NOTE
This booklet is based on the University of Michigan's "Inventor's Guide to Technology Transfer" with adaptations for Innovate Calgary and the University of Calgary. We are very grateful to Ken Nisbet and the staff of the UM Office of Technology Transfer for their kind permission to use their excellent material and to the University of Michigan for permission to use its copyright.

Innovate Calgary is dedicated to the growth of southern Alberta's technology sector, and provides a wide variety of technology transfer, company creation, entrepreneur development and investor development programs and services to entrepreneurs, businesses, investors and university researchers.

Innovate Calgary is the technology transfer and business incubation centre for the University of Calgary.

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VISION
- Calgary will be one of the leading innovation eco-systems in Canada.
- Innovate Calgary will be the leading organizational model driving the innovation eco-system success.

MISSION
To accelerate, facilitate and support innovation in the technology sector.
Innovate Calgary is committed to supporting the University of Calgary’s Academic and Research Plans, including the University’s Eye’s High Vision of becoming one of Canada’s top five research universities through providing the resources and expertise that enables the transfer of innovation to market.
Universities are a key source of new discovery through research and development (R&D) that provide significant societal, industrial, and economic benefit through commercialized innovation, inventions and discoveries.

**WHAT IS TECHNOLOGY TRANSFER?**
Technology transfer is the process of transferring skills, knowledge, technologies, methods of manufacturing, samples of manufacturing and facilities among governments, or universities and other institutions to ensure that scientific and technological developments are accessible to a wider range of users. These users can then further develop and exploit the technology into products, processes, applications, materials or services. It may also be considered as a process of moving promising research topics into a level of maturity ready for bulk manufacturing or production.¹

For the purposes of this guide, technology transfer refers to the creation of a new company and/or the formal licensing of technology to third parties facilitated by other University or independent Technology Transfer Offices, research foundations and industry partnerships.

**WHY PARTICIPATE IN THE TECHNOLOGY TRANSFER PROCESS?**
The reasons are unique to each researcher and may include:

- Making a positive impact on society
- Feeling a sense of personal fulfillment
- Achieving recognition and financial rewards
- Generating additional lab/departmental funding
- Meeting the obligations of a research contract
- Attracting research sponsors
- Creating educational opportunities for students
- Linking students to future job opportunities

**HOW IS TECHNOLOGY TRANSFERRED?**
Technology is commonly transferred through a license agreement in which the Licensor grants its rights in the defined technology to a third party (the licensee) for a period of years, often limited to a particular field of use and/or region of the world. Licensees are often established companies; however, they can also include new business startups. In the case of startups, technology may also be transferred into the company in exchange for equity.

Although licensing terms are unique to each agreement, common licensing terms include licensee requirements for attaining certain performance metrics and financial payments to the Licensor. It is important to note that financial payments are shared between the inventors and the University of Calgary, and Innovate Calgary if the researcher chooses to work with Innovate Calgary.

**WHAT IS INNOVATE CALGARY?**
Innovate Calgary is a full service organization that fosters the advancement of technology to business for researchers, entrepreneurs, technology companies and investors within the advanced technology sector.

We are the technology transfer and incubation centre for the University of Calgary and work closely with the Research Services Office (RSO) and the Office of the Vice-President Research.

Our team consists of highly qualified and experienced individuals in licensing, legal and business development related to the transferring of technologies from physical sciences, life sciences, and information and computer sciences relative to intellectual property. Innovate Calgary manages invention disclosures from all university departments, institutes, research groups and schools within the University of Calgary campus.

For more information, visit innovatecalgary.com or call Innovate Calgary at 403.284.6400, or our satellite location in the Faculty of Medicine at 403.210.7465.
THE COMMERCIALIZATION PROCESS

WHY WORK WITH INNOVATE CALGARY?
Innovate Calgary can provide researchers with a broad portfolio of services including technology and market assessment, licensing of intellectual property to industry, access to commercial partners and investors, intellectual property protection, access to University of Calgary policies and procedures, funding, and assistance with new business startup. Additionally, Innovate Calgary provides mentoring, coaching and training for entrepreneurs.

Each technology disclosed to Innovate Calgary is assigned to an analyst and Licensing Manager to support the assessment process, work with internal legal and accounting teams to gain a comprehensive understanding of the technology and to strategize the best approach in developing and commercializing the technology. If a new business startup is considered, a Company Creation representative will also be assigned to support the assessment process.

Connecting with our organization during early research activity is highly recommended in order to be made fully aware of the options that will best leverage the commercial potential of your research.

WHAT ARE THE TYPICAL STEPS OF THE COMMERCIALIZATION PROCESS?
The process of commercialization is summarized below and can be referenced in the diagram that follows. Note that these steps can vary in sequence and often occur simultaneously.

1. RESEARCH
During research activities, observations and experiments often lead to discoveries and inventions. An invention is any useful process, machine, composition of matter, or any new or useful improvement of the same. Often, multiple researchers may contribute to an invention.

2. PRE-DISCLOSURE
Early contact with Innovate Calgary is encouraged to discuss your invention and to provide guidance with respect to the disclosure, evaluation and protection processes described below.

3. INVENTION DISCLOSURE
Submitting an Invention Disclosure Form (IDF) begins the formal commercialization process. Forms can be submitted online via the University Researcher Portal or through Innovate Calgary’s website at: www.ucalgary.ca/research/tools/legal_ip/forms or www.innovatecalgary.com/submit-your-invention-disclosure. Researchers can elect to work with Innovate Calgary or the University of Calgary’s Research Services Office to commercialize an invention. All submitted IDFs are confidential.

4. ASSESSMENT:
Invention disclosures provided to Innovate Calgary are appointed to an analyst who will assess the commercial potential for the disclosed invention. The analyst will schedule an initial review and will be in regular contact with the inventor during the 30 day assessment process to ensure a complete understanding of the disclosed invention.

The assessment includes determination of: patentability for the technology, marketability, potential market size, whether the technology provides a solution for an industry-relevant problem, and potential licensees. Any Research Agreements relevant to the disclosure will be examined to understand any relevant third party obligations.

Once the assessment is complete, the analyst will provide the inventor with a written report within 30 days of the initial invention disclosure.

5. ENGAGEMENT AGREEMENT
An Engagement Agreement for assistance with the commercialization of the disclosed invention is issued, provided the disclosed technology has commercial potential and the inventor elects to continue working with Innovate Calgary. The agreement is signed between the inventors of the disclosed technology and Innovate Calgary, which formalizes the relationship between the two parties. The Engagement Agreement assigns the ownership of the disclosed technology to Innovate Calgary and defines the services to be provided by Innovate Calgary including the revenue sharing percentages among the inventors. Upon assignment, Innovate Calgary assumes Intellectual Property (IP) management and licensing responsibilities, including the responsibility for all associated costs.

6. PROTECTION
In many cases, patent protection is necessary. Patent protection begins with the filing of a provisional patent with the U.S. Patent Office. Once a provisional patent application has been filed, it will require several years and tens of thousands of dollars to obtain an issued patent. When working with Innovate Calgary, all patent costs are assumed by Innovate Calgary. Other protection methods include copyright, trademark, trade secrets, and contractual use restrictions (e.g., for databases and materials).

7. MARKETING
Innovate Calgary is committed to broadly market all inventions to appropriate companies that have expertise, resources, and business networks to bring the invention to market. This typically involves partnering with an existing company, but could include forming a startup. A full time Innovate Calgary marketing assistant supports this process. Your active involvement is vitally important.

8A. EXISTING BUSINESS
If an appropriate and interested existing company/companies, is/are selected as a potential licensee, Innovate Calgary Licensing Managers will work to develop the appropriate financial and diligence terms to fully commercialize the technology.

8B. FORM A STARTUP
If the creation of a new business startup is elected as the optimal commercialization path, Innovate Calgary Company Creation specialists will work as business formation consultants to assist in planning, forming, and funding the startup. (See page 27 for more details).

8C. ENTREPRENEUR DEVELOPMENT PROGRAM
If licensing or forming a startup is not an option, or even if the inventor chooses to work independently, Innovate Calgary offers assistance through its Entrepreneur Development program. (See page 30 for more details).

8D. LICENSING
A license agreement is a contract between the Licensor (Innovate Calgary) and a Licensee (the third party to which the Licensor’s rights to a technology are transferred without relinquishing ownership) for financial and other benefits. A license agreement is used with both a new startup business or with an established company, although the technology may alternatively be assigned into a startup company instead of licensed in. An option agreement is sometimes used to enable a third party to evaluate the invention for a limited time prior to committing to a licensing agreement.

9. COMMERCIALIZATION
The Licensee continues the advancement of the technology and makes other business investments to develop the product or service. This step may entail further development, regulatory approvals, sales and marketing support, training, and other activities.
10. REVENUE

Revenues received from licenses are distributed according to the Engagement Agreement between the inventor or inventors, the University of Calgary and Innovate Calgary. Innovate Calgary uses all of its licensing revenue to fund further commercialization activities and will manage the University of Calgary’s revenue and company equity, if applicable. The revenue split between multiple inventors is defined in the Engagement Agreement discussed previously.

HOW LONG DOES THE TECH TRANSFER PROCESS TAKE?

The process of protecting the technology and finding the right licensing partner can take months to years. The amount of time will depend on the development stage of the technology, the market need for the technology, competing technologies, the amount of work needed to bring a new concept to market-ready status, and the resources and active involvement of the licensees and the inventors.

HOW CAN I HELP IN THIS PROCESS?

- Call Innovate Calgary at 403.284.6400 or email info@innovatecalgary.com when you believe you have created or discovered something unique with potential commercial or research value.
- To avoid risking your patent rights and possibly hindering the opportunity to commercialize your invention, contact Innovate Calgary before publicly disclosing (e.g., abstracts, manuscripts and oral presentations, information provided in grant applications) or having any discussions with people outside the University community that may pertain to an invention.
- Complete and submit the Invention Disclosure Form. The Invention Disclosure Form can be submitted via the University Researcher Portal, or through Innovate Calgary’s website at: www.ucalgary.ca/research/tools/legal_ip/forms, www.innovatecalgary.com/submit-your-invention-disclosure.
- During the initial interview, include companies and contacts you believe might be interested in your invention or who may have already contacted you about your invention. Studies have shown that over 70% of all licenses are executed with commercial entities known by the inventor, thus your contacts can be extremely useful.
- Respond to Innovate Calgary and outside patent counsel requests. While many aspects of the patent and licensing process strongly benefit from your active participation, we will strive to make efficient use of your valuable time.
- Keep Innovate Calgary informed of upcoming publications or interactions with companies related to your intellectual property.

The Commercialization Process

- Research Discoveries
- Submit Invention Disclosure Form
- 30 Day Invention Assessment
- Engagement Agreement
- Develop Commercialization and IP Strategy
- Licensing
- Company Creation
- Support Services for Entrepreneurs
- Researcher Directed Licensing/Company Creation
WILL I BE ABLE TO PUBLISH THE RESULTS OF MY RESEARCH AND STILL PROTECT THE COMMERCIAL VALUE OF MY INTELLECTUAL PROPERTY?
Yes, however, since patent rights are affected by these activities, it is best to contact Innovate Calgary well before communicating or disclosing your invention to people outside the University community. There are significant differences between Canada, the U.S., and other countries as to how publication affects patentability. Once publicly disclosed (published or presented in some form), an invention may have restricted or minimal potential for patent protection outside of Canada and the United States. Be sure to inform Innovate Calgary of any imminent or prior presentation, lecture, poster, abstract, website description, research proposal submission, dissertation/masters thesis, publication, or other public presentation that discusses/describes the invention.

MAY I USE MATERIAL OR INTELLECTUAL PROPERTY FROM OTHERS IN MY RESEARCH?
Yes. It is important to carefully document the date and conditions of use so that we can determine if this use may influence the ownership and license rights of your subsequent research results. If you wish to send materials to an outside collaborator, an incoming Material Transfer Agreement (MTA) should be completed for this purpose. It also may be necessary to have a Confidentiality Agreement completed to protect your research results or intellectual property. If your technology has been assigned to Innovate Calgary as part of an ongoing commercialization project, we can assist you in preparing outgoing MTAs and Confidentiality Agreements; otherwise the Research Services Office can assist you in completing these agreements.

WHAT RIGHTS DOES A RESEARCH SPONSOR HAVE TO ANY DISCOVERIES ASSOCIATED WITH MY RESEARCH?
The Sponsored Research Agreement specifies the intellectual property (IP) rights of the sponsor. The University often retains ownership of the patent rights and other intellectual property resulting from sponsored research. However, the sponsor may have rights to obtain a license to the defined and expected outcomes of the research, or may have been granted other rights. Sponsored research agreements often allow the sponsor a limited time to negotiate a license for any patent or intellectual property rights developed as the result of the research. The sponsor generally will not have contractual rights to discoveries that are clearly outside the scope of the research. It is important to define the scope of work within a research agreement. For technologies assigned to Innovate Calgary the Licensing team can assist in formalizing these agreements.

Sponsored research projects not assigned to Innovate Calgary are handled by the Research Services Office. If you have questions about sponsored research, please contact the Research Services Office at: www.ucalgary.ca/research/legal_ip/.

For Health Legal visit: www.medicine.ucalgary.ca/research/contracts

WHAT ABOUT CONSULTING?
Researchers entering into consulting agreements are deemed to be acting outside of the scope of their employment. Therefore consulting agreements are not negotiated by the University of Calgary nor formally reviewed by Innovate Calgary. Researchers who enter into consulting agreements should familiarize themselves with the policies of the University of Calgary relevant to consulting activities. The researcher is expected to comply with the Outside Professional Activity (OPA) policy and the consulting activity is to be performed off campus. Innovate Calgary is available to provide informal advice on how your consulting agreement relates to your University Intellectual Property.

UNIVERSITY OF CALGARY CONFLICT OF INTEREST POLICY
www.ucalgary.ca/policies/files/policies/Conflict%20of%20Interest.pdf

OPA POLICY

INVENTORS HANDBOOK

RESEARCH CONSIDERATIONS
WHAT IS AN INVENTION?
An invention is any part or process (way of doing or making things), machine, manufacture, design, or composition of matter, or any new and useful improvement thereof, or any variety of plant, which is or may be patentable.\(^2\)

WHAT IS AN INVENTION DISCLOSURE?
An Invention Disclosure (ID) is a written description of your invention or development that is provided to Innovate Calgary through the submission of an Invention Disclosure Form (IDF). The IDF should list all collaborating sources of support. This document will be treated as “Confidential”. Information from the initial interview may be used as the basis to generate a non-confidential description of your invention in order to assist in marketing the technology depending on the outcome of our assessment. Once an IDF has been reviewed by Innovate Calgary an initial interview will be arranged between the inventor and an analyst to review the invention and its commercial potential.

WHY SUBMIT AN INVENTION DISCLOSURE?
Submission of an invention disclosure begins the commercialization process. This may involve commencement of legal protection and identifying external development partners. It can also start the process of satisfying partner obligations under a sponsored research agreement including informing various funding agencies about the invention and the intent to commercialize dependent upon IP and/or revenue rights agreements held between the inventor and the funding agency.

HOW DO I KNOW IF MY DISCOVERY IS AN INVENTION?
Submitting an Invention Disclosure is recommended for all inventions and discoveries that may solve an industry-relevant problem and/or have significant value. Contact Innovate Calgary or the Research Services Office to discuss the invention and strategies for commercialization.

WHEN SHOULD I SUBMIT AN INVENTION DISCLOSURE?
It is recommended that you submit an Invention Disclosure as soon as a unique discovery is made with possible commercial value. This should be done prior to presenting the discovery through publications, poster sessions, conferences, press releases, or other forms of communications. Disclosing publicly (i.e., published or presented in some form), an invention may have restricted or minimal potential for patent protection outside of Canada and the United States. Differences exist between the U.S. and other countries regarding the impact of early publication on a potential patent. It is important to inform Innovate Calgary of any imminent or prior presentation, lecture, poster, abstract, website description, research proposal, dissertation, masters thesis, publication, formal or informal report, or other non-confidential disclosure that include and/or provide information on the invention.

SHOULD I DISCLOSE RESEARCH TOOL(S)?
Yes, provided the new tool(s) will benefit other researchers, and the inventor agrees to allow other researchers and third parties to access the new tool(s). Typically, research tools are materials such as antibodies, vectors, plasmids, cell lines, mice, and other materials used as “tools” in the research process. Most research tools are not necessarily required to be protected by patents to be licensed to third parties and/or generate revenue for laboratories.

Innovate Calgary will support the development of appropriate protection, licensing and distribution strategies for research tools deemed to be a valuable asset for others, including research collaborators.

HOW DO I SUBMIT AN INVENTION DISCLOSURE?
Disclosure forms can be downloaded at:
- www.ucalgary.ca/research/tools/legal_ip/forms
- www.innovatecalgary.com/submit-your-invention-disclosure

Alternatively, contact Innovate Calgary and/or Research Services office directly at:

**INNOVATE CALGARY**
403.270.2442
disclosure@innovatecalgary.com

**RESEARCH SERVICES OFFICE**
403.220.6354
ipadmin@ucalgary.ca

WHAT IS “INTELLECTUAL PROPERTY”?  
Intellectual Property (IP) is an invention and/or material that may be protected under patent, trademark and/or copyright laws, and sometimes by contract.

WHO OWNS WHAT I CREATE?  
In most cases, intellectual property developed at the University of Calgary is owned by the creators, though the University of Calgary maintains a financial interest in any invention as defined by the University of Calgary Intellectual Property Policy. In some cases, Sponsored Research Agreements may assign ownership of any research results to the University. Be sure to review any agreements related to your research, and consult Innovate Calgary or RSO if you have any questions.

WHAT IS UNIVERSITY OF CALGARY’S POLICY ON OWNERSHIP OF INVENTIONS?  
This is stated in the University of Calgary’s IP Policy.

WHO OWNS RIGHTS TO DISCOVERIES MADE WHILE ON SABBATICAL?  
All IP policy compliance requirements apply while a researcher is on sabbatical, unless sabbatical work is declared by the Dean as outside professional activity (OPA).

WHO OWNS RIGHTS TO DISCOVERIES MADE WHILE I AM CONSULTING?  
The ownership of inventions made while consulting for an outside company depends on the terms of your consulting contract. It is important to clearly define the scope of work within consulting contracts to minimize any conflict over ownership of inventions created from University research. If you have questions, Innovate Calgary is available for informal advice.

WHO OWNS RIGHTS TO DISCOVERIES MADE WHILE ON SABBATICAL?  
All IP policy compliance requirements apply while a researcher is on sabbatical, unless sabbatical work is declared by the Dean as outside professional activity (OPA).

SHOULD VISITING SCIENTISTS OR SCIENTISTS AT OTHER INSTITUTIONS BE LISTED ON THE IDF?  
Yes. All contributors to the ideas leading to a discovery should be mentioned in the IDF, including non-University of Calgary employees. Innovate Calgary, along with legal counsel, will determine the rights of such persons and institutions. It is prudent to discuss with Innovate Calgary all working relationships (preferably before engaging such persons/institutions) to understand the implications for any subsequent inventions.

CAN A STUDENT CONTRIBUTE TO AN INVENTION?  
Yes, many students work on inventions at the University under a wide variety of circumstances. Innovate Calgary and the University of Calgary advocate student entrepreneurism, and students should be named as Inventors under the University of Calgary IP Policy if they contributed to the invention. Students are treated the same as faculty members under the University of Calgary IP Policy.

HOW DOES INNOVATE CALGARY ASSESS INVENTION DISCLOSURES?  
Invention disclosures assigned to Innovate Calgary are appointed to an analyst who, in co-operation with the inventor, reviews the novelty of the invention, patentability and marketability of potential products or services, potential encumbrances from research agreements and other sources, size and growth potential of the relevant market, pre-existing rights associated with the IP, and potential competition from other products/technologies. The assessment also includes consideration of the IP as the basis for a new business startup. The analyst meets with the Innovate Calgary licensing team to review the commercialization potential of the technology and begin the development of a commercialization strategy, which will be reported to the inventor within 30 days of the initial disclosure.

FOR SOFTWARE, HOW DO I DECIDE WHETHER TO COMMERCIALIZE WITH A TRADITIONAL OR AN “OPEN SOURCE” LICENSE?  
There are numerous licensing models for software, and many factors that must be considered when choosing a licensing model. Open source licensing does not necessarily impede traditional commercialization paths, and the two can sometimes be done in parallel if structured properly. Please consult with an Innovate Calgary Licensing Manager to discuss the pros and cons of different licensing strategies for your specific software.

OWNERSHIP OF INTELLECTUAL PROPERTY

ASSESSMENT OF AN INVENTION DISCLOSURE
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. A patent does not necessarily provide the holder any affirmative right to practice a technology since it may fall under a broader patent owned by others. Instead, it provides the right to exclude others from practicing the invention. Patent claims are the legal definition of an inventor’s protectable invention.

The key criteria for patentability are non-obviousness, novelty and utility.

WHAT TYPE OF SUBJECT MATTER CAN BE PATENTED?
Patentable subject matter includes processes, machines, compositions of matter, articles, some computer programs and algorithms, and methods (including methods of making compositions, methods of making articles, and even methods of performing business).

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 UNITED STATES PATENT AND TRADEMARK OFFICE (USPTO)?
The USPTO is the federal agency, organized under the Department of Commerce, that administers patents on behalf of the government. The USPTO employs patent examiners skilled in all technical fields in order to appraise patent applications. The USPTO also issues federal trademark registrations. The Canadian equivalent is the Canadian Intellectual Property Office (CIPO).

WHAT IS THE DEFINITION OF AN INVENTOR ON A PATENT AND WHO DETERMINES THIS?
Under patent law, an inventor is a person who makes a conceptual contribution to the patent claims of an issued patent. Since patent claims may be added, deleted, or modified during prosecution, inventorship may also be changed. Inventorship is a legal issue and may require an intricate legal determination by the patent attorney prosecuting the application.

WHO IS RESPONSIBLE FOR PATENTING?
Innovate Calgary contracts with, and pays for, outside patent counsel for IP protection, thus assuring access to patent specialists in diverse technology areas. Inventors will work with the patent counsel in preparing patent applications and responding to worldwide patent offices. Innovate Calgary Licensing Managers coordinate these activities.

WHAT IS THE PATENTING PROCESS?
Patent applications are generally drafted by a patent attorney or a patent agent (a non-attorney with a science education licensed to practice by the USPTO or CIPO). Inventors will be asked to provide technical information for an application before it is filed and to answer questions about inventorship of the application claims. At the time an application is filed, inventors will be asked to sign an inventor’s Declaration and an Assignment, which evidences the inventor’s assignment of the patent to Innovate Calgary.

The first patent application filed will be a U.S. Provisional Patent application. Provisional patent applications are used to establish a “priority date” for the filing (the date past which patent examiners cannot look for prior art), but they are not examined or published. The provisional patent must be converted to a regular patent application within one year. It is permitted to include additional supporting data for an invention when converting the patent application, so inventors will have the opportunity to perform additional research during that year. In about two years or longer from the conversion date, depending on the technology, the patent attorney will receive written notice from the USPTO as to whether the application and its claims have been accepted in the form as filed. Most often, the USPTO rejects the application because certain formalities need to be cleared up or the claims are not patentable over the “prior art” (anything that investigators in the field have publicly disclosed in the past). The letter sent by the USPTO is referred to as an Office Action or Official Action.

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 USPTO’s position is incorrect. This procedure is referred to as patent prosecution. Often it will take two USPTO Official Actions and two responses by the patent attorney—and sometimes more—before the application is resolved. The resolution can take the form of a USPTO notice that the application is allowable; in other words, the USPTO agrees to issue a patent. During this process, input from the inventor(s) is often needed to assist the patent attorney in understanding the technical aspects of the invention and/or the prior art cited against the application. The USPTO holds patent applications confidential until published by the USPTO, 18 months after initial filing.

WHAT IS THE DIFFERENCE BETWEEN A PROVISIONAL PATENT APPLICATION AND A REGULAR (OR “UTILITY”) PATENT APPLICATION?
In certain circumstances, U.S. Provisional Patent applications can provide a tool for preserving patent rights while reducing costs. This advantage occurs because the application is not examined during the year in which it is pending and claims are not required. A regular U.S. application must be filed within one year of the provisional form in order to receive its early filing date (the “priority date”). However, an applicant only receives the benefit of the earlier filing date for material that is adequately described and enabled in the provisional application. As a result, most provisional patent applications are drafted as complete patent applications.

WHAT’S DIFFERENT ABOUT FOREIGN PATENT PROTECTION?
Foreign patent protection is subject to the laws of each individual country, although in a general sense the process works much the same as it does in the United States and Canada. In many foreign countries, however, an inventor will lose any patent rights if he or she publicly discloses the invention prior to filing the patent application. In contrast, the United States and Canada have a one-year grace period.

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. In most cases, a PCT application will be filed at the same time the U.S. Provisional Patent application is converted to a regular application, one year after the Provisional Patent application filing date. The PCT application must later be filed in the national patent office of any country in which the applicant wishes to seek patent protection, generally within 30 months of the earliest claimed filing date.

The PCT provides two advantages. First, it delays the need to file costly foreign applications until the 30-month date, allowing the opportunity to further develop, evaluate and/or market the technology or licensing. Second, the international preliminary examination often allows an applicant to simplify
WHY DOES INNOVATE CALGARY PROTECT SOME INVENTIONS?

As part of the assessment meeting described previously, the Innovate Calgary Licensing team, in consultation with the inventor, decides on a recommended commercialization strategy and whether a patent application will be a necessary part of that strategy.

WHAT DOES IT COST TO FILE FOR AND OBTAIN A PATENT?

Filing a regular U.S. patent application may cost between $10,000 and $20,000. To obtain an issued patent may require an additional $15,000 to $22,000 for patent prosecution. Filing and obtaining issued patents in other countries may cost $30,000 or more per country. Most countries also charge escalating maintenance fees throughout the life of a patent to keep it in good standing with that country’s patent office.

WHAT IF I CREATED THE INVENTION WITH SOMEONE FROM ANOTHER INSTITUTION OR COMPANY?

If you created the invention under a sponsored research or consulting agreement with a company, the analyst will need to review that contract to determine ownership and other rights associated with the contract and to determine the appropriate next steps. Should the technology be jointly owned with another academic institution, the analyst will create an inter-institutional agreement (IIA) that provides for one of the institutions to take the lead in protecting and licensing the invention, sharing of expenses associated with the patenting process and allocating any licensing revenues. If the technology is jointly owned with another company, the analyst will work with the company to determine the appropriate patenting and licensing strategy.

WHO DECIDES WHAT GETS PROTECTED?

Patent protection is often a requirement of a potential commercialization partner (licensee) because it can protect the commercial partner’s often sizable investment required to bring the technology to market. Due to their expense and the length of time required to obtain a patent, patent applications are not possible for all intellectual property disclosed to Innovate Calgary. We carefully review the commercial potential of an invention before investing in the patent process. However, because the need for commencing a patent filing usually precedes finding a licensee, we look for creative and cost-effective ways to seek early protections for as many promising inventions as possible.

WILL INNOVATE CALGARY INITIATE OR CONTINUE PATENTING ACTIVITY WITHOUT AN IDENTIFIED LICENSEE?

Upon the determination of sufficient value, Innovate Calgary will accept the risk and assume the costs of filing a patent application before a licensee has been identified. However, pursuant to this treaty, these so-called “convention applications” must be filed in the United States within one year of the first filing date of the U.S. application.

WHAT IS THE TIMELINE OF THE PATENTING PROCESS AND RESULTING PROTECTION?

As of 2011, the average U.S. utility patent application is pending for about three years, though inventors in the biotech and computer fields should plan on a longer waiting period. Once a patent is issued, it is enforceable for 20 years from the initial filing of the application that resulted in the patent, assuming that PTO-mandated maintenance fees are paid.

Patent prosecution process by having a single examiner speak to the patentability of the claims, which can save significant costs in prosecuting foreign patent applications.

An important international treaty called the Paris Convention permits a patent application filed in a second country (or a PCT application) to claim the benefit of the filing date of an application filed in a first country. However, pursuant to this treaty, these so-called “convention applications” must be filed in foreign countries (or as a PCT) within one year of the first filing date of the U.S. application.

Trademarks generally become protected as soon upon legitimate use of the mark. However, it is not a de facto protection until registration. Innovation and Trademark (CIPO) provides a determination of rights based upon use of the mark. Although the use of the mark is registered, it is not necessary to register a trademark or service mark to prevent others from infringing upon the trademark. Trademarks generally become protected as soon as they are adopted by an organization and used in commerce, before registration. With a federal registration, the registrant is presumed to be entitled to use the trademark throughout the jurisdiction for the goods or services for which the trademark is registered.
MARKETING TO FIND A LICENSEE

HOW DOES INNOVATE CALGARY MARKET MY INVENTION?
Licensing Managers use many sources and strategies to identify potential licensees and market inventions. Sometimes existing relationships of the inventors, other researchers and Innovate Calgary team members are useful in marketing the invention. Market research can assist in identifying prospective licensees. The Licensing Manager also examines other complementary technologies and agreements to assist our efforts in addition to utilizing the Innovate Calgary website to post inventions, leveraging conferences and industry events, making direct contacts, and employing faculty publications and presentations. For most technologies supported by Innovate Calgary, one pager marketing documents that contain non-confidential description of the invention and its applications are developed collaboratively between the inventor and Innovate Calgary to be used to generate interest from potential licensees.

HOW ARE MOST LICENSEES FOUND?
Studies have shown that 70% of licensees were already known to the inventors. Thus inventor input is an invaluable resource. Licensees are also identified through existing relationships of the Innovate Calgary team. Our licensees often license more than one technology from Innovate Calgary. We attempt to broaden these relationships through contacts obtained from website posting inquiries, market research, industry events and the cultivation of existing licensing relationships.

HOW LONG DOES IT TAKE TO FIND A POTENTIAL LICENSEE?
It can take many months and often 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 university inventions tend to be at an early stage of development and thus require substantial commercialization investment.

HOW CAN I ASSIST IN MARKETING MY INVENTION?
The active involvement of the inventor can dramatically improve the chances of matching an invention to an outside company. Your network of relationships can be helpful in identifying potential licensees and technology champions within companies. 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 commercialization results are obtained when the inventor and the licensing professional work together as a team to market and sell the technology.

CAN THERE BE MORE THAN ONE LICENSEE?
Yes, an invention can be licensed to multiple licensees, either non-exclusively to several companies or exclusively to several companies, each for a unique field-of-use (application) or territory.

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.

WHAT IS A LICENSE AGREEMENT?
License agreements describe the rights and responsibilities related to the use and exploitation of intellectual property developed at the University of Calgary. Innovate Calgary license agreements usually stipulate that the licensee diligently seek to bring the intellectual property into commercial use for the public good and provide a reasonable return to the University of Calgary.

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. Sometimes an established company with experience in similar technologies and markets is the best choice. In other cases, the focus and intensity of a startup company is a better option. It is rare for the University of Calgary to have multiple potential licensees bidding on an invention.

WHAT CAN I EXPECT TO GAIN IF MY IP IS LICENSED?
The revenue sharing is defined in the Engagement Agreement and financial return(s) from a license is provided to the inventor(s). Most inventors enjoy the satisfaction of knowing their inventions are being deployed for the benefit of the general public. New and enhanced relationships with businesses can augment one’s teaching, research and consulting, for example, through industry sponsored research, and by gaining access to sophisticated industry resources.

WHAT IS THE RELATIONSHIP BETWEEN AN INVENTOR AND A LICENSEE, AND HOW MUCH OF MY TIME WILL IT REQUIRE?
Many licensees require the active assistance of the inventor to facilitate their commercialization efforts. At the early stages of development this assistance can range from infrequent, informal contacts to a more formal consulting relationship. Working with a new business startup can require a substantial time commitment, depending on your role in or with the company.

WHAT OTHER TYPES OF AGREEMENTS AND CONSIDERATIONS APPLY TO TECH TRANSFER?
- Non-Disclosure Agreements (NDAs) and Confidentiality Agreements (CDAs) are often used to protect the confidentiality of an invention during evaluation by potential licensees. NDAs also protect proprietary information of third parties that University of Calgary researchers need to review in order to conduct research or evaluate research opportunities. Innovate Calgary and the Research Services Office enter into NDAs for University proprietary information shared with someone outside of the University of Calgary.
- Material Transfer Agreements (MTAs) are used to specify conditions under which incoming and outgoing materials are administered by Innovate Calgary (incoming/outgoing materials for assigned technologies under the Engagement Agreement) or the Research Services Office (outgoing/incoming materials) and are typically for research or evaluation purposes. Intellectual property rights can be compromised if materials are shared without a proper MTA.
- Inter-Institutional Agreements describe the terms under which two or more institutions (generally two universities) will collaborate to assess, protect, market, license, and share in the revenues received from licensing jointly owned intellectual property.
- Option Agreements, or Option Clauses within research agreements, describe the conditions under which the University of Calgary preserves the opportunity for a third party to negotiate a license for intellectual property. Option clauses are often provided in a Sponsored Research Agreement to corporate research sponsors or Option Agreements are entered into with third parties wishing to evaluate the technology prior to entering into a full license agreement.
INVENTORS HANDBOOK

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. Development can involve additional testing, prototyping for manufacturability, durability and integrity and further development to improve performance and other characteristics. Documentation for training, installation and marketing is often created during this phase. Benchmarking tests are often required to demonstrate the product/service advantages and to position the product in the market.

WHAT IS MY ROLE DURING COMMERCIALIZATION?
The inventor’s 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 UNIVERSITY IF COMMERCIALIZATION IS SUCCESSFUL? IF UNSUCCESSFUL?
Most licenses include licensing fees that can be very modest or can reach hundreds of thousands of dollars. Royalties on the eventual sales of the licensed products can generate revenues, although this can take many years to occur. Most licenses do not yield substantial revenues. A recent study of licenses at U.S. universities demonstrated that only 1% of all licenses yield over $1 million. However, the rewards of an invention reaching the market go beyond the financial considerations alone.

WHAT WILL HAPPEN TO MY INVENTION IF THE STARTUP OR LICENSEE IS UNSUCCESSFUL IN COMMERCIALIZING THE TECHNOLOGY? CAN THE INVENTION BE LICENSED TO ANOTHER ENTITY?
Yes. Licenses typically include performance milestones that, if unmet, can result in termination of the license. This termination allows for subsequent licensing to another business.

HOW DOES THE UNIVERSITY DEFINE A CONFLICT OF INTEREST?
A conflict of interest can occur when a University of Calgary employee, through a relationship with an outside organization, is in a position to:

1) influence the University of Calgary’s business, research or other areas that may lead to direct or indirect financial gain,

2) adversely impact or influence one’s research or teaching responsibilities, or

3) provide improper advantage to others, to the disadvantage of the University of Calgary.

Actual and potential conflicts should be disclosed with your supervisor.

WHAT KINDS OF ISSUES CONCERN CONFLICT OF INTEREST REVIEWERS?
Examples include the appropriate and objective use of research, the treatment and roles of students, supervision of individuals working at both the University of Calgary and a licensee company, and conflict of commitment (e.g., your ability to meet your University of Calgary obligations).

WHAT ARE EXAMPLES OF A CONFLICT OF COMMITMENT?
A conflict of commitment may exist if duties, assignments or responsibilities associated with a technology license or outside business arrangement have a negative impact on your ability to meet commitments associated with your University of Calgary employment or exceed the amount of time available to you for these activities. To avoid a conflict of commitment, fully disclose your situation to your supervisor.

For more information, visit: www.ucalgary.ca/policies/files/policies/Conflict%20of%20Interest.pdf
In some cases, the best commercialization strategy for your invention is to form a new business entity, rather than licensing the IP to an established business.

**IS FORMING A STARTUP COMPANY THE RIGHT OPTION?**

Below are a few considerations for creating a startup:

- **Commitment**: Substantial time commitments are paramount in successfully starting a new venture. In most cases, startup companies are launched without requiring the principal investigator to leave his/her faculty position. However, the startup still relies heavily on the technical expertise of the original inventor, who is encouraged to contribute to the new venture in a meaningful way.

- **Capital**: Is the amount of capital required to commercialize the invention achievable (i.e., not in the hundreds of millions of dollars)?

- **Development Risk**: Can the invention reach the market within a timeframe acceptable to early stage investors?

- **Time to Exit**: Does the startup have the potential to achieve a satisfactory exit in less than 5-7 years, and can investors achieve a meaningful rate of return that justifies their investment risk?

- **Platform IP**: Is the invention a “platform” from which multiple products or revenue streams might derive, or is it a “one-hit-wonder”?

- **Competitive Advantage**: Does the invention have a compelling competitive advantage against existing solutions on the market?

- **Barriers to Entry**: Is the invention position strong and defendable? Is there a large enough barrier to entry, making it difficult for new competitors to enter the market and compete with the technology?

- **Market Size**: Does the invention have a large enough target market, with explosive growth potential, to warrant attention from seed investors?

If a majority of responses were “yes”, then launching a startup may be the best approach to taking the technology to market. Innovate Calgary can evaluate these key factors and assist you in making the most appropriate decision.

If your decision is to proceed with a startup, then Innovate Calgary’s Company Creation team can provide assistance for the elements required to launch a startup including a limited amount of startup funding, seasoned management personnel (including “Executives-in-Residence”), office space and other services such as business planning, marketing, tax and accounting, and IP strategy.

**WHERE DOES SEED CAPITAL COME FROM?**

Typically, startups require seed (or early stage) capital to develop and commercialize their invention, achieve regulatory compliance for their products, generate revenues, and become cash-flow positive. Seed capital usually comes from one of four sources:

1. **Friends and family**: Provided by individuals who know and trust the founder or inventor. This is often the easiest capital to raise. In contrast, outside investors who are not friends or family will typically demand a longer track record from the company or the founder, prior to investing.

2. **Grants** (“non-dilutive funding”): Grant funding is typically offered by government agencies or private foundations. It is a highly attractive source of capital for startups because there is
CONSIDERATIONS FOR A STARTUP

continued

3) Angel Investors: High net-worth individuals who invest cash into startup companies in return for equity or debt. Angels are often successful business-builders and usually have much to offer in terms of expertise, contacts and advice. As such, some Angels will often take a management or advisory role in the startup.

4) Venture Capital: Venture capital firms (VCs) are professional investors that manage large pools of capital on behalf of institutions or wealthy individuals. Typically, VCs require a sizeable equity stake in the startup, play an active role in the management and hold Board positions within the company. Some large corporations manage their own VC divisions, solely making investments in areas that fit the corporation’s overall strategic priorities.

Many startups require multiple rounds of financing before an exit event can be realized. Innovate Calgary can assist you with the upfront planning and financial modeling required to minimize the dilution in equity that you will incur when seeking new investment in your company.

WHAT ARE SOME OF THE KEY ELEMENTS THAT AN OUTSIDE INVESTOR LOOKS FOR IN A NEW STARTUP?

Outside investors typically expect to see a well-designed business plan, a market and competitive analysis, a solid management team and Board, financial projections, a commercialization and marketing plan and other key information. Innovate Calgary can assist with all these elements to ensure that the startup is investment ready.

WHAT AGREEMENTS MUST BE EXECUTED BETWEEN THE STARTUP AND THE UNIVERSITY OF CALGARY/INNOVATE CALGARY?

If you choose to launch a startup, the IP will either be licensed or assigned to the startup venture, typically in exchange for equity. The first option will require an executed Licensing Agreement, and the second option would require an executed Assignment or IP Transfer Agreement. Innovate Calgary works closely with the Research Services Office to ensure that such IP transfer is done in a timely manner, with a clean transfer of title so that the startup is as attractive as possible to new investors.

Typically, the startup will have a Unanimous Shareholders Agreement, to which the inventor and Innovate Calgary are usually parties.

Oftentimes, the investor will sign a consulting or employment agreement with the startup, which specifies his/her roles and obligations in the new entity. Innovate Calgary strongly recommends that inventors have their own attorneys and advisors to review such agreements in order that the inventors are fully aware of any potential legal or tax consequences.

WHAT PERCENTAGE OF EQUITY DOES INNOVATE CALGARY REQUIRE IF SUPPORTING MY STARTUP?

This depends on a number of factors such as: the amount of capital being sought, financial valuation of the opportunity, growth potential of the company and the level of incubation services required from Innovate Calgary to create a successful startup.

Innovate Calgary’s Company Creation team are seasoned business professionals and serial entrepreneurs with a history of founding, growing and exiting from successful technology ventures. The path to exit (time required to sell shares in the startup and potentially realize a financial return) can be lessened significantly through the diligent selection of advisors and service providers.

HOW DOES ONE EXIT FROM A STARTUP WITH INNOVATE CALGARY?

Planning an exit strategy for your startup is one of the most important, yet complex decisions faced by inventors. Receiving the right advice at the onset of company development is paramount. Sophisticated investors focus their investments with startups that have carefully considered an exit strategy.

The most common types of exits for technology startups are:

1) Sale to a larger third-party company – one that requires the product(s) or IP as a key component of their existing offering.

2) Going public through an initial public offering, or a reverse takeover of an existing publicly listed entity. This strategy requires a favourable technology investment climate. Most companies need to reach a certain level of size and revenue to meet the listing requirements demanded by North American stock exchanges.

HOW LONG DOES IT TAKE TO LAUNCH A STARTUP WITH INNOVATE CALGARY?

Following initial due diligence and opportunity assessment, inventors will be presented with a "Term Sheet" identifying Innovate Calgary’s contribution to the startup (funding and services), and expected return in terms of ownership. Once the Term Sheet is complete, a variety of legal agreements (as previously outlined) will be required in order to launch the startup.

The process usually takes between three to six months, dependent upon the complexity of the IP assignment and the other agreements as required.

BIZNESS DEVELOPMENT SERVICES

Technology companies looking to take their company to the next level can engage Innovate Calgary to draw on the expertise to provide your startup company with custom contracted services to accelerate the growth of your company. These services include: a market opportunity assessment, market validation, a business feasibility review, an intellectual property assessment and strategy development engagement and financial modeling and forecasting. Preceding a needs analysis and statement of work, a support team will be assigned to the project. Fees may be subsidized through internal and external grant programs.

For more information, contact: Innovate Calgary Company Creation info@innovatecalgary.com 403.775.1860

Whether selling or going public, the expertise of reputable advisors and Board members are essential to ensuring successful investment and exit. Innovate Calgary is available to assist with qualified referrals to the right individuals will assist you in achieving your startup exit goals.
Innovate Calgary offers a suite of entrepreneurial development services and programs that can help accelerate the success of your technology startup.

ESTABLISHING A FIRST BOARD OF ADVISORS
Innovate Calgary can assist with establishing a first Board of Advisors. Our Entrepreneurs-in-Residence (EIRs), who have commercialization and company creation experience, can bring knowledgeable expertise that will enhance the success of your startup.

SEMINARS & WORKSHOPS
Innovate Calgary’s seminars and workshops are developed and delivered by thought leaders, entrepreneurs and researchers who are familiar with the startup ecosystem. These programs provide the opportunity to engage and share insights with experienced team members, community experts and other entrepreneurs from both academia and the community. Each program offers tools and methods including market discovery and capture, business model design, IP strategy, people development, and leadership and how to manage finance and investment against critical milestones. Ongoing coaching and mentorship through Innovate Calgary’s Entrepreneurs-in-Residence and staff advisors are available.

PERFECTING YOUR PITCH
Attracting additional partners, mentors and capital is a necessary step in startup development. Creating a successful pitch is not a simple matter as startups typically have only one chance to make an impression that will engage support. Innovate Calgary’s pitch coaching bootcamp assists in shaping content and delivery style in addition to providing valuable information on the pitch process.

CONNECTION TO INVESTMENT
Connect with potential investment opportunities through Innovate Calgary’s Alberta Deal Generator (ADG) program. ADG is one of the largest networks of accredited investors in Canada that actively pursue investment opportunities in Alberta’s early and growth-stage companies. ADG’s screening process identifies technology companies that are “investment ready” and connects them with a network of angel investors, Venture Capital firms and other investor groups via exclusive presentation forums.

CONNECTION TO THE ENTREPRENEUR COMMUNITY
Calgary’s technology and innovation community is comprised of researchers, entrepreneurs, startup companies and technology investors. This ecosystem is supported by organizations, industry, government, peer entrepreneurs, mentors, investors, academia and service providers. Innovate Calgary is actively engaged within the technology community and is committed to providing value-add programs, services, mentorship, coaching, networking and investment opportunities to support every stage of company development and technology commercialization.

Innovate Calgary has been assisting researchers, entrepreneurs and businesses for over 30 years.

- **1,700+ discoveries** evaluated with **more than 690 patents issued**
- Negotiated **over 590 technology commercialization agreements** in over 24 countries
- Developed or assisted in the creation of **over 40 spin-off companies**
- Ranked **4th among 37 Canadian Institutions** in licensing revenue (AUTM Survey 2011)