PUBLICATION ETHICS AND INTEGRITY

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Ethics of Publication

- These are generally accepted code of conduct in all stages of writing and disseminating research findings
- These include:
  - writing of manuscripts
  - citation of authors
  - acknowledgement of contributions
  - authorship of manuscript
  - outlets & types of publications
- ✓ **Integrity** has important role to play in these stages

Examples of Scientific Publications

Materials that have undergone some peer review mechanism

a) Articles in journals
b) Abstracts presented at conferences
c) Monographs
d) Technical reports
e) Others

Nine Best Practices in Publication

1. Publish results in an open, transparent and accurate manner, as soon as possible
2. All authors should be fully responsible for the contents of the publication.
3. Complimentary or gift authorship should be avoided
4. The criteria for establishing the sequence of authors should be agreed by all, ideally at the start of the project
5. Contributions by collaborators and assistants should be acknowledged, with their permission.

9 Best Practices in Publication

6. All authors should declare any conflict of interest
7. Intellectual contributions of others should be acknowledged and correctly cited
8. Honesty and accuracy should be maintained in communication with the public and the popular media
9. Financial and other support for research should be acknowledged

Integrity in Publication Ethics

- Researchers must conduct their science with honesty, responsibility, and professionalism
  - Being well trained
  - Following the protocol
  - Recording all data as observed/heard
  - Never modifying or omitting data
  - Reporting honestly, with as little bias as possible
  - Publishing findings

Trends in publishing

- Number of authors per article is increasing
- Salami science (minimal publishable unit)
- Impact factors and citation counts are increasingly important
- Electronic publishing
- New distribution models
- New reviewing models (open review)
- Clinical Trial Registries.
- Article retractions on increase.
- Lots of new journals emerging…..some dubious

Recent Publication of Interest

Open access Research

BMJ Open

Plagiarism in research: a survey of African medical journals

Anke Rohwer,[1] Elizabeth Wager,[2,3] Taryn Young,[1] Paul Garner[4]

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ABSTRACT

Objectives To examine whether regional biomedical journals in Africa had policies on plagiarism and procedures to detect it; and to measure the extent of plagiarism in their original research articles and reviews.

Design Cross sectional survey.

Setting and participants We selected journals with an editor-in-chief in Africa, a publisher based in a low or middle income country and with author guidelines in English, and systematically searched the African Journals Online database. From each of the 100 journals identified, we randomly selected five original research articles or reviews published in 2016.

Outcomes For included journals, we examined the presence of plagiarism policies and whether they referred to text matching software. We submitted articles to Turnitin and measured the extent of plagiarism (copying of someone else's work) or redundancy (copying of one's own work) against a set of criteria we had developed and piloted.

Results Of the 100 journals, 26 had a policy on plagiarism and 16 referred to text matching software. Of 495 articles, 313 (63%; 95% CI 58 to 68) had evidence of plagiarism: 17% (83) had at least four linked copied or more than six individual copied sentences; 19% (96) had three to six copied sentences; and the remainder had one or two copied sentences. Plagiarism was more common in the introduction and discussion, and uncommon in the results.

Conclusion Plagiarism is common in biomedical research articles and reviews published in Africa. While wholesale plagiarism was uncommon, moderate text plagiarism was extensive. This could rapidly be eliminated if journal editors implemented screening strategies, including text matching software.

Strengths and limitations of this study

- ► This study is the first to systematically research plagiarism in African biomedical journals.
- ► We developed a method for reporting the extent of plagiarism beyond the overall similarity index.
- ► Our analysis was limited to text and excluded images and data.
- ► The high level of plagiarism we identified could easily be solved by screening all articles with text matching software and automatic rejection of articles showing plagiarism.
- ► We used an online source, the African Journals Online database, as the sampling frame for our study.

INTRODUCTION

Plagiarism is a serious form of research misconduct when authors copy text, ideas or (text recycling), to publishing parts of the same study in more than one paper (salami slicing) and republishing entire papers (duplicate publication), and is also considered poor practice.[5 6]

The availability of material on the internet facilitates mosaic writing and plagiarism, but the widespread availability of text matching software has improved detection so there is now more awareness of research integrity and research misconduct, including plagiarism. Policies are clearly available through the Committee on Publication Ethics (COPE), encouraging journal editors to screen submitted manuscripts for plagiarism.[7] Publishing systems and standards have advanced rapidly with online publishing in a global world, and there are some cooperative programmes between the large and local players to help local players keep up with advances. An example of this is the

Authorship issues in African academic institutions

- Research growth towards intensification
- Pressure to publish (or perish)
  - Performance appraisal requirements
  - Contract renewals
  - Advancement and Promotion criteria
- Publications are the currency for academic success
- Authorship issues not being discussed openly.
- Several disputes and misunderstandings related to authorship arising involving fellow academics or students and their supervisors.

Questions for this session

- Who should be included in a paper as an author?
- Who should not be included in a paper as an author?
- Who should be acknowledged?
- How can authorship disputes be minimized?
- What constitutes publication misconduct?
- What constitutes unacceptable practice in publishing?
- How can we promote responsible authorship within our institutions?

A disclaimer .....

- Publication practices vary according to discipline
- Rules of authorship are not black and white
- Will use cases from my experience to facilitate discussions.

Authorship controversies

- How many of us have been involved in, or close to, a controversy involving authorship?

Authorship and Research Integrity

- Publications serve many purposes:
  - Exchange of information
  - Documentation of being first with new ideas
  - Evidence of productive use of research funds
  - Record by which researchers are judged
- All these lead to significant pressure to publish
- May cause disputes among members of research team
- Journals have policies for authors
- What are the authorship issues in the real world?

Should the following persons be listed as authors?

- A technician who completes assigned tasks
- The Principal investigator in the laboratory that provided the specimens.
- The Principal investigator whose laboratory you visited to learn an important technique you used in the research.
- Your colleague who provided a helpful critical reading of the manuscript?
- Your department head or Head of the laboratory?
- The animal house attendant who provided the rabbits?

Animal House Attendant Conversation

- ***Lab Chief*** *:'In this paper where you describe experiments on five rabbits, you have nine authors. ' '*
- ***Researcher****: Yes Sir. This is because each of them helped me in the conduct of my experiments.'*
- ***Lab Chief*** *:'What is the animal house attendant doing on your scientific paper? The fellow cannot even read English. ' '*
- ***Researcher*** *: Sir, he got the rabbits for me and helped me in the animal experiments. '*
- ***Lab Chief*** *:'But that is his job. And why you put my name as a co-author with the animal house attendant? '*
- ***Researcher :*** *'You allowed me to carry out this research project.'*

http://www.issuesinmedicalethics.org/043mi078.html

Guidelines for Publication

- Widely cited guidelines written by the International Committee of Medical Journal Editors (ICMJE).
- Also known as the Vancouver Group.
- www.icmje.org
- Group that established publication guidelines for medical journals – More than 500 editors.
- Uniform Requirements provide good rules of thumb (or required rules) for understanding authorship.
- ICMJE Guidelines are an attempt to set a higher standard.

ICMJE Authorship Criteria

- "**Authorship** credit should be based on:
  - substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data;
  - drafting the article or revising it critically for important intellectual content; and
  - final approval of the version to be published.
- Authors should meet conditions 1, 2, and 3."
- Do we have any problems with this?

International Committee of Medical Journal Editors

Criteria for Authorship

Authors should:

- Make a substantial contribution to conception and design, acquisition of data, or analysis and interpretation of data
- Write draft of the article or revise it critically for important intellectual content
- Provide final approval of the version to be published
- Agree to be named as author

- Many journals go through the ritual of obtaining signatures on the consent form from all the authors.

ICMJE Guidelines

All persons designated as authors should qualify for authorship, and *all those who qualify should be listed.*

- Each author should have participated sufficiently in the work to take public responsibility for appropriate portions of the content.
  - If there is a serious problem with the article what will you say?
  - Responsibility and Contribution - 2 sides of the coin:
- Each element of the article must have at least one author who did the work and takes responsibility.

ICMJE Author Guidelines-2

- Acquisition of funding, collection of data, or supervision of the research, alone, does not justify authorship.
- All contributors who do not meet the criteria for authorship should be listed in an acknowledgments section.
- The order of authorship on the byline should be a joint decision of the co-authors.
- Authors should be prepared to explain the order in which authors are listed.

Scenarios for discussion

Scenario 1- Timing of discussion

- You are a principal investigator with your first student who is within a couple years of graduating.
- When should you begin discussing your expectations regarding publications?
- What will be your expectations?

Scenario 2 – PhD Supervisor

- You were a supervisor to a PhD student who has just graduated.
- The student is not interested in publishing.
- You are under a lot of pressure to publish as you are due for promotion.
- You decide to go ahead with a publication anyway.
- Please comment.

Scenario 3 – co-supervisor

- You are a graduate student with a main and co-supervisor.
- The co-supervisor suggests writing of a manuscript wholly based on the dissertation.
- You and the co-supervisor prepare the manuscript and the main supervisor is too busy to provide inputs but gives the go ahead for submission of the manuscript. Manuscript is a summary of dissertation.
- What is your opinion on the inclusion of the main supervisor as an author and why?

Scenario 4 – Other people's contribution

- You have been working as a team in developing a research proposal.
- The proposal is not funded and you decide to abandon the idea.
- Prof X, one of the team members decides to write a paper which is partly based on the original proposal.
- She invites the other members to participate in the paper write up and they do not respond.
- How should Prof X proceed?

Scenario 5 – Student assignments

- As a lecturer you have given students some assignments.
- Some of the students write some very nice papers.
- After four years, you decide to publish these materials and list yourself as the sole author.

Scenario 6 – Providing research idea

- A supervisor for a Masters student, provided the topic for research, and supervised the student as he collected and analysed data and wrote the dissertation.
- The supervisor proceeds to publish a paper as the sole author.

Maintaining Fairness

- All persons designated as authors should qualify for authorship
- All persons who qualify for authorship should be designated as authors
- Different members of the team may make assumptions about their roles
- Consult on the criteria for authorship that suits the specific research taking into account the personal needs and aspirations of all concerned.
- Need to reach an explicit agreement based on discussions

No Basis for Authorship

- Acquisition of funding
- Collection of data
- Supervision of the research
- Senior people who may have contributed little to the research process, sometimes insist that their names appear as coauthors – Politics.
- **WARNING :**If, at a later date, the paper is found to have serious failures or errors, the reputation of **all** named authors could be seriously damaged.

Important questions to ask

- What do you gain by excluding someone who has contributed significantly?
- What do you gain by including someone who has contributed very little or nothing?

Order of Authors - Flexibility

- Order of authorship matters too!
- Selecting the first author involves cordial consultation and flexibility.
- In projects involving several persons, it is often feasible to plan for multiple but related papers so that each researcher has a chance to take the lead role.
- Otherwise, the first author must be the person who has taken the lead role in each of the five steps of the research process.

Order of authorship (2)

- Last author often the senior author in developed countries
- Submitting author
- Custom varies across disciplines and cultures (scientific and otherwise)
- Consider:
  - The contributions of each member
  - How important is the paper
  - Discuss order with co-authors

Encouraging young researchers

- Senior researchers can voluntarily back off from first authorship in order to give the up and coming a chance.
- This encourages the development of young professionals.
- Flexibility is important

Acknowledgements

- Contributors who do not meet criteria for authorship should be listed in acknowledgements section
  - Person providing technical help
  - Person providing writing assistance
  - Department Chair who provided only general support
- Readers may infer endorsement of the data and conclusions
- All persons should give written permission to be acknowledged

APA Ethical Practices Re: Authorship

- Take responsibility and credit only for work that a researcher actually performed or to which (s)he substantially contributed
- Appropriately acknowledge those who made minor contributions to research or written publication
- Mere possession of institutional position does not justify authorship eg Departmental chair

Student Authorship

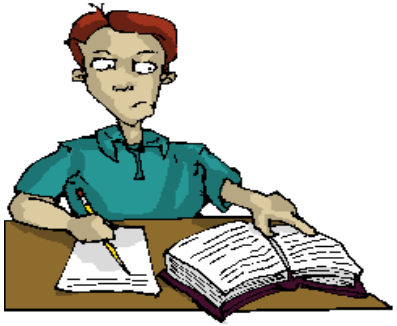
- Decide early on how authorship decisions will be made.
- Except under exceptional circumstances, student should be listed as first author on publication based on dissertation.
- Students should be given room to control publications from their dissertation.
- Students working on principal investigator's Project have to work with the investigator.

Misconduct relating to authorship

- Serious violations of journal guidelines and accepted norms
- Gift **authorship**
  - Including an author whose contribution to the work was far below **authorship** criterion
  - May be wanted and unwanted gift
- Ghost **authorship**
  - Similar to gift **authorship** but "expert“ or "consulting" scientists appear as lead authors to add credibility to the work
  - Those who did the work take no or minor credit
  - Practice sometimes used in industry

Plagiarism

- Intentional use of someone else's words, thoughts, or ideas, as though they are your own
- Also includes "self-plagiarism" – author using his/her own published material in another work without citation



How to Avoid Authorship Disputes

- Discuss expectations early on in the project
  - Avoid authorship disputes by discussing plans and criteria for authorship at the outset of collaboration
- Authorship contracts or agreements (prenups)
  - Accept an individual's request not to be an author
- Refer to professional society's ethical code
- Check specific journal requirements
- Check with others before making accusations

Solutions to authorship disputes

- Negotiation or Mediation: first, within the research group, then external to the group (especially advisory committees!)
- Department heads and deans may ultimately become involved.
- Ultimately institutional involvement – Ethics Committee
- The discussion should be focused on contribution and responsibility: who is willing to defend the data if there ever were allegations of misconduct?

Other Authorship Responsibilities

- Submit to only one journal at a time
- Disclose all potential conflicts of interest as required.
  - Placing work in context and accurate citations
  - Publishing negative results
  - Acknowledging sponsorship
  - Clinical Trial Registry Requirements
  - Preventing duplicative publication (self-plagiarism)
  - Preventing fragmentary publication
  - Protecting intellectual property rights

Errors and authorship

- **Honest Errors**
  - Unintentional, minor errors should be sent to the journal as "Erratum" by the corresponding author
  - If the errors compromise part of the conclusions, the authors should issue a "Correction"
- Inadvertent errors that invalidate the study should be sent in as a "retraction"
- Intentional falsification, fabrication or plagiarism should be investigated as research misconduct

RESEARCH INTEGRITY AND SCIENTIFIC MISCONDUCT

Meaning of integrity

Possession of firm principles.

The quality of possessing and steadfastly adhering to high moral principles or professional standards.

Research Integrity is required in four areas:

- Handling of data i.e. including acquisition, management and storage
- Communication/Publication of findings
- Correction of errors
- Mentoring and training of others

Definition of Research Integrity

Research integrity can be defined as the 'trustworthiness of research due to the soundness of its methods and the honesty and accuracy of its presentation

Draft Singapore Statement 2010

Research integrity broadly refers to the thoughtful and honest adherence to relevant ethical, disciplinary, and financial standards in the promotion, design, conduct, evaluation, and sharing of research.

Principles of Research Integrity

1. Honesty
2. Reliability
3. Use of robust research methodologies
4. Impartiality and independence
5. Open communication
6. Duty of care for participants
7. Fairness
8. High standards of mentorship and supervision
9. Awareness of responsibilities to society

Definition of Research Misconduct

The violation of the standard codes of scholarly conduct and ethical behavior in professional scientific research

http://en.wikipedia.org/wiki/Scientific_misconduct

...(research that) deviates from practices commonly accepted in the discipline or in the academic and research communities generally in proposing, performing, reviewing, or reporting research and creative activities

The Continuum from Research Integrity to Research Misconduct

Michigan State University

Common types of research misconduct

- **Falsification –** manipulating research materials, equipment, or processes, or changing or omitting research data or results, such that research is not accurately represented in the research record

- **Fabrication** – making up research data or results and recording or reporting them

- **Plagiarism** – the appropriation of another person's ideas, processes, results, or words without giving appropriate credit.

Question for discussion

- My student is about to submit a paper to a prestigious journal. It was his idea; should I be included as an author on the paper because I am a supervisor?
    a) Yes, always.
    b) If the supervisor wrote a significant part of the text.
    c) Yes, if the supervisor provided the funding.
    d) No.

Misconduct in Publications

- Deceptive authorship .
- Submission of papers with sections lifted from other papers without acknowledgements.
- Resubmission of previously published data with minor alterations and no acknowledgements.
- Lecturer submit papers with figures from students' dissertations without students permission.
- Lecturer writes paper with data derived from students' dissertation without citing student as co-author.

Suppression/non publication

- Studies could be suppressed or remain unpublished because:
  - the findings are perceived to undermine the commercial, political or other interests of the sponsoring agent
  - they fail to support the ideological goals, values, or belief of the researcher.
- Examples include:
  - the failure to publish studies if they demonstrate the harm of a new drug
  - or truthfully publishing the benefits of a treatment while omitting harmful side-effects.

IT'S A SLIPPERY SLOPE TO RESEARCH MISCONDUCT

It doesn't matter if you're an undergraduate researcher, a graduate student, a post-doc, or a principal investigator who is performing federally funded research, writing a research paper, or leading a research program; research integrity matters at every level.

Small lapses in judgment could lead to a slippery slope ending in research misconduct.

Be vigilant against these common lapses:

1. TAKING SHORTCUTS
Lack of care in experimentation that might impact reproducibility

2. CHEATING
Such as puffery, which is inflating your resume, can establish dangerous behavior patterns

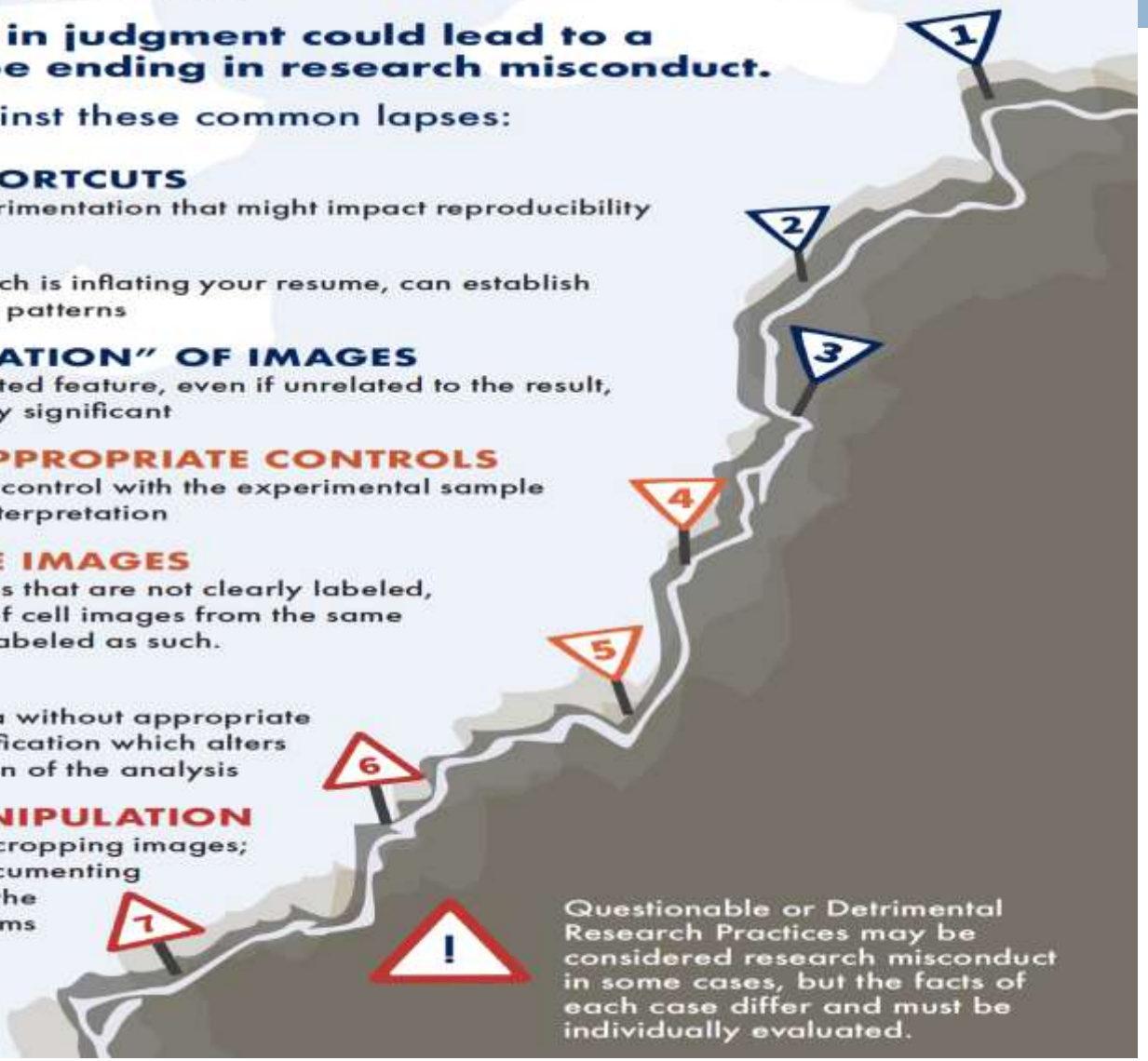
3. "BEAUTIFICATION" OF IMAGES
Removing an unwanted feature, even if unrelated to the result, could be scientifically significant

4. LACK OF APPROPRIATE CONTROLS
Failure to perform a control with the experimental sample could affect result interpretation

5. COMPOSITE IMAGES
Assemblies of images that are not clearly labeled, such as a montage of cell images from the same experiment but not labeled as such.

6. OUTLIERS
Omitting outlier data without appropriate pre-experiment justification which alters the overall conclusion of the analysis

7. IMAGE MANIPULATION
Splicing, cutting, or cropping images; without properly documenting changes, that alters the results or falsely claims a result which was not obtained.



Questionable or Detrimental Research Practices may be considered research misconduct in some cases, but the facts of each case differ and must be individually evaluated.

Scenarios for Discussion

- Ellie's supervisor sent her a manuscript to review for a journal. It was an interesting paper right in the area of Ellie's research and described experiments that she hadn't previously thought of doing. Ellie recommended that the manuscript was rejected and quickly set up the same experiments. Is this a problem?
- Peter was presenting a poster at a conference. Several people came up to discuss the poster with him and one person made some really useful suggestions about what he might do as a follow-up study. Would it be research misconduct if Peter was to use this person's ideas in his research?
- Evan has nearly finished his PhD. He has been working in collaboration with another PhD student and they have produced quite a lot of joint data. Can this data be used in Evan's PhD thesis?

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Scenario

- Sally has a complete draft of her thesis and is almost ready to submit. But her written English is very poor. She asks her supervisor for help in correcting her writing or whether they know of any copy editing services they can recommend. Is this appropriate/acceptable?

Consequences of misconduct

- **Fabrication & Falsification**
  - Undermine Scientific Integrity
  - Unjustified Career advancement
  - Removes Incentives for hard work
- **Plagiarism**
  - Misallocation of Credit
  - Integrity and character of scientist questioned
- Public perception that scientists are rogues
- Ruin career and reputation of scientists
- Undermine scientific progress

How to prevent misconduct

- Personal integrity
- Peer review
- Replication of studies (but large long term studies are difficult to reproduce; limited funds for duplicative studies)
- Formulation of guidelines, rules and recommendations for good scientific practice eg GPP, GCP, GLP
- Good role modeling
- Initial and continuing education of scientists
- Disclosure of potential conflicts of interests

How to Improve integrity in science

- Attention to the issues of integrity in research
- Promoting and evaluating research integrity
- Education in the responsible conduct of research
- Promulgation of and adherence to policies on research integrity
- Institutional self assessment
- Funding of research on scientific integrity

Summary

- Keep standards high with respect to assigning authorship
- If you are going to publish with others, get that straight before writing the first draft
- Exercise preventative ethics:
  - Anticipate potential authorship conflicts before they occur
  - Have authorship conversations early and often
- Authorship disputes damage professionalism and professional relationships.
- Conscience and your common sense can help.

Conclusion

- Research ethics and integrity practices make sure that research is conducted according to the highest standards of practice
- Ensuring minimal risk of adverse or harmful outcomes or consequences.
- As a result the research community and a wider public will have confidence in the outcomes of your research and the quality of your research output will be enhanced.

Appreciation