

Research Integrity: With an Emphasis on Plagiarism

Shared values relevant to research?

- Accuracy
 - Reporting findings precisely and taking care to avoid errors.
- Efficiency
 - Using resources wisely and avoiding waste.
- Objectivity
 - Letting the facts speak for themselves and avoiding improper bias.
- Trustworthiness
 - Following through on commitments.
- Integrity

What is Research Integrity?

- It's difficult to find a concise definition of Research Integrity.
- Distinguish between two uses of the term Research Integrity.

Research Integrity

- *Purdue's Statement on Integrity and Code of Conduct*
[http://www.purdue.edu/purdue/about/integrity_statement.html]
- “At Purdue, integrity is indispensable to our mission. We act with honesty and adhere to the highest standards of moral and ethical values and principles through our personal and professional behavior. We demonstrate our understanding of these values and principles and uphold them in every action and decision. Trust and trustworthiness go hand in hand with how we conduct ourselves, as we sustain a culture that is based upon ethical conduct. We expect our actions to be consistent with our words, and our words to be consistent with our intentions. We accept our responsibilities, share leadership in a democratic spirit, and subject ourselves to the highest standards of public trust. We hold ourselves accountable for our words and our actions.”

Research Integrity

- **Purdue's *Policy on Research Misconduct***

[<http://www.purdue.edu/policies/ethics/iiia2.html>]

- “Integrity with regard to discovery, scholarly investigation, and the recording and reporting of these activities, is a core principle of academic life and is essential to scientific and scholarly progress. The proper conduct of scientific and scholarly research serves the best interests of the University community and society. Hence, a commitment to truth, objectivity, and honesty should guide everyone engaged in research at the University. Those participating in scientific or scholarly research are expected to maintain careful research records, to establish and follow well-defined protocols consistent with all state, federal, and University guidelines, and to report discoveries, observations, and scholarly and artistic activities accurately and fairly.”

Research Integrity

- Not defined explicitly in regulation.
- 2002 IOM Report
 - “For a scientist, integrity embodies above all the individual’s commitment to intellectual honesty and personal responsibility. It is an aspect of moral character and experience.”
 - “For an institution, it is a commitment to creating an environment that promotes responsible conduct by embracing standards of excellence, trustworthiness, and lawfulness and then assessing whether researchers and administrators perceive that an environment with high levels of integrity has been created.”
- A core value and personal responsibility of all who conduct research and/or scholarship.

Research Misconduct

- 2000 OSTP Federal Research Misconduct Policy defines violations of Research Integrity, which are called Research Misconduct, as
 - Fabrication, Falsification, or Plagiarism in proposing, performing, or reviewing research, or in reporting research results; when this action:
 - Represents a significant departure from accepted practices of the relevant research community;
 - Is committed intentionally, knowingly, or recklessly; and
 - The allegation is proven by a preponderance of evidence.
 - The definition goes on to assert that Research Misconduct does not include honest error or differences of opinion.
 - Purdue adopted this definition in Policy III.A.2 (2008).

Research Integrity

- Implicit in the Federal definition of Research Misconduct is the concept that Research Integrity includes a ***commitment to ensuring and preserving the accuracy and completeness of the research record***, where this record encompasses *proposals, lab data records, peer review, and submissions to the scientific/scholarly literature.*

Why Must Research Integrity Be a Core Value?

- All researchers/scholars rely on the accuracy and completeness of the research record, and, therefore, share a responsibility to preserve and protect it.
- Accurate and complete records of research are essential to preserve public trust in science and scientists.
- Once the research record has been corrupted, it's accuracy and integrity can never be completely restored.

How common is Research Misconduct?

- We don't really know.
- There are findings every year, but not all agencies publish reports of findings.
- Available studies suggest it's a rare event.
- However, some forms of Research Misconduct are difficult to detect
 - Peer review is not sufficient
 - Lack of replication for most research data
- Many disincentives to reporting suspected research misconduct [Gunsalus, CK, How to blow the whistle and still have a career afterwards. Science and Engineering Ethics 4: 51-64 (1998)]

If it's not common, why talk about it?

- While individuals in most audiences know that it's wrong to misrepresent data or take credit for the work of another (and may not be tempted to commit research misconduct), *every practicing researcher/scholar will witness actions that they suspect/believe to be research misconduct at some point in their career.*
- The good news is that most of these suspicions will turn out to be unfounded due to incomplete information or misunderstanding.
- The bad news is that you won't know which are unfounded and which are valid concerns without further inquiry/investigation.
- Therefore, students need to be prepared.

Reputation: Our most valuable asset

- Accusations or suspicions of misconduct can damage an individual's reputation, even if eventually found to be untrue; and it's usually impossible to repair the damage.

Reporting Allegations of Misconduct

- Discretion (confidentiality) is critical
- Check the facts to the best of your availability
- In confidence, bring your concern to the attention of someone who has the training and authority to address and resolve the suspicions.
 - This is generally not a labmate or a spouse or a departmental secretary, etc.
- Each institution is required to clearly designate a responsible official and process for reporting concerns of research misconduct, and remind researchers regularly who and what this is. When not known widely, allegations inevitably surface at inappropriate times and places.
- At Purdue, allegations of research misconduct should be brought to the attention of the Research Integrity Officer (RIO).

Purdue's Research Integrity Officer

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Response to allegations

- Federal regulations identify detailed “due process procedures” to address allegations of research misconduct.
 - Presumption of innocence
 - Confidentiality
 - The accused (respondent) will be informed of the allegation and given a chance to respond
 - Initial assessment
 - Inquiry: determination if the allegation merits further investigation
 - Investigation: determination if more likely than not that research misconduct occurred

Most Common Allegations of Research Misconduct

- #1 = Plagiarism
- #2 = Falsification of data by manipulation of digital images (“*Photoshoping*”)
- Why most common?
 - Strong forensic tools available to detect
- Availability of *iThenticate*

Plagiarism

- Origin: derived from the Latin word *“plagiarius”*
 - *“one who abducts the child or slave of another”**
- Definition: *Plagiarism is the appropriation of another person's ideas, processes, results, or words without giving appropriate credit.***

*Scott McLemee, “What is Plagiarism,” The Chronicle of Higher Education,” December 17, 2004

** 2000 OSTP Federalwide Policy on Research Misconduct

Recognizing Plagiarism

- Most likely to occur by ...*
 - Using the exact language of someone else without the use of quotation marks and without giving proper credit to the author
 - Presenting the sequence of ideas or arranging the material of someone else even though such is expressed in one's own words, without giving appropriate acknowledgment
 - Submitting a document written by someone else but representing it as one's own.

*S. Akers, "Academic Integrity: A Guide for Students," ODOS, 2003,
<http://www.purdue.edu/ODOS/osrr/integrity.htm>

Avoiding Plagiarism

- When to give credit ...^{1,2}
 - “Put in quotations everything that comes directly from the text”
 - “Paraphrase, but be sure you are not just rearranging or replacing a few words”
 - Always give credit ...
 - “when you are using or referring to someone else’s words or ideas ...”
 - “when you use information gained through interviewing another person”
 - “when you copy the exact words or a ‘unique phrase’ from somewhere”
 - “when you reprint any diagrams, illustrations, charts, and pictures”
 - “when you use ideas that others have given you in conversations or over e-mail”

¹Online Writing Laboratory, “Avoiding Plagiarism,”
http://owl.english.purdue.edu/handouts/research/r_plagiar.html

²Writing Tutorial Services, “Plagiarism: What it is and How to Recognize and Avoid It,”
<http://www.indiana.edu/~wts/wts/plagiarism.html>

Not Necessary to Give Credit ¹

- “when you are writing your own experiences, your own observations, your own insights, your own thoughts, your own conclusions about a subject”
- “when you are using ‘common knowledge’ –folklore, common sense observations, shared information within your field of study or cultural group”
- “when you are compiling generally accepted facts”
- “when you are writing up your own experimental results”

¹Online Writing Laboratory, “Avoiding Plagiarism,”
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Copyright vs Plagiarism

- Copyright is a legal property right associated with all original works of authorship fixed in a tangible medium of expression.
 - Author(s) of original work own copyright to the work
 - Protects the expression or presentation of an idea;
 - Copyright owner has exclusive rights over reproduction, distribution, sale, and public performance of the work.
- Direct reproduction of another author's words, images, data, ideas without permission may infringe copyright.
- Copyright infringement is a violation of law.
- Plagiarism per se is not illegal; it is an act of research misconduct.
- Relationship of plagiarism to copyright infringement.

“Self-Plagiarism”

- Refers to the re-use by an author of their own words or concepts originally published in one work in a second work, without citing the original work.
 - Representing a phrase or concept as original when it is not.
- Is not Plagiarism or Research Misconduct since the author is re-using their own words or concepts.
- Is bad scholarship, since an idea or concept is only original once!