



# Research Integrity, Professionalism, and Intellectual Property

## Presentation to Faculty Development Academy

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September 22, 2016

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## Research Integrity / Professionalism Why is it important?

- Results and discoveries form the basis of future research
- Uphold trust in the research process with public, your peers, and your partners
- Maintain the integrity of the profession
- Enhance the reputation of the researcher and institution

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## Common Research Dilemmas

1. What ethics approvals do I need to carry out my research?
2. What does it mean to keep information confidential?
3. What does falsification of data mean?
4. How is authorship in a journal paper or poster determined?
5. How do you manage potential competing interests between your lab and industry partner?
6. Who owns/has rights in the IP, results, lab book, graduate student thesis? Who is an inventor?

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## Do I need ethics approvals to carry out my research?

Ethics approval (MREB or HIREB) needed for any and all research involving animals and humans – includes interviews, surveys, review of personal records, biological samples; whether funded by NSERC, company, or no funding at all

PI is responsible for making sure you have ethics approvals required. If in doubt, contact: **Dr. Karen Szala-Meneok**, Senior Ethics Advisor, ext:26117  
<https://reo.mcmaster.ca/home>

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## What does it mean to keep information confidential?



When working with companies, you may receive information or material that the company tells you is confidential. Confidential means you **can NOT** (without company's permission):

- Publish or present the information in a paper, poster, website
- Share the information with others in your lab if they aren't part of the project with the company
- Use the information for any other purpose except the project

If in doubt, talk to your industry partner, supervisor or **Amber Metham** at MILO, ext: 26878, [metham@mcmaster.ca](mailto:metham@mcmaster.ca)

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## What does falsification of data mean?

Modifications to your results, including omitting or making up data points

Example: Dr. Schon of Bell Laboratories (1998-2001) – falsified data, identical graphs, destroyed lab books.

Impact:

1. Loss of employment, reputation
2. Misdirection of future research
3. Waste of resources/funding

For questions, contact: Kimberly Mason  
Academic Integrity Officer (ext 24303), [acinteg@mcmaster.ca](mailto:acinteg@mcmaster.ca)

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## How is authorship determined?

Those who make significant contribution to the “concept, design, acquisition of data, or analysis and interpretation of data” [CJME guidelines]

### **Best practice:**

1. Clearly communicate with your lab and collaborators about criteria for authorship at the start of project or before writing up the paper
2. Make sure your lab keeps detailed notes and document contributions to the project in lab book or meeting minutes or email summaries with collaborators

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## How do you manage competing interests between your lab and industry partner?

- Industry partner want to have results as soon as possible, and not want competitors to know
- PI wants to have funding, do interesting research, publish
- Students want to graduate, publish, get a job

### **PI' s responsibility to:**

1. Be clear at the start on deliverables and what will or will not be published with both industry and students/PDFs
2. Keep industry partner informed. Communicate often – good and bad, and best to do as early as possible

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## **Who owns / has rights in the IP, results, lab book, thesis? Who is an inventor?**

When research is paid for by university, grant, and/or company to the university, then:

- University owns lab book
- Copyright in thesis is owned by graduate student
- Ownership / rights of IP and results are typically with the company sponsor (as per contract, if applicable), or university (as per IP Policy)

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## **Introduction to Intellectual Property**

What is intellectual property?

Types of intellectual property

Importance to your Research and Industry partners

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## Intellectual Property (IP)

- **Definition:** ‘Creations of the mind’, such as inventions, artistic works, designs, or names
- **In legal terms:** Exclusive right which allows the owner to exclude others from using the IP
- **In business terms:** Part of the intangible assets of a company; value derived from the sale, licensing, or as a defensive tool

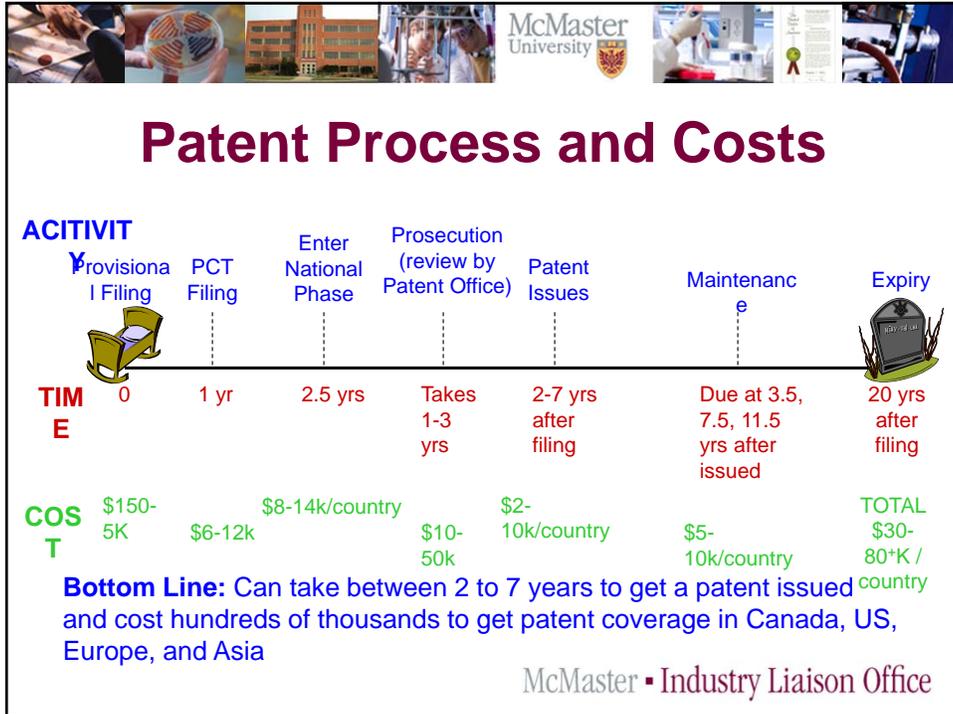
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## Patents

- Protects the idea: process, machine, composition of matter, or useful improvement
- Must be novel, useful, and non-obvious
- Owner gets to exclude others from practicing invention in each country filed for life of patent (~20 years)
- Do not need a prototype, but should work, and partially reduced to practice patent application must provide complete description of the invention

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## Value of Patents

- Market Research / Intelligence:** find out what has already been done, direction of research in the industry; find potential partners/licensees/employers
- Competitive Advantage:** ability to exclude others = monopoly for your product in a certain country (mainly for companies)
- Defensive:** cross-licensing with other companies so that you don't sue one another
- Revenue Generation:** license your patent rights to others; helps to raise investment in a company

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## What you should know about patents

Once you publish or present, it is no longer novel and cannot be patented – Importance of disclosing to MILO to help in evaluating and determining if we should file a patent before publishing

Patent database is a wealth of knowledge – Include a search in USPTO or Google Patents, as well as scientific journals to make sure you are not repeating the work of others

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## Copyright

- Protects expression of an idea
- Must be fixed in tangible form, original, have an author
- Protection is international, no registration required, extends for: Life of Author + 50 yrs (Canada) or + 70 yrs (US)
- Examples: web sites, software (source and object codes), manuals, images, questionnaires, books, databases

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## Copyright Ownership

- Usually is the author, unless it is a 'Work for Hire' (typically requires employment)
- Consultant or Contractor rights
  - Get sign-off of ownership rights from contractor in writing
- Joint authors = Joint ownership

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## Copyrights & wrongs



Can't copyright monkey selfies, only for humans

### *Happy Birthday to You*



Generating \$2M per year for Warner/Chappell Music. In September 2015 judge ruled public domain.

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## What you should know about Copyright

- Any copying or use without permission of the owner is an infringement and actionable
- Even no revenue situations can lead to infringement
- © notices not required, but good practice to warn people about your copyright
  - ©2014 by AUTHOR. All rights reserved
- Reverse is true: Just because no ©, does not mean that you are free to copy or use without permission of the author

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## Trademarks

- Protects the name that goods and services are being sold with in a specific jurisdiction
- May be most valuable IP of a business
  - Nike, Apple, Coca-Cola, Google
- Can generate money from licensing

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## Trade Secrets

- Parties agree by contract to keep confidential and not disclose specific information
  - Examples: Coca-Cola, KFC recipe, WD-40, algorithms
- Pros: Relatively cheap and lasts forever
- Cons: If secret gets out without breach of contract, very little protection. Even with a breach, limited damages

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## Trade Secrets in Practice

- Business with employees and contractors need to get everyone to sign agreement
- Some legal weight
- A lot of moral weight
- Employees have an implied obligation
- Need non-competes and non-solicitations

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## Importance of IP

- Important value creation for a Company
  - Criteria for investors, source of revenue, competitive advantage
- IP search gives a snapshot of competitive landscape for the product or idea
  - Do you have freedom to operate?
  - How busy is your industry sector?
  - Who are the players or competitors?

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## Questions?

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