



Selecting Research Topics - Finding a Research Supervisor - Research Integrity Academic Integrity

The object of research is to extend human knowledge beyond what is already known. But an individual's knowledge enters the domain of science only after it is presented to others in such a fashion that they can independently judge its validity (NAP, "On Being a Scientist" 1995)

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References:

<https://www3.nd.edu/~pkamat/pdf/ethics.pdf>

<http://www.nap.edu/catalog/12192.html>

http://research.athabascau.ca/documents/ethics101_nov2017.pdf



Starting you Research



- How to find a research topic?
- How to find a research supervisor?
<https://triton2.athabascau.ca/research/graduate/viewTopics.php>
- When to take COMP 695 – Research Methods course
- When to start – essay, project or thesis?



IP, Copyright, Patent



- http://fgs.athabascau.ca/docs/Intellectual_Property.pdf
- <http://fgs.athabascau.ca/docs/AU-IPGuidelines.Approved.08.09.16.pdf> (IP, copyright, patent,...)



Data Ownership



Who owns research data?

(From ORI
http://ori.dhhs.gov/education/products/RCR_intro/c02/0c2.html)

Authorship

- Policies at most scientific journals state that a person should be listed as the author of a **paper only if that person made a direct and substantial intellectual contribution** to the design of the research, the interpretation of the data, or the drafting of the paper.
- The acknowledgments section can be used to thank those who indirectly contributed to the work.



(From ORI
http://ori.dhhs.gov/education/products/RCR_intro/c02/0c2.html)



What is publishable?



- Papers that report “**original and significant**” findings that are likely to be of interest to a broad spectrum of its readers
- Papers that are **well organized and well written**, with clear statements regarding how the findings relate to and advance the understanding/development of the subject



Research Misconduct



Research misconduct means **Fabrication, Falsification, or Plagiarism (FFP)** in proposing, performing, or reviewing research, or in reporting research results.

(a) Fabrication is making up data or results and recording or reporting them.

(b) Falsification is manipulating research materials, equipment, or processes, or changing or omitting data or results such that the research is not accurately represented in the research record.

(c) Plagiarism is the appropriation of another person's ideas, processes, results, or words without giving appropriate credit. Self-Plagiarism

(d) Research misconduct does not include honest error or differences of opinion.



Data Manipulation

Misleading data can also arise from poor experimental design or careless measurements as well as from improper manipulation.

When a mistake appears in a journal article or book, it should be corrected in a note, erratum (for a production error), or Additions/Corrections



(From ORI
http://ori.dhhs.gov/education/products/RCR_intro/c02/0c2.html)



Good Record Keeping



It is your fundamental obligation to create and maintain an accurate, accessible, and permanent record of data.

Record and Share sufficient detail for others to check and replicate the work.

You may want to consider storing your raw data with [BlockChains](#)

Your (real) Impact Factor

$$\text{Impact Factor (corrected)} = \frac{\begin{array}{l} \# \text{ times your work is cited} \\ - \# \text{ citations that actually trash your work} \\ - \# \text{ times you cited yourself (nice try)} \\ - \# \text{ times you were cited just to pad the introduction section} \\ - \# \text{ citations the editor pressured the author to include to increase the journal's impact factor} \end{array}}{\begin{array}{l} \# \text{ original articles you've written} \\ + \# \text{ articles you were included in out of pity or politics} \\ + \# \text{ not-so-original articles you've} \\ \quad \text{~~written~~ copied and pasted} \end{array}}$$



Responsible research



Shun predatory journals and conferences

Shun plagiarism (TurnItIn, HeliobLAST)

Be on the edge of the research frontier

Be thorough with your research methods

Be ethically clean





Research Ethics – before starting research



- Research involving living human participants; Research involving human remains, cadavers, tissues, biological fluids, embryos or fetuses; Research about a living individual in the public arena if s/he is to be interviewed and/or private papers accessed; Research involving secondary use of data (use of data initially collected for another purpose) - health records, employee records, student records, computer listings, banked tissue - if any form of identifier is involved and/or if private information pertaining to individuals is involved; Quality assurance studies and program evaluations which address a research question.
- Greater than minimal risk = full Research Ethics Board review
- Minimal risk = delegated review or application for exemption
- Research Ethics Portal (ALL applications) at <http://research.athabasca.ca/portal/index.php>
- TCPS training - <http://www.pre.ethics.gc.ca/eng/education/tutorial-didacticiel/>



What doesn't require REB approval



- Research about individuals in the public arena using only publicly available or accessible records without contact with the individual/s.
- Research involving naturalistic observation in public venues.
- Quality assurance studies, program evaluations, performance reviews, and testing within normal educational and/or organizational requirements, to be used for assessment and/or improvement purposes; and there is no research question involved.
- Research based on review of published/publicly reported literature.
- Research involving secondary use of data ([Article 5.5](#)) which is provided without any identifier or group of identifiers which would allow attribution of private information to an individual.
- Consulting, unless carried out under the auspices of the university.



Academic Integrity



- Responsible pursuit of academic work – coursework
- Why should you care about academic integrity?
- Academic misconducts (<http://calendar.athabascau.ca/undergrad/current/student-code/academic-misconduct-offences.php>)
 - Plagiarism
 - Admission offences
 - Cheating
 - Collusion
 - Unauthorized use of Athabasca University materials
 - Misrepresentation of facts and fraud
 - Aiding another in committing an academic offence