

## **Integrity in Research: Information for Graduate Students**

Prepared by the Faculty of Medicine, Office of Graduate Affairs Fall 2011

### **Introduction**

The University of Toronto and the research community at large view issues related to academic integrity and research misconduct extremely seriously. Graduate students, like everyone else involved in research, are expected to be familiar with, and adhere to the most current University of Toronto and affiliated hospital guidelines and policies relating to graduate research. Students should refer to the full versions of the policies and guidelines outlined in this document at the links provided.

The Graduate Affairs Office acknowledges its debt to Dr. David McKnight, Associate Dean, Equity and Professionalism for providing material in this document. The information presented is also available at the Graduate Affairs Website: <http://www.facmed.utoronto.ca/programs/graduate/gradethics.htm>

### **What is Integrity in Research?**

Research integrity is the cornerstone of investigation at the University of Toronto. It is learned behaviour and is based on universal principles. The Singapore Statement on Research Integrity, drafted in 2010 at the 2<sup>nd</sup> World Conference on Research Integrity, articulates 4 principles that are fundamental to the integrity of research.

**Honesty** in all aspects of research  
**Accountability** in the conduct of research  
**Professional courtesy and fairness** in working with others  
**Good stewardship** of research on behalf of others

Graduate students are expected to embrace these principles and use them as a guide to carry out and communicate research discoveries and to utilize these discoveries to improve the health of the population, either directly or indirectly.

The Singapore Statement is reproduced by permission and the entire statement is at the end of this document. It is also located online: <http://www.singaporestatement.org/>

### **Why is Integrity in Research important?**

Researchers should aspire to the highest level of academic integrity and adhere to codes of behaviour and practices that ensure they develop good habits in their careers as scientists.

The cost of research misconduct is immense;

- it devalues research and undermines science inquiry
- erodes the public's trust in research
- It is expensive and time consuming to investigate and correct
- It can inflict irreparable damage to reputations and careers

## What is Considered Academic Misconduct at the University of Toronto?

Students should build their repertoire of best research and academic practices early in their career. Being familiar with what is considered misconduct will help avoid the pitfalls.

The University of Toronto has two major policies that pertain to both academic misconduct in a broad sense and research misconduct specifically. As a graduate student, you should be familiar with these documents:

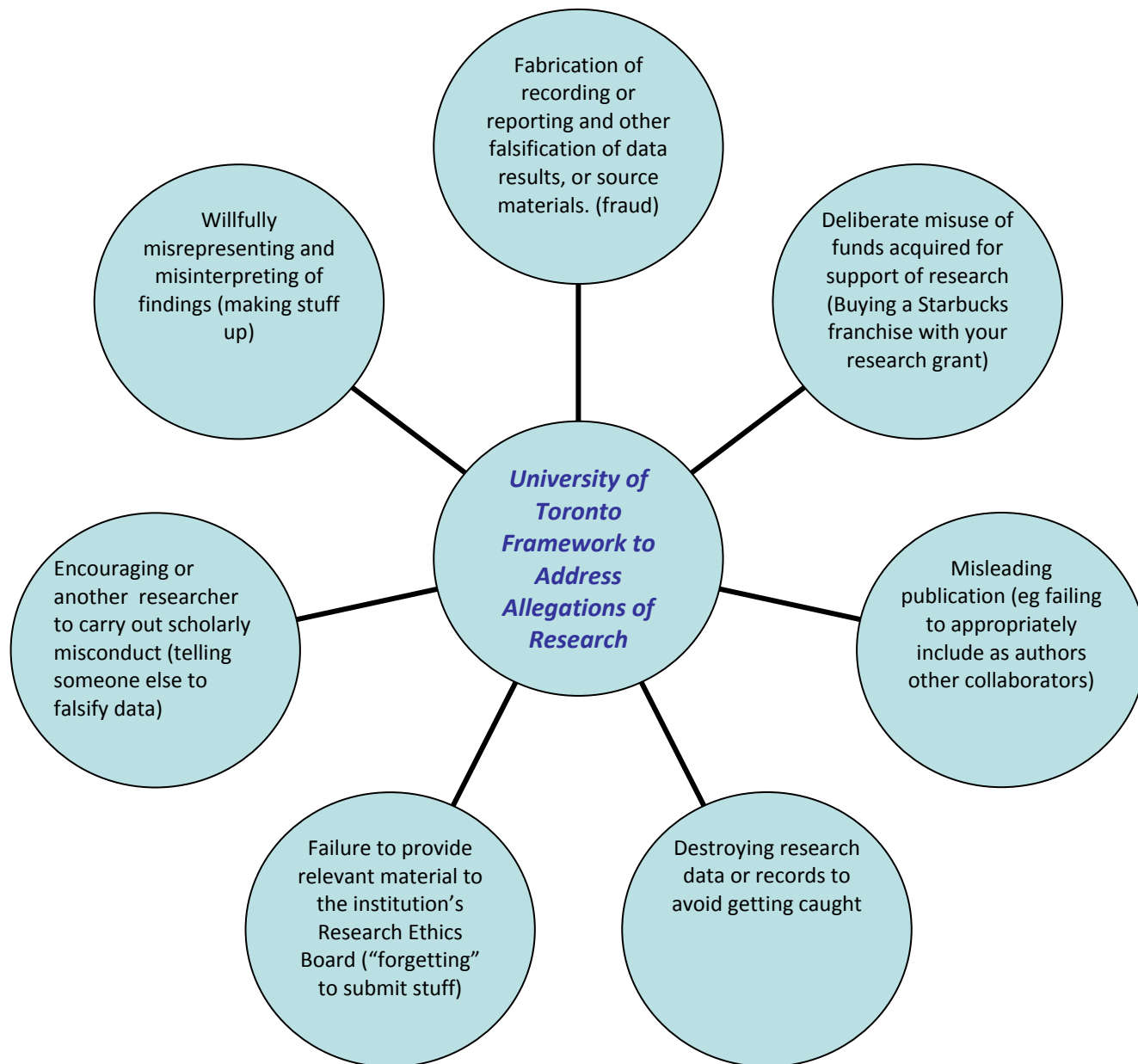
- **Code of Behaviour on Academic Matters**  
<http://www.governingcouncil.utoronto.ca/policies/behaveac.htm>
- **Framework for Addressing Research Misconduct**  
<http://www.facmed.utoronto.ca/Assets/FacMed+Digital+Assets/research/Research+Misconduct.pdf?met hod=1>

The **Code of Behaviour on Academic Matters** states it is an offence for a student to knowingly engage in:

Type of Offence	Example(s)
Plagiarism	<ul style="list-style-type: none"> <li>• Copying an idea from a website, book, or another source without a reference to say where you copied it from</li> </ul>
Forgery, fraud, altering documents	<ul style="list-style-type: none"> <li>• Misrepresentation of experimental data</li> <li>• Inappropriate selection of results</li> <li>• Inappropriate use of controls</li> <li>• Getting a medical note to miss a test/exam when you aren't really sick</li> <li>• Changing an answer on a test that has been marked</li> </ul>
Unauthorized Aid (giving or receiving)	<ul style="list-style-type: none"> <li>• Bringing a cell phone into a test or exam</li> <li>• Emailing your assignment to a friend who might copy from it</li> <li>• Having study notes in your pocket during a test or exam (even if you don't use them)</li> <li>• Working together on an assignment that is supposed to be your own work</li> <li>• Allowing an "editor" to change your work or add material, rather than just suggesting places which need work</li> </ul>
Impersonation	<ul style="list-style-type: none"> <li>• Writing a test for a friend, using their TCard</li> <li>• Using a friend's iClicker to answer questions for them when they aren't in class</li> </ul>
False or Concocted References	<ul style="list-style-type: none"> <li>• Making up a reference to a book that doesn't exist</li> <li>• Citing an incorrect source</li> </ul>
Submitting work for which credit has already been received.	<ul style="list-style-type: none"> <li>• Submitting the same essay to two different courses</li> <li>• Copying paragraphs from one of your older essays into an essay for a current course</li> </ul>

Adapted from: Office of Student Academic Integrity, Faculty of Arts & Science, **Academic Integrity: A Quick Guide**, <http://www.cie.utoronto.ca/Coming/Academic-Culture/Academic-Integrity--A-Quick-Guide.htm>, accessed October 18, 2011.

While the **Code of Behaviour on Academic Matters** deals directly with fabrication, falsification and plagiarism as related to requirements, such as course work, the **Framework to Address Allegations of Research Misconduct** pertains to research misconduct of graduate students and faculty. It lists 16 types of research misconduct; here is a sample:



<http://www.facmed.utoronto.ca/Assets/FacMed+Digital+Assets/research/Research+Misconduct.pdf?method=1>

## **Support at the University of Toronto**

**How not to Plagiarize** by Margaret Procter, Writing Support, University of Toronto

This is an excellent resource on plagiarism. It includes sections on documentation, quotations and paraphrasing.

<http://www.writing.utoronto.ca/advice/using-sources/how-not-to-plagiarize>

### **School of Graduate Studies Office of English Language and Writing Support**

The Office provides support for native and non-native English speakers including courses, workshops and individual writing consultations. It also lists useful links to writing resources such as citation formats.

<http://www.sgs.utoronto.ca/informationfor/students/english.htm>

**The Academic Integrity Booklet** describes the procedures and student rights and responsibilities under the Code of Behaviour on Academic Matters and is helpful for any student involved in a misconduct case.

<http://www.viceprovoststudents.utoronto.ca/Assets/Students+Digital+Assets/Vice-Provost%2c+Students/Publications/academicintegrity.pdf>

**Academic Integrity Resources for Students** webpage lists online resources for students to help avoid issues of academic misconduct

<http://www.utoronto.ca/academicintegrity/resourcesforstudents.html>

### **Conducting Ethical Research at the University of Toronto**

[\*Research Involving Human Subjects \(School of Graduate Studies Guide\)\*](#)

<http://www.sgs.utoronto.ca/governance/policies/researchinvolvinghumansubjects.htm>

This guide outlines the procedure for obtaining approval for conducting research involving human subjects at the University of Toronto and contains information such as what research requires review, elements of the review, with a graduate student slant.

### **Ethical Conduct in Research, the Office of the Vice-President, Research**

<http://www.research.utoronto.ca/for-researchers-administrators/ethics/resources/ethical-conduct/>

The Office of the Vice-President, Research is central to research ethic board (REB) reviews and maintaining comprehensive information and links to information on animal and human subject research. This page also contains a succinct outline of the **Framework to Address Allegations of Research Misconduct** and the role of the Office of the Vice-President, Research in research misconduct allegations.

### **Research Ethics Reviews at the University of Toronto**

This page contains links to applications and information on research ethics reviews. REBs are administrated by the University of Toronto Office of Research.

<http://www.research.utoronto.ca/for-researchers-administrators/ethics/>

**Faculty of Medicine Graduate Affairs** website provides information on the Integrity in Research Workshops for graduate students and links to resources geared to Medicine. This page includes links to Medicine-specific resources and outside agencies.

<http://www.facmed.utoronto.ca/programs/graduate/gradethics.htm>

### **School of Graduate Studies Academic Misconduct Information**

A website focused on graduate academic misconduct. It outlines the procedures for cases involving graduate students which go beyond the departmental level and are heard by the School of Graduate Studies.

<http://www.sgs.utoronto.ca/governance/policies/academicmisconduct.htm>

## **Other Integrity Links**

### **Tri-Council Policy Statement Integrity in Research and Scholarship.**

The Tri-Council is the Canadian Institutes of Health Research, the Natural Sciences and Engineering Research Council and the Social Sciences and Humanities Research Council. They are the major source of federal funds for research and scholarship in academic institutions. The principles of the statement outline the responsibilities of grant holders and their institutions.

[http://www.nserc-crsng.gc.ca/NSERC-CRSNG/policies-politiques/tpsintegrity-picintegritie\\_eng.asp](http://www.nserc-crsng.gc.ca/NSERC-CRSNG/policies-politiques/tpsintegrity-picintegritie_eng.asp)

**Canadian Institutes for Health Research's Ethics Resources and Publications webpage**  
<http://www.cihr.ca/e/29371.html>

**International Committee of Medical Journal Editors**  
<http://www.icmje.org/>

**National Institutes of Health Bioethics Resources on the Web**  
<http://bioethics.od.nih.gov/>

**International Neuroethics Society**  
[http://ns.memberclicks.net/index.php?option=com\\_content&view=article&id=44](http://ns.memberclicks.net/index.php?option=com_content&view=article&id=44)

**Society for Neuroscience**  
[http://www.sfn.org/index.aspx?pagename=responsibleConduct\\_authorsOfResearchManuscripts](http://www.sfn.org/index.aspx?pagename=responsibleConduct_authorsOfResearchManuscripts)

**World Association of Medical Editors**  
<http://www.wame.org/resources/publication-ethics-policies-for-medical-journals>

**TCPS 2: CORE** (Course on Research Ethics) is an introduction to the 2nd edition of the *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS 2)*  
<http://tcps2core.ca/welcome>

**The Office of Research Integrity in the United States**  
<http://ori.hhs.gov/>

**The Lab**, is an excellent interactive movie on research misconduct produced by the U.S. Office of Research Integrity. The tutorial presents a lab-based fictional situation in which watchers can take the perspective of different characters and simulate decision-making within the scenario.  
<http://ori.hhs.gov/TheLab/>

## **University of Toronto Policies Related to Integrity in Research**

### **Code of Behaviour on Academic Matters**

The Code addresses the responsibility of all parties to the integrity of the teaching and learning experience at the University of Toronto and outlines the procedures for alleged offences.  
<http://www.governingcouncil.utoronto.ca/policies/behaveac.htm>

### **Code of Student Conduct**

This code defines non-academic offences at the University of Toronto.  
<http://www.governingcouncil.utoronto.ca/policies/studentc.htm>

### **Ethical Conduct in Research**

This University of Toronto policy states that “highest standards of ethical conduct in every aspect of research including applications, proposals, the research itself, reports and publications” are expected of all members of university.  
<http://www.governingcouncil.utoronto.ca/policies/ethicalr.htm>

### **Policy on Research Involving Human Subjects**

<http://www.governingcouncil.utoronto.ca/policies/humanres.htm>

### **University of Toronto Statement on Human Rights**

<http://www.governingcouncil.utoronto.ca/policies/hrights.htm>

## **Faculty of Medicine link to Related Guidelines and Policies on Integrity in Research**

<http://www.facmed.utoronto.ca/Research/researchpolicies.htm>

# Singapore Statement on Research Integrity

**Preamble.** The value and benefits of research are vitally dependent on the integrity of research. While there can be and are national and disciplinary differences in the way research is organized and conducted, there are also principles and professional responsibilities that are fundamental to the integrity of research wherever it is undertaken.

## PRINCIPLES

**Honesty** in all aspects of research  
**Accountability** in the conduct of research  
**Professional courtesy and fairness** in working with others  
**Good stewardship** of research on behalf of others

## RESPONSIBILITIES

**1. Integrity:** Researchers should take responsibility for the trustworthiness of their research.

**2. Adherence to Regulations:** Researchers should be aware of and adhere to regulations and policies related to research.

**3. Research Methods:** Researchers should employ appropriate research methods, base conclusions on critical analysis of the evidence and report findings and interpretations fully and objectively.

**4. Research Records:** Researchers should keep clear, accurate records of all research in ways that will allow verification and replication of their work by others.

**5. Research Findings:** Researchers should share data and findings openly and promptly, as soon as they have had an opportunity to establish priority and ownership claims.

**6. Authorship:** Researchers should take responsibility for their contributions to all publications, funding applications, reports and other representations of their research. Lists of authors should include all those and only those who meet applicable authorship criteria.

**7. Publication Acknowledgement:** Researchers should acknowledge in publications the names and roles of those who made significant contributions to the research, including writers, funders, sponsors, and others, but do not meet authorship criteria.

**8. Peer Review:** Researchers should provide fair, prompt and rigorous evaluations and respect confidentiality when reviewing others' work.

**9. Conflict of Interest:** Researchers should disclose financial and other conflicts of interest that could compromise the trustworthiness of their work in research proposals, publications and public communications as well as in all review activities.

**10. Public Communication:** Researchers should limit professional comments to their recognized expertise when engaged in public discussions about the application and importance of research findings and clearly distinguish professional comments from opinions based on personal views.

**11. Reporting Irresponsible Research Practices:** Researchers should report to the appropriate authorities any suspected research misconduct, including fabrication, falsification or plagiarism, and other irresponsible research practices that undermine the trustworthiness of research, such as carelessness, improperly listing authors, failing to report conflicting data, or the use of misleading analytical methods.

**12. Responding to Irresponsible Research Practices:** Research institutions, as well as journals, professional organizations and agencies that have commitments to research, should have procedures for responding to allegations of misconduct and other irresponsible research practices and for protecting those who report such behavior in good faith. When misconduct or other irresponsible research practice is confirmed, appropriate actions should be taken promptly, including correcting the research record.

**13. Research Environments:** Research institutions should create and sustain environments that encourage integrity through education, clear policies, and reasonable standards for advancement, while fostering work environments that support research integrity.

**14. Societal Considerations:** Researchers and research institutions should recognize that they have an ethical obligation to weigh societal benefits against risks inherent in their work.