PUBLISHING ETHICS

for Researchers across Africa

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contents

overview

A frica has made notable progress in the production of scientific knowledge in the past two decades, with a total share of 7.6% of contributions to the world of science and one-third of all international publications in tropical medicine.

The 10 highest scientific-productive countries grew at different rates. South Africa tripled its production in the period 2001–18, Egypt grew by 5.4 times, Tunisia 6.4 times, Nigeria 4.7 times, Algeria eight times, Morocco twice, Kenya 3.6 times, Ethiopia 9.5 times, Uganda 6.5 times and Tanzania by five times. (*Source:* https://www.universityworldnews.com/)

However, as research output has been on the rise, so too has research misconduct (PLoS ONE 17(3): e0255334). Instances of research misconduct (mBio. 2016 Jun 7; 7(3): e00809-16), including but not limited to data fabrication, falsification and plagiarism are aplenty. In such a scenario, there is need for the African research community to focus on publishing ethics to be at par with international standards.

Research and innovation are the key sources of competitive advantage for a society and help in its overall economic, social and cultural well-being. Successful reporting and publication of research adds to the existing pool of knowledge and helps in developing future hypothesis and dialogue to benefit the community and society at large.

A sound research environment requires the active support of all stakeholders in the research lifecycle. Researchers who are at the heart of this ecosystem, shoulder a greater responsibility in the reporting of research. This booklet provides clear guidance on publishing ethics and principles of research integrity, with the aim to inform researchers about key considerations for reporting and publishing their research.

Key influencers like research institutes and universities will find the overview of the policy framework and guidelines helpful in creating a conducive environment for ethical research practice.

publishing
your research

Responsible communication of research depends upon the adherence to guidelines on authorship, acknowledgment, data integrity, appropriate permissions, and being mindful of potential conflicts of interest that may arise while reporting research.

AUTHORSHIP AND THE ROLE OF CORRESPONDING AUTHOR

Who is an author?

An author is someone who has made a significant contribution to the work reported in terms of research conception or design, or acquisition of data, or the analysis and interpretation of data.

Who is a co-author and what is the role of the corresponding author?

A co-author is someone who has made a significant contribution to an article, and so qualifies for authorship, and who equally shares the responsibility and accountability for the content of the article.

If more than one author writes an article, all co-authors need to agree on one person to take on the role of the corresponding author. This person

will handle all correspondence about the article between the journal and co-authors, and is also responsible for signing the publishing agreement on behalf of all the authors. They are responsible for ensuring that all the authors' contact details are correct and agree on the order in which their names will appear in the article. The corresponding author will also ensure that affiliations and competing interests declarations are correct.

What is considered as unethical authorship?

The following forms of authorship are considered unethical:

- **Gift (guest) authorship:** When someone is added to the list of authors when he/she has not been involved in the writing of the paper.
- **Ghost authorship:** When someone has been involved in writing the paper but is not included in the list of authors.
- **Authorship which has been sold/bought:** When someone has paid to be included, or when listed authors have received payment to include the names of people who have had no role in the work represented in the paper.

Who is responsible for the content of the paper?

All the authors named on the paper are equally accountable for the content of a manuscript or a published paper.

In addition to being accountable for parts of the work, any listed author should be able to identify which co-authors are responsible for a specific part of the work. Authors should also have confidence in the integrity of the contributions of their co-authors.

Top Tips for Authors

- Anyone who meets authorship criteria must be included, and the authorship list should be agreed early in the process to avoid disputes arising later on.
- All original data (including images) should be clearly labelled and stored. Authors should be prepared to share these with the journal they submit their manuscript to.
- Before submission, authors should check the journal homepage for any mandatory requirements for submission.
- All the declarations on ethical conduct of the study and any competing interests and funding must be disclosed during submission.
- All relevant sources and previous versions (for example, preprints) must be cited.
- Permissions for re-use of published material (for example, images from third party sources) should be obtained prior to submission.

Addition/Removal of authors post-submission

Any changes in authorship prior to or after publication must be agreed upon by all authors – including those authors being added or removed. It is the responsibility of the corresponding author to obtain confirmation from all co-authors and to provide evidence of consensus regarding the authorship changes to the journal. However, some journals may not accept authorship changes after the paper has been accepted.

DATA MANAGEMENT AND DATA SHARING

What are the factors to be taken care of when reporting research data?

Responsible data collection and reporting is vital to academic publishing. Researchers and authors need to be aware of effective data management practices and the norms for handling data in their

disciplines. It is important to ensure accuracy and trustworthiness of data to avoid infringement of any form.

The Office of Research Integrity in the USA recognises data management as an essential requirement for all stages of research in order to maintain data integrity. This includes, but is not limited to:

- Identifying appropriate sources and methodologies for collection of data (https://authorservices.taylorandfrancis.com/data-sharing-policies/);
- Obtaining relevant legal or ethical permissions for working with a set of data sources like human and animal subjects, and clearly reporting these and the methods within the manuscript. A few important links include:
  1. https://www.equator-network.org/ [EQUATOR; database for the all the reporting guidelines],
  2. https://www.consort-statement.org/ [CONSORT],
  3. https://www.strobe-statement.org/ [STROBE],
  4. https://arriveguidelines.org/ [ARRIVE],
  5. https://www.go-fair.org/fair-principles/
- Following good laboratory practices and experimental guidelines by adequately trained research staff;
- Using relevant technologies for recording and analysing the data; and
- Accurate reporting of the data.

What is data manipulation?

Data manipulation is the process in which research data is forged by deleting, adding or changing the actual collected data, and is presented unethically in a scholarly article. This can have serious implications as it may result in a distorted perception of a subject leading to incorrect theories being built and tested based on the manipulated data.

What constitutes inappropriate image manipulation?

Distortion of photograph(s) and images from experiments representing the research findings that could mislead the interpretation of results, constitutes inappropriate image manipulation. These manipulations might range from minor adjustments which may be acceptable (if the adjustments have been clearly stated) to severe alterations that aim to create or give a false interpretation of the results.

PERMISSIONS

Is permission needed to reuse any material from one's own published work?

Yes, a researcher will need to check who owns the copyright of the original work and, if the rights to the published work does not belong to the author, they must ask for permission from the rightsholder to reuse the material.

What should be considered when using third-party material in an article?

One must obtain the necessary written permission from the rightsholder to include material in their article that is owned and held in copyright by a third party, including—but not limited to—any proprietary text, illustration, table, or other material: data, audio, video, film stills, screenshots, musical notation, and any supplemental material.

COMPETING INTEREST

What is a competing interest?

A competing interest can occur when a researcher (or their employer or sponsor) has a financial, commercial, legal, or professional relationship

with other organisations, or with the people working with them, or any type of non-financial incentives that could influence the outcomes or interpretation of the research findings (https://authorservices. taylorandfrancis.com/editorial-policies/ competing-interest/).

It could be any situation which can potentially bias how the researcher conducts or reports their research, or how a researcher's work might be assessed by an institution or their peers.

For example, a case of a researcher working in the area of drug discovery, also owning stock or shares in a pharmaceutical company could be perceived as competing interest.

Full disclosure is required when you submit your work for publication. This information will be used to inform the editorial decisions and may even be published to assist readers in evaluating the article.

A few examples of competing interests include:

- Personal fees received by the authors as honoraria, royalties, consulting fees, lecture fees, or testimonies
- Patents held or pending by the authors, their institutions, funding organisations, or licensed to an entity, whether earning royalties or not
- Stock or share ownership
- Holding a position on the boards of industry bodies or private companies that might benefit, or be at a disadvantage financially or reputationally from the published findings
- Writing assistance or administrative support from a person or organisation that might benefit, or be at a disadvantage from the published findings
- Personal, political, religious, ideological, academic and intellectual competing interests which are perceived to be relevant to the published content

PLAGIARISM

According to the Committee on Publication Ethics (COPE), plagiarism is when somebody presents the work of others (data, words, or theories) as if they were their own and without proper attribution (https://authorservices.taylorandfrancis.com/editorial- policies/plagiarism/).

One should ensure the following when citing others' (or their own) previous works:

- Quoted text reproduced verbatim from another source must be marked with quotation marks.
- The source of the quotation must be attributed and referenced within the text and in the References section.
- Permission from the original publisher and rightsholder must be obtained when using previously published figures or tables.

How to avoid self-plagiarism / text-recycling?

Self-plagiarism, also referred to as text-recycling, is the excessive reuse of one's own previously published work, whether or not that has been cited. It creates redundancy and repetition in the academic literature and can skew meta-analyses if the same sets of data are published multiple times as "new" data.

Two forms of unethical self-plagiarism/text-recycling include:

- **Redundant/ duplicate publication**: is the publication of what is essentially the same paper in more than one journal, and without indication that the paper has been previously published elsewhere.
- **Salami slicing/publication**: is the segmentation of a large study which instead of being reported in a single paper, has been unnecessarily split into smaller studies, leading to excessive and misleading overlap between each paper.

More information on self-plagiarism/text-recycling are available at the following links:

1. https://textrecycling.org/resources/
2. https://textrecycling.org/files/2021/06/Understanding-Text-Recycling_A-Guide-for-Researchers-V.1.pdf

What to do if one's own work has been plagiarised and published?

In such a case the author should contact the Editor(s) of the Journal where the paper has been published and provide appropriate evidences indicating that the research data is that of the authors and has been plagiarised. The complaint will be investigated further by the Editor(s) of the Journal, in consultation with the Publishers.

PREDATORY JOURNALS AND PAPERMILLS

Authors should be aware of unethical publishing organisations and agents, and avoid using those services as it leads to dishonest publication and authorship, loss of funds and damage to the reputation of authors and their institutions. In addition, any submissions arising from such sources will be rejected (if detected pre-publication) or retracted (if detected after publication). Examples include papermills, which are organisations that sell papers and authorship spots, and predatory agents which dupe authors into believing they are submitting articles on their behalf to reputable journals.

For more information, please refer to the following links:

1. https://thinkchecksubmit.org/2022/05/24/fake-acceptance-letters-and- emails/
2. https://www.nature.com/articles/d41586-021-00733-5

UBUNTU RESEARCH ETHICS

The philosophy and practice of Ubuntu (also known as Unhu, Botho, Ubuthosi, Bumuntu, Bomoto, Gimuntu, Umunthu, Vumuntu or Umuntu) undergirds Africa's research ethics.

Ubuntu is a philosophy that shapes interaction of human beings with others and with the environment. In the practice of Ubuntu, humanity towards others is prioritised. Thus, Ubuntu values fairness and the welfare of others.

African Research Ethics and Malpractice Statement (AREMS) has been prepared by Africa Social Work Network (ASWNet). It focuses on eight basic Ubuntu Ethics in Research:

1. **Value for Family** (*unhuri*, 'familyhood'): Families are an integral part of African society. While research usually focuses on individuals, these individuals must be viewed as part of families. A full and trusted story usually involves the family.
2. **Respect for Community** (*ujamaa*, 'community hood'): Research should promote African 'community hood', uniting people, using local resources and compensating communities adequately. Local protocols should be respected, recognized and followed.
3. **Decolonizing**: For years research on languages, ethics, methods, philosophy, epistemology and ontologies have prioritized western knowledge. Present day research must prioritize African perspectives.
4. **Developmental and capacity building research**: Funders and researchers, including African governments must be seen to be promoting growth of African research capacity. This means strengthening the work of African researchers and research institutions. Knowledge transfer is a key element when we assess externally driven research.

5. **Sustainable research**: Research must build capacity of African researchers and institutions to research on their own and not to be dependent on external people perpetually.

6. **Justice:** Adequate recognition of co-researchers, communities, assistants, contributors, facilitators and guides. Compensations should be just.

7. **Value for life:** Every component of research must not result in harm, disease, impairment or loss of life.

8. **Protection of most vulnerable populations**: These include children, people with disability, people who are unable to read the language of the research, people with a mental illness, people with inadequate income, people from strong spiritual backgrounds, elderly people, people in rural communities, young women and poor people.

   Source: https://africasocialwork.net/african-independent-ethics-committee/

THE AFRICAN RESEARCH INTEGRITY NETWORK

The African Research Integrity Network (ARIN), a partnership to promote ethical research practices across the continent, was officially launched in June 2022 during the 7th World Conference on Research Integrity (WCRI), held in Cape Town, South Africa. The theme of the conference was 'Fostering Research Integrity in an Unequal World'.

The network aims to be a vehicle for African researchers, research leaders and research communities to have an active voice on the global stage. The association will be registered in different countries where nodes will be established.

ARIN currently has 68 members from 11 African countries including Botswana, Ghana, Nigeria, South Africa, Uganda and Zambia.

Website: https://africarinetwork.wixsite.com/website/about

KEY AFRICAN ORGANIZATIONS SUPPORTING RESEARCH ETHICS

Organization	Focus Area
H3Africa Consortium	The vision of H3Africa is to create and support a pan-continental network of laboratories that will be equipped to apply leading-edge research to the study of the complex interplay between environmental and genetic factors which determines disease susceptibility and drug responses in African populations. It follows High-Level Principles on Ethics, Governance and Resource Sharing.
African Independent Ethics Committee (AIEC)	It was started by African Social Work Network (ASWNet) to address a gap that exists currently in African research, that of inadequate ethics oversight. It provides ethics advice to African researchers, with a bias on social work and development.
Institutional Ethics Review Committees (IERCs)	IERCs are established in research institutions, universities, and hospitals in many countries across the continent. These committees are expected to review research proposals for ethical clearance. Their major responsibility is to protect the rights, safety and well-being of the research participants. The IERCs conduct regular meetings for reviewing the research proposals and give suggestions to the investigators to make their research ethical before approving them. Researchers should check with their local universities on the IERCs guidelines.
South African Research Ethics Training Initiative (SARETI)	SARETI is an Africa-based, multi-disciplinary consortium focusing on ethics and human rights in health research.
National Health Research Ethics Committee (NHREC), Nigeria	This is a national body advising the Nigerian Federal Ministry of Health, as well as State Ministries on ethical issues concerning research. The NHREC is responsible for setting norms and standards for the conduct of human and animal research.
Institutional Scientific and Ethics Review Committee (ISERC), Kenya	ISERC provides independent, competent and timely review of proposals intending to use human participants in research. The ISERC functions as per the National Commission for Science, Technology and Innovation (NACOSTI) approved Standard Operating Procedures (SoPs) and Terms of Reference (ToR).

*The list above is for reference and not a comprehensive list.

common ethical issues: faqs

Some of the common ethical issues that the authors need to be aware of when publishing their research are potential authorship disputes, issues of data and image manipulation, duplicate submissions, plagiarism and copyright infringement.

HOW TO REDUCE AUTHORSHIP-RELATED PROBLEMS?

Authorship gives credit and confers accountability for published work, so there are academic, social and financial implications. It is very important to make sure people who have contributed to a paper, are given credit as authors. And also that people who are recognised as authors, understand their responsibility and accountability for what is being published.

It is advised to raise the subject of authorship right at the beginning. You should start gathering views of all team members and if possible, discuss authorship in a face-to-face meeting, and record the consensus in writing.

Some journals have implemented CRediT taxonomy (https://credit. niso.org/) into their systems, a trend which is increasing across the industry to bring greater clarity regarding authorship contributions.

Contributor Roles

To ensure that all contributions to the study have been recognised and included, the academicians can use the Contributor Roles Taxonomy (CRediT). CrediT is high-level taxonomy, including 14 roles, that can be used to represent the roles typically played by contributors to scientific scholarly output. Using the CRediT system to list authors in publication would help bring greater transparency and clarity to role played by each author in the research.
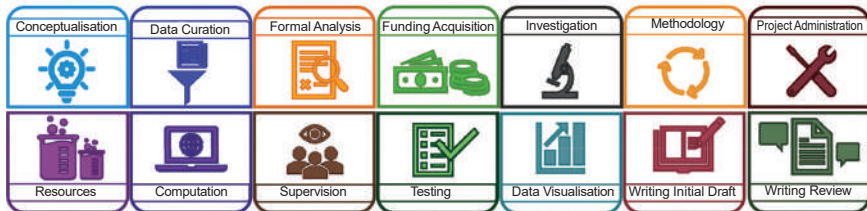
Source: www.casrai.org/credit

IS IT POSSIBLE TO SUBMIT A MANUSCRIPT TO TWO OR MORE JOURNALS SIMULTANEOUSLY?

An article must be submitted to just one journal at a time, so that it will be considered by one editorial team and one set of reviewers at any given point in time. If a researcher decides to send it to another journal, they can always withdraw their paper from the previous journal where they had submitted it earlier.

CAN A PAPER PRESENTED IN A CONFERENCE BE SUBMITTED TO A JOURNAL?

An author should first check if their paper was included in any conference proceedings. If so, the author will require permission from the publisher of the conference proceedings before publishing the paper as a journal article. Due attribution must be given when the paper is submitted to the journal.

CAN A THESIS CHAPTER BE PUBLISHED AS A PAPER?

The author(s) should obtain permission from the rightsowner if they want to include substantial parts of the published paper in their thesis. Smaller parts of the research paper included in the thesis should be accompanied with appropriate attributions.

WHAT IS A DATA RETENTION POLICY?

A data retention policy refers to the guidelines that helps organisations keep track of the duration for which information must be kept and how to dispose of the information when it's no longer required. The policy should also include the reasons for processing personal data.

WHAT IS A DATA REPOSITORY AND HOW TO CHOOSE ONE?

A data repository is a storage space where one can store the data sets linked to their research. While submitting to a particular journal, a researcher should find out the concerned journal's data sharing policy. They can then find a suitable data repository relevant to their discipline either by contacting their librarian or the institute. They can also search for one on FAIR sharing (https://fairsharing.org/) and re3data.org (https:// www.re3data.org/).

case studies in ethics and copyright

CASE 1

Professor Smith and Dr Jones designed a research study together and applied successfully for funding. The funding enables them to employ Pat as a research assistant. Pat carries out data collection and analyses the data. Pat then goes on to draft a paper for publication based on the results. Professor Smith and Dr Jones are impressed by Pat's work in analysing the data and drafting the paper. They decide that it does not need to be revised for any important intellectual content and, therefore submit it to a journal to be considered for publication.

Who should be named as authors on the manuscript?

Advice

Pat is the only true author of the paper. Professor Smith and Dr Jones did not contribute sufficiently to be named as authors.

Retrieved from: *Bruce Macfarlane (2017), 'The ethics of multiple authorship: power, performativity and the gift economy', Studies in Higher Education, 42:7, 1194–1210.*

CASE 2

During the review process for a manuscript submitted to our journal, one of the reviewers alerted us that the manuscript appeared to be the work of a collaborator (Dr X) who was not listed as an author on the paper. It became clear that the manuscript's corresponding author (Dr Y, affiliation A) was a postdoctoral researcher supervised by Dr X (previously at affiliation A, recently moved to affiliation B). A third researcher, Dr Z, was an author on the manuscript and at an institution in a different country.

We asked Dr X whether they were aware of the manuscript from their postdoctoral researcher, Dr Y. Dr X was not aware and stated that Dr Y

was funded solely by Dr X's grant, and that they were working on a similar manuscript for submission elsewhere. Dr X requested that we withdraw the paper.

We asked Dr Y to confirm whether the author list on the paper was complete and to provide us with funding details. Dr Y replied that there were no other authors, and that the work was completely self-funded.

- **Should the journal contact the author's institution (and/or the supervisor's institution) to investigate?**
- **Should the journal withdraw the manuscript from consideration at this stage, or wait for the results of an investigation?**

Advice

The editor updated the Forum that the journal had contacted the author's institution. It seems that the supervisor, Dr X, is in the process of moving to a new institution but is still at the same institution as the first author. The department chair said that they will look into the matter. The journal told Dr Y that they had contacted the institution and Dr Y asked to withdraw the paper. The journal withdrew the paper as requested but let the institution and author's postdoctoral advisor know that the paper had been withdrawn. The institution is continuing their investigation.

Author Y is stating that this work is under their own funding even though they put their affiliation as the institution where they are employed and supervised by Dr X. How should institutional affiliations be reported correctly or what constitutes a misrepresentation of an institutional affiliation? Perhaps there is some form of misrepresentation here. Editors should be able to validate whether affiliations that are reported by authors are real. They should be publicly verifiable. According to the American Psychological Association (APA), institutional affiliations should be included to the extent that the institutions have contributed substantially to the research being done or to the paper that is being

produced from that research. As Dr X stated they were working on a similar manuscript for submission elsewhere, withdrawal of the article seems a reasonable response by the journal.

Reference: https://publicationethics.org/case/authorship-dispute-during-review-process

CASE 3

In a nutshell, if someone has lost their raw data, workup data and laboratory books (so that in effect their data cannot be checked/queried/verified/substantiated) what would be the implications of submitting his/her results to a journal? I have a very clear view. I would not do it. However, others seem to think that if you cannot prove that the results are wrong, then they must be accepted on trust. I am hoping that you could point me towards some official ruling.

The peer review process would not be of any help in such a situation as it is unlikely that reviewers would ask to see the original calculations or even imagine a story of such careless custody of data.

Advice

The Forum was unanimous in the view that if an editor is made aware that the raw data are missing, they would not publish the paper. However, the Forum agreed that it is not practical to ask authors to submit their raw data, although some journals do ask for certain types of data to be deposited in a public database and some journals ask for original digital images. But if an editor asks an author for raw data and the author cannot produce the data, then the editor should not publish the paper. The Forum did however caution that you should ask the author how the data were lost, as there are some genuine cases of data being lost after a fire or flood.

Reference: https://publicationethics.org/case/lost-raw-data

CASE 4

An author wrote a letter to us for publication on the importance of doing research on a long established drug. He did not declare any competing interest, but we were later informed that he was conducting a trial of the drug funded by a pharmaceutical company. We approached him and asked him to declare his competing interest.

Have we done the right thing? Should we do more than simply ask him to declare his competing interest and publish that declaration in the journal?

Advice

The author did not think he had a competing interest. It was agreed that it was beneficial to publish statements of competing interest with the paper, letter, etc., otherwise authors might think this is an optional requirement.

Reference: https://publicationethics.org/case/undeclared-conflict-interest

CASE 5

We received an email from a whistleblower notifying us about possible plagiarism in two chapters published by us, both authored by the same two authors. The whistleblower accused the authors of substantial plagiarism.

In both chapters there were, indeed, certain unattributed parts of the text, although the majority was properly attributed. Some of the unattributed parts were written by the authors themselves, while some were taken from third parties. The whistleblower highlighted some properly cited parts of the text, as he claimed they were directly copied from other sources.

As a first step we contacted both authors for an explanation. The authors admitted their mistakes but also explained that they did not have any

malevolent intention, and that it was a simple oversight on their behalf. They explained that they were willing to correct (publish a correction of) their chapter.

We then contacted the editor of the book. In his opinion this was not a case of substantial plagiarism and suggested publishing a correction. The whistleblower was not satisfied with the opinion of the editor.

Is this misconduct serious enough to warrant a retraction, or would it be sufficient to publish a correction?

Advice

The Forum advised that a correction is probably appropriate in this case, as there does not seem to be any malicious intent or pattern of deceit.

The whistleblower should not be the main consideration—the journal's main concern should be to consider whether or not the literature needs to be corrected.

One of the main challenges in book publishing is the lack of established retraction/correction processes for books. It is not considered by book authors or editors as a standard process.

Reference: https://publicationethics.org/case/possible-plagiarism-1

Case studies for South Africa, Kenya, Nigeria and Ghana

The most common case types that the Publishing Ethics and Integrity Team encounters from these countries are as follows:

1. Plagiarism
2. Authorship disputes
3. Image integrity concerns
4. Lack of Ethical considerations/approvals

further readings

1. Adil E. Shamoo and David B. Resnik, 2015, *Responsible Conduct of Research*, 3/e, Oxford University Press.

2. Africa Social Work Network, *Ubuntu Research Ethics*. Link: https://africasocialwork.net/african-independent-ethics-committee/

3. Anna Robinson-Pant and Nidhi Singhal, 2016, *Researching Ethically across Cultures*, Routledge, p. 142.

4. Author Services, Taylor and Francis.
   Link: https://authorservices. taylorandfrancis.com/

5. Brian C. Martinson, Carol R. Thrush and A. Lauren Crain, 2014, 'Development and Validation of the Survey of Organisational Research Climate (SORC)', *Science and Engineering Ethics*, 19 (3), 813–34.

6. C.K. Gunsalus and Aaron D. Robinson, 2018, 'Nine pitfalls of research misconduct', *Nature*.

7. Committee on Publication Ethics: COPE, Promoting integrity research and its publication. Link: https://publicationethics.org/

8. CRediT, Consortia Advancing Standards in Research Administration Information (CASRAI). Link: https://www.casrai. org/credit.html

9. David Shaw and Priya Satalkar, 2018, 'Researchers' interpretations of research integrity: A qualitative study', *Accountability in Research*, 25 (2), 79–93.

10. Department of Science and Technology, Ethical Guidelines. Link: https://dst.gov.in/ethical-guidelines

11. H3Africa Consortium, High-Level Principles on Ethics, Governance and Resource Sharing.
    Link: https://h3africa.org/index.php/about/ethics-and-governance/

12. Henriikka Mustajoki and Arto Mustajoki, 2017, *A New Approach to Research Ethics*, Routledge, p. 236.

13. Image manipulation as a general practice, COPE Case Number: 14-03, Committee on Publishing Ethics. Link: https:// publicationethics.org/case/ image-manipulation-general-practice

14. Institutional Ethics Review Committees.
    Link: https://www.nacosti.go.ke/accreditation-of-institutional-ethics-review-committees-iercs/

15. Joan E. Sieber, 2012, 'Witnesses to Research Wrongdoing', *Journal of Empirical Research on Human Research Ethics*, 7 (5).

16. Kerry Shephard, Tiffany Trotman, Mary Furnari and Erika Löfström, 2015, 'Teaching research integrity in higher education: Policy and strategy', *Journal of Higher Education Policy and Management*, 37 (6), 615–32.

17. Magne Nylenna and Richard Horton, 2006, 'Research misconduct: learning the lessons', *The Lancet*, 368 (9550), pp. 1856.

18. Phil Davis, 2016, 'Image Manipulation: Cleaning Up the Scholarly Record', Scholarly Kitchen.
Link: https://scholarlykitchen.sspnet. org/2016/05/02/ image-manipulation-cleaning-up-the-scholarly-record/

19. Pravin Bolshete, 2018, 'Analysis of thirteen predatory publishers: A trap for eager- to-publish researchers', *Current Medical Research and Opinion*, 3 (1), 157–62.

20. 'Research Ethics: Context and Practice', 2015, in Julia Scott-Jones (ed.), *Fundamentals of Applied Research Series*, Sage Publishing.

21. The African Research Integrity Network website.
Link: https://africarinetwork.wixsite.com/website/about

Open Research
Africa

Open Research Africa is an open research publishing Platform for African researchers to publish their findings. Our mission is to **share quality research from Africa** with the world and enable **rapid sharing, discovery, use, and reuse of African research** to the benefit of all.

Find out more at: openresearchafrica.org
Email us at: partnerships@f1000.com