materials to share with potential licensees.
• **Respond to the TT& IPM Department and outside patent attorney requests.** If we decide to pursue patent protection for the invention then you will need to review the patent application for completeness and accuracy prior to filing the application.
• **Keep the TT&IPM Department informed.** Please let us know about significant technology developments, upcoming publications and interactions with companies related to your invention work.

OWNERSHIP OF INTELLECTUAL PROPERTY at CPSBB

- All rights in Intellectual Property devised, made or created by an employee of CPSBB having legal employment contract only with CPSBB, in the course of his or her duties and activities of employment shall belong automatically to the CPSBB.
- When the invention has been created on the basis of a contract with third party, the right of declaration belongs to the contracting authority unless otherwise provided in the contract.
- External Researchers/ Employees having multiple affiliations: The rights in Intellectual Property devised, made or created by an employee/ External researcher having additional affiliation than CPSBB shall be mutually agreed between CPSBB and the other institute, based on a separate Collaboration and Joint IP ownership agreement.

WHO OWNS WHAT I CREATE?

As a general rule, the CPSBB owns inventions made by its employees while acting within the scope of their employment or using CPSBB resources.

- Ownership depends largely upon the employment status of the inventor and their use of CPSBB facilities.
- What is the source of the funds or resources used to produce the invention?
- What are the terms of any agreement(s) related to the creation of the intellectual property?

RESEACH CONSIDERATION

May I use material from others in my research?

Yes, if the other party is willing to share materials. It is important to document carefully from whom and under what conditions you obtained materials so that we can determine if your use may impact the ownership rights of a subsequent invention or technology.
If you wish to obtain materials from outside sources, an incoming Material Transfer Agreement (MTA) will be required.

What rights does a corporate research sponsor have to any discoveries associated with my research?

The Sponsored Research Agreement will usually contain provisions pertaining to intellectual property (IP).

SUBMITTING AN INVENTION DISCLOSURE TO CPSBB

An Invention Disclosure is a written description of your invention or development provided to the TT& IPM Department. The disclosure lists all sources of support and includes information necessary to begin pursuing protection and commercialization activities. In order to keep all options open for pursuing patent rights, it is very important to disclose inventions prior to publication.

1) How do I submit information on an invention/technology/innovation to the TT& IPM Department?

- To officially inform CPSBB of a new invention, complete the invention disclosure form, available from the CPSBB website. The innovators should then print and sign the invention disclosure form and send the signed document.

- A completed Invention Disclosure Form remains a confidential document at all times and should fully document your invention so that the options for patentability, commercialization and other critical factors can be evaluated.

2) Should I list visiting scientists or scientists at other institutions on my invention disclosure?

- All contributors to the ideas leading to a discovery should be mentioned in your disclosure, even if they are not CPSBB employees.

ASSESSMENT OF AN INVENTION DISCLOSURE

1) How does CPSBB assess Invention Disclosures?

- The TT&IPM Department team in conjunction with outside patent experts examines each Invention Disclosure Form to review the novelty, utility, and non obviousness of the invention, protectability and marketability of potential products or services, relationship to related intellectual property, size and growth potential of the relevant market, amount of time and money required for further development, pre-existing rights associated with the intellectual property (IP). This assessment may also include consideration of whether the intellectual property can be the basis for a new business start-up.

- If the TT& IPM not to pursue patent protection and/or chooses not to actively market the invention, the CPSBB may transfer ownership to the inventor(s).

PATENTING

What is a patent?

A patent gives the holder the right to exclude others from making, using, selling, offering to sell, and importing the patented invention.

What type of subject matter can be patented?

Patentable subject matter includes processes, machines, compositions of matter, articles, some computer programs, and methods.

Can someone patent a naturally occurring substance?

Generally, no. A natural substance that has never before been isolated or known may be patentable in some instances, but only in its isolated form (since the isolated form had never been known before). A variation of a naturally occurring substance may be patentable if an inventor is able to demonstrate substantial non-obvious modifications that offer advantages of using the variant.

What is the European Patent Organisation?

It is an intergovernmental organisation that was set up on 7 October 1977 on the basis of the European Patent Convention (EPC) signed in Munich in 1973. It has two bodies, the European Patent Office and the Administrative Council. The European Patent Office, the executive arm of the European Patent Organisation, offers inventors a uniform application procedure which enables them to seek patent protection in up to 44 countries.

What is the definition of an inventor on a patent?

a) Under EU law, an inventor is a person who takes part in the conception of the ideas in the patent claims of a patent application. Inventorship is a legal issue and may require an intricate legal determination by the patent attorney prosecuting the application.

What is the patenting process?

Patent applications are most often drafted by a patent attorney. The OTT generally will ask you to review an application before it is filed and will also ask you questions about the inventorship of the application claims. At the time an application is filed, the patent attorney will ask the inventor(s) to sign an Inventor's Declaration and an Assignment, which evidences the inventor's duty to assign the patent to the CPSBB.

In about one year or longer, depending on the type of technology, the patent attorney will receive written notice from the patent office as to whether the application and its claims have been accepted in the form as filed.

If the application is rejected, the patent attorney must file a written response, usually within three to six months. Generally, the attorney may amend the claims and/or point out why the patent office's position is incorrect. **This procedure is referred to as patent prosecution.**

The resolution can take the form of a notice that the application is allowable; in other words, the patent office agrees to issue a patent. During this process, input from the inventor(s) is often needed to confirm the patent attorney's understanding of the technical aspects of the invention and/or the prior art cited against the application. The patent office holds patent applications confidential until published. **The EPO publishes applications 18 months after initial filing.**

Is there such a thing as an international patent?

Although an international patent does not exist, an international agreement known as the Patent Cooperation Treaty (PCT) provides a streamlined filing procedure for most industrialized nations. The PCT application must later be filed in the national patent office of any PCT-participating country in which the applicant wishes to seek patent protection, generally, within 30 months of the earliest claimed filing date.

What is a copyright?

Copyright is a form of protection provided by the laws of Bulgarian law to the authors of "original works of authorship." This includes literary, dramatic, musical, artistic, and certain other intellectual works as well as computer software. Copyright protection is automatically secured when a work is fixed into a tangible medium such as a book, software code, video, etc.

What is a trademark?

A trademark includes any word, name, symbol, device, or combination that is used in commerce to identify and distinguish the goods of one manufacturer or seller from those manufactured or sold by others, and also to indicate the source of the goods. In short, a trademark is a brand name.

What is the policy on trade secret?

The CPSBB generally does not keep trade secrets because research results are routinely disclosed to others and published widely. However, tangible research property (e.g., biological material) can be licensed as know-how.

MARKETING TO FIND A LICENSEE

How does CPSBB market my inventions?

TT&IPM department staff uses many sources and strategies to identify potential licensees and market inventions. Market research can assist in identifying prospective licensees. We also examine other complementary technologies and agreements to assist our efforts. We use our website to post inventions, leverage conferences and industry events, and make direct contacts. Faculty publications and presentations are often excellent marketing tools as well.

How can I assist in marketing my invention?

Your active involvement and enthusiasm can dramatically improve the chances of matching an invention to an outside company. Your research and consulting relationships are often helpful in identifying both potential licensee companies and technology champions within those organizations. Once interested companies are identified, the inventor is the best person to describe the details of the invention and its technical advantages. The most successful tech transfer results are obtained when the inventor and the licensing professional work together as a team to market and promote the technology.

How long does it take to find a potential licensee?

It can take sometimes years to locate a potential licensee, depending on the attractiveness of the invention, its stage of development, competing technologies, and the size and intensity of the market. Most inventions tend to be in the early stage in the development cycle and thus require substantial commercialization investment, making it difficult to attract a licensee.

Can there be more than one licensee?

Yes, an invention can be licensed to multiple licensees, either nonexclusively to several companies or exclusively to several companies, each for a unique field-of-use (application) or geography.

LICENSES AND OTHER AGREEMENTS

What is a license?

A license is a permission that the owner or controller of intellectual property grants to another party, usually under a license agreement. A license is a type of contract.

What is a license agreement?

License agreements describe the rights and responsibilities related to the use and exploitation of intellectual property developed at the CPSBB.

How is a company chosen to be a licensee?

A licensee is chosen based on its ability to commercialize the technology for the benefit of the general public.

What can I expect to gain if my IP is licensed?

Per the CPSBB CoP on Sharing of Revenue, a share of any financial return from a license is provided to the inventor(s). New and enhanced relationships with businesses are another outcome that can augment one's teaching, research and consulting. In some cases, additional sponsored research may result from the licensee.

COMMERCIALIZATION

What activities occur during commercialization?

Most licensees continue to develop an invention to enhance the technology, reduce risk, prove reliability, and satisfy the market requirements for adoption by customers.

What is my role during commercialization?

Your role can vary depending on your interest and involvement, in the interest of the licensee in utilizing your services for various assignments, and any contractual obligations related to the license or any personal agreements.

What revenues are generated for the CPSBB if commercialization is successful?

If commercialization is unsuccessful? a) Most licenses have licensing fees that can be very modest, such as in those cases where the technology is licensed to a start-up, or situations in which the value of the license is deemed to warrant a modest license fee. Royalties on the eventual sales of the licensed products can generate revenues, although this can take years to occur. Equity, if included in a license, can yield returns, but only if a successful equity liquidation event (public equity offering or a sale of the company) occurs. Most licenses do not yield substantial revenues.

ROYALTY DISTRIBUTION

How are license revenues distributed?

The TT&IPM Department is responsible for managing the expenses and revenues associated with technology agreements. Per CPSBB Policy and regulations, revenues from license fees, royalties and milestone fees, minus any unreimbursed patenting, marketing, and administrative expenses, are shared with inventors.