Ethics in Research

Nirankar Nath Mishra, PhD

AY 2024-25

Ethics in Research

Ethics

 The study of what is right and wrong in human behaviour

 Beliefs about what is morally correct or acceptable

 The principles of conduct governing an individual or a group professional ethics

 A consciousness of moral importance

Definition of research ethics

Research ethics involves the application of fundamental ethical principles to research activities which include the design and implementation of research, respect towards society and others, the use of resources and research outputs, scientific misconduct and the regulation of research.

Ethics in Research

- Extremely important as engineered products deal with humans
- Failure in engineering research outcome may lead to
  - Casualties, health hazards, pollution
  - Property loss, hit on economy
- Professional societies regulate the activities of practicing engineers and industry

Ethics in Engineering Research

- Practicing engineer should
  - Exchange of information freely with other practitioners
  - Adhering to code of ethics
  - Holistic view of the project
  - Maximize benefit of all stakeholders

Ethics in Research

Safety

Safety oversees the safe use of chemicals, biological materials, medical, pharmaceuticals, radioactive isotopes and other sources of radiation and ensures compliance with federal and state regulations. The safety must be available to assist the research community in all matters related to the safe conduct of research, including the control of hazards such as chemicals, biological materials including blood-borne pathogens, lasers, fire, verbal and physical harm.

Ethics in Research

Plagiarism

Authors who present the words, data, or ideas of others with the implication that they are their own, without attribution in a form appropriate for the medium of presentation, are committing theft of intellectual property and may be guilty of plagiarism and thus of research misconduct.

Ethics in Research

Plagiarism

If there is a word-for-word copying beyond a short phrase or six or seven words of someone else's text, that section should be enclosed in quotation marks or indented and referenced, at the location in the manuscript of the copied material, to the original source.

Ethics in Research

Misuse of Privileged Information

One particularly serious form of plagiarism is the misuse of privileged information taken from a grant application or manuscript received from a funding agency or journal editor for peer review.

Credit:
https://www.irb.pitt.edu/sites/default/files/guidelines_for_ethical_practices_in_research-finalrevised2-march_2011.pdf

Ethics in Research

Data

a. Integrity of Data
Fabrication and falsification of research results are serious forms of misconduct. It is a primary responsibility of a researcher to avoid either a false statement or an omission that distorts the research record.

Credit:
https://www.irb.pitt.edu/sites/default/files/guidelines_for_ethical_practices_in_research-finalrevised2-march_2011.pdf

Ethics in Research

Data

b. Use and Misuse of Data

It is considered a breach of research integrity to fail to report data that contradict or merely fail to support the reported conclusions, including the purposeful withholding of information about confounding factors.
A large background of negative results must be reported. Any intentional or reckless disregard for the truth in reporting observations may be considered to be an act of research misconduct.

Ethics in Research

Data

c. Ownership of and Access to Data

Research data obtained in studies performed at the research place and/or by employees of the Research institute or centre or university etc. are not the property of the researcher who generated or observed them or even of the principal investigator of the research group. They belong to the place of employees organization where its generated.

Credit:
https://www.irb.pitt.edu/sites/default/files/guidelines_for_ethical_practices_in_research-finalrevised2-march_2011.pdf

Ethics in Research

Authorship and Other Publication Issues

Publication of research results is important as a means of communicating to the scholarly world so that readers may be informed of research results and other researchers may build on the reported findings. In fact, it is an ethical obligation for an investigator to make research findings accessible, in a manner consistent with the relevant standards of publication.

Credit:
https://www.irb.pitt.edu/sites/default/files/guidelines_for_ethical_practices_in_research-finalrevised2-march_2011.pdf

Ethics in Research

Criteria for Authorship

Publication must give appropriate credit to all authors for their roles in the research. If more than one person contributes significantly, the decision of which names are to be listed as co-authors should reflect the relative contributions of various participants in the research.

Credit:
https://www.irb.pitt.edu/sites/default/files/guidelines_for_ethical_practices_in_research-finalrevised2-march_2011.pdf

Ethics in Research

Self-citations

In citing one's own unpublished work, an author must be careful not to imply an unwarranted status of a manuscript. A paper should not be listed as submitted, in anticipation of expected submission.

A paper should not be listed as accepted for publication or in press unless the author has received galley proof or page proof or has received a letter from an editor.

Duplicate Publication

Researchers should not publish the same article in two different places without very good reason to do so, unless appropriate citation is made in the later publication to the earlier one, and unless the editor is explicitly informed.

Ethics in Research

Interference

Not only withholding of data but intentional removal of, interference with, or damage to any research related property, including instruments and other equipment, is improper and could be classified as research misconduct.

Credit:
https://www.irb.pitt.edu/sites/default/files/guidelines_for_ethical_practices_in_research-finalrevised2-march_2011.pdf

Ethics in Research

Obligation to Report
Reporting Suspected Misconduct
Reporting suspected research misconduct is a shared and serious responsibility of all members of the academic community. Any person who suspects research misconduct has an obligation to report the allegation to the unit in which the suspected misconduct occurred or to the appropriate or designated officer at research work place.

Ethics in Research

Conflict of Interest

There are some circumstances in which conflicts of interest could compromise the integrity of research or even lead to research misconduct, for example, by the distortion of research outcomes as a result of personal financial interests of a researcher.

Credit:
https://www.irb.pitt.edu/sites/default/files/guidelines_for_ethical_practices_in_research-finalrevised2-march_2011.pdf

Ethics in Research

Responsibilities of a Research Investigator

An investigator who leads a research group has leadership and supervisory responsibilities with respect to the research performed by members of the group. A principal investigator must not only put together the research group but also arrange for the assembly of an adequate financial and administrative structure to support the research. A supervisor not only provides guidance and advice to individual members of the group in the responsible conduct of the research but also has ultimate responsibility for the scientific integrity of the whole research project**.**

Ethics in Research

Special Obligations in Human Subject Research

Research protocols involving human subjects must be approved in advance by the University/Institutional Review Board (IRB), which determines whether risks posed to subjects are acceptable and whether information describing risks and benefits of subject participation is conveyed to subjects in an accurate and intelligible manner. IRB review also ensures that all relevant University/Institute, Federal, state, and local regulations and
policies are being followed.

Credit:
https://www.irb.pitt.edu/sites/default/files/guidelines_for_ethical_practices_in_research-finalrevised2-march_2011.pdf