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Primer: Intellectual Property in Applied Research

What is Research?
Research is an undertaking intended to extend knowledge through a disciplined inquiry or systematic investigation conducted with the expectation that the method, results, and conclusions will withstand the scrutiny of the relevant research community, regardless of whether or not the undertaking is funded. It may involve living or deceased individuals, their data and their biological or reproductive materials, animals, and even controlled substances or organisms. It can be conducted in different contexts, including course-based research activities. (Government Panel on Research Ethics)

What is Applied Research
Applied research is the development of innovative solutions to real-world challenges. It tackles practical problems by applying the latest technology and knowledge to create new products, services, and processes, or improve current products and practices (CICan).

What is Basic Research
Basic research is experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundations of phenomena and observable facts, without any particular application or use in view.

The College Approach to Applied Research
Colleges and institutes across Canada have become research partners of choice by helping thousands of businesses, entrepreneurs, and social enterprises find state-of-the-art solutions to their challenges. In fact, over 90% of colleges and institutes have applied research offices ready to support their communities and local businesses with innovative solutions (CICan). Colleges continually work with local small- and medium-sized enterprises (SMEs) to innovate and expand businesses and the social service sector in response to the growing needs of adapting and pivoting (Colleges Ontario).

Within colleges, the focus is on (1) technological innovation, such as creating a new prototype for a mining company to improve the efficiency of one of its drilling machines, and (2) social innovation projects, for example working with a pediatric service agency to create a new service method and evaluate the service outcomes.

What Drives College Research?
"College applied research is driven not primarily by the curiosity of the researcher, but instead by needs and problems identified by firms, governments, and other organizations in the private and public sectors, and is more often oriented toward developing new or improved products, processes, and services that contribute to competitiveness and organizational effectiveness." (Holmes, K. (2017). Research at Colleges in Ontario: Learning from the Past and Looking Towards the Future. College Quarterly. 20 (3).)

How is College Research Unique?
"College research is unique in several respects. One of the distinctive features is that the [teachers] researchers willingly engage in research, with no professional obligation to do so", as suggested in Piché (2011). In fact, while the primary mission of colleges remains teaching, their involvement in research continues to grow (Fisher, 2010; Lapostolle, 2017). College research is often focused on improving the processes, procedures, and practices, particularly when involving humans. In order to maintain their eligibility for funding and meet the requirements of the funding agencies, colleges must ensure that their

research governance is based on good practices. Therefore, it is in the best interests of all those who conduct research—teachers, professional staff and students— to participate in the development of these practices. (Guide for Responsible Conduct of Research).

What are the Goals of Applied Research and Who are the People Involved?
Part of the college mandate is to work with external partners, but there are other various stakeholders within the research process. These stakeholders include: college researchers, technical and support staff and other research personnel such as administrators and student researchers. As a result of applied research focusing on practical solutions and validation of findings or processes, colleges have become known for working with local small- to medium-sized enterprises and community and social service partners to deliver solutions for partner-identified challenges.

What is Intellectual Property
The Canadian Intellectual Property Office (CIPO) defines Intellectual Property as a form of creative effort that can be protected through a trademark, patent, copyright, industrial design, or integrated circuit topography. (Source: Glossary of Intellectual Property Terms) Intellectual property categories include (Source: CIPO):

- Trademark
- Trade Secrets
- Patents
- Industrial Design
- Copyright

Colleges take a hands-off approach to IP and instead work with the partner on the applied research to then have the **partner retain the IP generated**. This is done to help the local economy grow and expand as colleges work with local industry most often.

What is a Trademark
A trademark is a combination of letters, words, sounds, or designs that distinguishes one company's goods or services from those of others in the marketplace. A trademark is unique. It is important to a company because over time, a trademark comes to stand not only for the actual goods and services you sell, but also for your company's reputation and brand. By registering your trademark, you protect it under law from misuse by others, and you gain exclusive rights to use it throughout Canada for 10 years (a term that you can renew). Trademarks may also have limited protection without registration, and, in the case of both registered and unregistered marks, the trademark must be used to maintain exclusive rights in the trademark.

What is a Trade Name
A trade name (known also as a "business name" or "company name") is the legal name under which any business is carried on, whether or not it is the name of a corporation, a partnership, or an individual.

What is a Trade Secret
A trade secret is any secret that has some value and is used in business, industry, or trade. Formulas, such as the Coca-Cola recipe or the secret blend of spices in KFC chicken, are trade secrets. Patterns, devices, compounds, processes, customer lists, supplier lists, pricing, business plans, and so on, can all be considered trade secrets. Trade secrets can potentially last forever and there is no mechanism to apply for trade secret protection through IP offices. There are risks to using trade secrets to protect your intellectual property: if someone independently invents or creates the subject matter of your trade secret, you lose the

competitive advantage, if the trade secret is disclosed without protection the protection of trade secret is lost. Applied research examples include: recipes/formulas, new device, new process, computer code. *See: Government of Canada.* Trade secrets.

What is a Patent

Patents apply to inventions. An invention is eligible for patent protection if it is:

- new—first in the world
- useful—functional and operative
- inventive—showing ingenuity and not obvious to someone of average skill who works in the field of your invention
- The patented invention can be:
- a product (example: a door lock)
- a composition (example: a chemical composition used in lubricants for door locks)
- a machine (example: a machine for making door locks)
- a process (example: a method for making door locks)
- an improvement on any of these

Applied research examples include: new device (aircraft engine, toaster, ski boots, drone, medical device) or a new process. *See: Government of Canada*. What is a patent?

What is Industrial Design

Industrial designs are the features of a product that appeal to the eye: the contour of a car hood, the pattern of a knitted sweater, the shape of a computer monitor. Distinctive and attractive features like these give products a competitive edge. If you produce distinctive-looking new products, you will want to register your designs. Applied research examples include: emojis/icons, shape of a cell phone or aircraft wing, apparel design. *See: Government of Canada.* Industrial designs guide

What is Copyright

- Software coding
- Business plans
- Website content

The creator has the right to dispute modification of the original work. Moral rights – detrimental to the integrity of the work; cannot be sold but can be waived. *See: Government of Canada.* What is copyright?

What is a Non-Disclosure Agreement (NDA)

A contract in which one or more parties agree not to disclose private or confidential information that is shared between them while they work together.

What Are the Different Types of Research Activities?

- Technological Innovation, which can include commercialization of IP.
- Social Innovation, which usually includes Knowledge Mobilization.

Technological innovations comprise new products and processes and significant technological changes of products and processes. Source: OECD. Glossary of Statistical Terms. Technical Innovations.

Social innovation refers to the design and implementation of new solutions that imply conceptual, process, product, or organizational change, which ultimately aim to improve the welfare and wellbeing of individuals and communities. Source: OECD. Glossary of Statistical Terms. Social Innovation.

Knowledge mobilization is an umbrella term encompassing a wide range of activities relating to the production and use of research results, including knowledge synthesis, dissemination, transfer, exchange, and co-creation or co-production by researchers and knowledge users. Source: Government of Canada. Social Sciences and Humanities Research Council. Guidelines for Effective Knowledge Mobilization

Resources

Canadian Intellectual Property Office (CIPO)

CIPO IP Academy

CIPO IP Toolbox

Managing Your Intellectual Property

Colleges and Institutes Canada (CICan) Applied Research

CICan Innovation

Government of Ontario IP Resources

Government of Ontario Report on Intellectual Property in Ontario's Innovation Ecosystem

Source:

This project is made possible with funding by the Government of Ontario and through eCampusOntario's support of the Virtual Learning Strategy. To learn more about the Virtual Learning Strategy visit: https://vls.ecampusontario.ca.

To view the full learning module visit Intellectual Property in Applied Research.