Academic Writing II – Research Ethics

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Get busy **living**?

or

Get busy **dying**?

-- *The Shawshank Redemption*

Purpose

What is the purpose of your PhD study?

- Interest: Passion/enthusiasm => a green heart
- Focus: Specialisms/expertise in => one or two disciplines
- Gritty: Persist in doing science => long view vs. short view

No rich, no research?

- PhD project ~= A never ending project
- E = MC^2 ,
- where E is the efficiency of PhD study, M denotes Motivation, C means the time consumption of your supervisor, and yourself.

The 3 Must-Have Traits:

Intelligence, Energy, and Integrity.

-- Warren Buffett

Online Course

I. Ethical Issues in Research: A Framework
- A. Compliance and Ethics
- B. Compliance Concepts
- C. Ethics Concepts

II. Interpersonal Responsibility
- A. Mentor/Trainee Responsibilities
- B. Determining Publication Practices and Responsible Authorship
- C. Collaborative Science/Competitive Science

III. Institutional Responsibility
- A. The Institutional Process Regarding Allegations
- B. Conflicts of Interest and Conflicts of Commitment
- C. IRB/IACUC

IV. Professional Responsibility
- A. Proposing Research
- B. Dissemination of Findings
- C. Peer Review

V. Animals in Research

VI. Human Participation in Research

https://ori.hhs.gov/education/products/montana_round1/research_ethics.html

Principles

Honesty and Integrity:

Researchers must be truthful in all aspects of their work. This includes reporting data, methods, and results accurately, without fabrication, falsification, or misrepresentation.

It's the foundation of knowledge. If the data is fake, the conclusions are meaningless and can actively mislead other researchers and the public.

Objectivity:

Strive to avoid bias in all stages of research, from experimental design and data analysis to interpretation and peer review. This includes disclosing any personal or financial conflicts of interest that could influence the work.

Ensures that findings are a true reflection of the evidence, not a researcher's personal beliefs or desires.

Principles

Informed Consent:

Participants must be given all the information necessary to make a voluntary decision about whether to participate. This includes the purpose of the research, procedures, potential risks and benefits, and their right to withdraw at any time without penalty. Consent must be given freely, without coercion.

It respects the autonomy and dignity of the individual, allowing them to make their own choice about what happens to them.

Confidentiality:

The researcher knows the participant's identity but promises not to disclose it publicly.

Anonymity:

The researcher cannot link the data to any specific individual, even themselves.

Protects participants from potential harm (e.g., embarrassment, legal or social repercussions) and encourages honest participation.

Principles

Beneficence and Non-maleficence:

The research should aim to do good (beneficence) and, above all, do no harm (non-maleficence). This means maximizing potential benefits for participants and society while minimizing any potential risks (physical, psychological, social, or economic).

It is a fundamental ethical obligation to ensure that the pursuit of knowledge does not come at the expense of human well-being.

Justice:

The burdens and benefits of research should be distributed fairly. This principle ensures that no single group of people (e.g., the poor, the institutionalized) bears the brunt of research risks, and that groups who are likely to benefit from the research are also included in it.

Prevents the exploitation of vulnerable populations and ensures that the benefits of research, like new treatments, are available to all.

Social Responsibility:

Researchers have a duty to conduct research that is of value to society and to disseminate their findings in a way that can benefit the public good. This also includes considering the potential for their research to be misused (dual-use research).

Ensures that research funding and effort are directed toward meaningful problems and that knowledge is shared to advance society.

International Collaboration

NWAFU, China

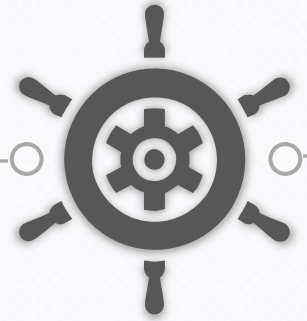
Complex forest ecosystems
Simulation-based optimization

CAF, China

Forest productivity
Climate-sensitive growth models

CAS, China

Tree physiology
Forest ecology
Global change biology



TUM, Germany

Empirical data platform
CSF silvicultural guidelines
Model scenario analyses
Wood-fungi-composite materials
Forest-based bioeconomy

EFI, Finland

Forest resources
Ecosystem services

UNIMOL, Italy

Project coordination
Monitoring safe operational mode
Climate-smartness indicators

UNIFR, Germany

Forest economics and planning
Forest risk assessment
Biodiversity conservation

INIA, Spain

Trade-offs between adaptation and mitigation

References

- Elsevier, 2007. How to Write a World Class Paper. Elsevier Author Workshop. 205 pp.
- Ethics Toolkit from Elsevier: https://researcheracademy.elsevier.com/uploads/2018-02/ethics_a5_booklet_update260617_web.pdf
- Norris, C.B., 2005. Academic Writing in English. Language Services. University of Helsinki. 70 pp.
- Online Research Ethics Course: https://ori.hhs.gov/education/products/montana_round1/research_ethics.html
- Swales, J.M., Feak, C.B., 1994. Academic Writing for Graduate Students -- Essential Tasks and Skills. The University of Michigan Press. 253 pp.
- Weissberg, R., and Buker, S. 1990. Writing up research: experimental research report writing for students of English. Prentice Hall, Inc. 202 pp.