Ethics in Science: Background and Resources on Publication Ethics

Ethics in Science at its broadest level encompasses research ethics, medical ethics, publication ethics, conflicts of interest, ethical responsibilities as educator, plus many other areas.

The IFCC Ethics Task Force has prepared this background paper to bring together a set of resources on publication ethics for use in the field of laboratory medicine. The effort is a part of the Ethics Task Force work which is initially focussing on (1) the teaching of research ethics, (2) publication ethics guidelines, and (3) conflict-of-interest guidelines.

Background/resources in Publication Ethics

OUTLINE:

Research Ethics:
- Human Experimentation
- Animal Experimentation
- Data collection

Publication Ethics:
- Author aspects
  - Authorship
  - Plagiarism
  - Duplicate Publishing
  - Publishing translations of previous work
  - Image manipulation
  - Conflict of Interest
- Referee aspects
  - Plagiarism, duplicate publishing or other ethical violations
  - Conflict of Interest
- Readers aspects
  - Plagiarism, duplicate publishing or other ethical violations
- Editor aspects
  - Plagiarism, duplicate publishing or other ethical violations responsibility
  - Conflict of Interest

Conflict of Interest in general
- Areas not covered by Research Ethics or Publication Ethics, e.g.
- Officer of scientific society or association

Responsibility as Educator

Research Ethics

Research Ethics involves the application of fundamental ethical principles to a variety of topics involving scientific research, data collection, publication, and conduct.

Ethics in experimentation

Experiments on humans must follow applicable ethics standards, e.g. the most recent version of the Helsinki Declaration. All aspects of informed consent and privacy and confidentiality of subjects must be followed, and declared on submission of a manuscript involving those subjects.

Experiments on animals must follow relevant (local, national, international) animal experimentation guidelines. In the USA, the Office of Laboratory Animal Welfare is the controlling body, in the European Union it is the European Commission for the Environment, but in many countries regulation is at a local level, based on national guidelines
http://en.wikipedia.org/wiki/Animal_testing_regulations

Approval of your institute's ethics committee is normally required before any research experimentation takes place with human or animal subjects.

Sometimes local ethics regulations are below internationally accepted standards – something of relevance when writing a manuscript for publication. The International Committee of Medical Journal Editors is specific on this point.

Ethics in Publishing

Publishing ethics can be defined as the ethical behaviour in writing and submitting a scientific manuscript for publication, typically in a peer-reviewed journal.

The Committee on Publication Ethics (COPE) is an international voluntary organisation that coordinates between most publishers and their editors the 'even-handed' approach to defining and regulating procedures for handling breaches of publishing ethics.

The World Association of Medical Editors (WAME) has also published several documents related to Publication Ethics Policies for Medical Journals.

Scientific ethics have evolved over centuries and are commonly held throughout the world. They are not considered to have national variants or characteristics – there is a single ethical standard for science.

Authors and their ethical responsibility

Writing a paper:

Authorship status in written and submitted manuscripts:

The International Committee of Medical Journal Editors is specific on who is entitled be an author and who is not. "Authorship credit should be based on 1) substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data; 2) drafting the article or revising it critically for important intellectual content; and 3) final approval of the version to be published. Authors should meet conditions 1, 2, and 3." Any contributors to a paper who do not fit all three of these criteria should be listed in an acknowledgments section of the paper.

General principles on Authorship:

Order of Authors: The First Author conducts and/or supervises the data generation and analysis and the proper presentation and interpretation of the results. He/she pulls the paper together and submits it to the journal, once the content is approved by all authors.
The Corresponding Author is either the first author, or a senior author from the institution, who has been involved with all aspects of the paper, and meets all three conditions above of being an author. The corresponding author's role is important to answer any questions in future years from other researchers worldwide, so this is particularly relevant when the first author is a PhD student or postdoc, who may move to another institution soon.

It is important not to add authors who did not contribute significantly and it is equally important to include all authors who do meet the author criteria.

Use of other people's material:

Acceptable: The system of citing other people's ideas or results, as references in your paper is the normal process. Quotations may also be used, if also clearly marked and cited. Reuse of tables and/or figures needs permission of both author and publisher, and should be suitably mentioned in the table/figure legend.

Unacceptable: It is not acceptable to copy other people's work without citation. This includes not copying lines of text from a reference without using quotation marks. Do not use figures or tables without permission. This is called plagiarism and is seen as unacceptable unethical behaviour by researchers worldwide. Plagiarism, derived from the Latin word 'to kidnap', is taking the intellectual property of someone else and passing it off as one's own. There are several software systems and groups busy protecting science from plagiarism and other ethical abuses (*)

Use of your earlier material:

Acceptable: Mention relevant previous work briefly and give citations. If earlier published figures or table need to be reproduced, and not just cited, for the clarity of the reader's understanding, get permission from the publisher of the first article and amend the caption accordingly.

Unacceptable: Do not mention previous work without a citation. Do not take blocks of text and reuse them in your next paper. Readers rightfully have the expectation of originality. To reuse material previously published by yourself without citations is called "duplicate publishing", "self-plagiarism", "redundant publication", or "recycling fraud".

Publishing previous work in a new language:

If you have published a major article in the past in a language other than English and it has not been noticed by English scientists, it is possible to translate and republish this in one specific manner:

Firstly, the Editor in Chief of the journal you want to submit your article to has to be asked if you may send in a translation of a previously published paper. Often she/he agrees, if there are compelling reasons. Secondly, the copyright holder (normally the publishing house) of the first article (the first journal) has to be asked for their permission to allow you to publish a translation of your paper – typically a quick process. Then your paper has to be faithfully translated without adding new data, and

referencing the original paper as the first reference. It is also normal to add a Footnote to the first page explaining that this article has been previously published in another language and is being provided in English as an aid to other researchers in your field.

If you do not do these steps, people who can read both languages will complain to the new journal that this is Duplicate Publication or Self Plagiarism and therefore not allowed.

Acceptable and Unacceptable Graphics Editing:

For clarity, figures may be adjusted to better see the item being discussed as long as such changes do not obscure or eliminate information present in the original image. However any changes (brightness, contract, colour balance, etc.) must be made overall, and mentioned in the figure caption. An original image file must be retained in case it is required by the peer-review process. Do not remove or move anything in an image, or clean up an image.

Conflict of Interest (CoI):

Any reported results and discussion in a paper, which may have subsequent benefit to any of the authors is a possible conflict of interest and the paper may be suspect. Potential conflicts of interest related to individual authors' commitments have to be dealt with by being acknowledged on submission of a paper, such that the editor and referees can take this potential conflict of interest into consideration whilst peer-reviewing any submitted paper. For example, many journals or conferences in the clinical and medical area use the World Association of Medical Editors guidelines to declare and manage CoIs. The general standard for judging whether a conflict of interest situation exists is whether a reasonable person with knowledge of all the relevant facts would have reason to question your impartiality in the matter. Many publishing houses have specific statements in their manuscript submission guidelines detailing Conflict of Interest.

Corrections:

Should an author discover after publication that the original work which resulted in this publication has been found to be unsound, then it is expected by the scientific community that the author, in the agreement of the co-authors, contacts the journal editor and asks for the paper to be withdrawn. This is the normal self-correcting process of science, and papers ‘withdrawn by request of the author’ are seen as outside the publishing ethics process.

Publication Ethics submitting a paper:

It is unethical to submit your paper to more than one journal in parallel. Each submission of the same paper, or the same research results and discussion, should be sequential. Should you choose not to wait for the final decision on a paper, for whatever reason, you may withdraw your paper and submit it to another journal at that point – not before.

Each co-author must be in agreement with the entire contents of the paper at initial submission stage and all subsequent submissions of revised versions of the paper. Some journals ask for signed declarations from all named authors.

No factual changes or additions to accepted manuscripts at author-proof stage are allowed without first discussing with the journal editor. Only typographical and other minor errors can be corrected at this stage, in this way.

Referees/reviewers and their ethical responsibility:

It is reasonable for an author to expect referees to peer-review their work impartially and confidentially. For most journals, the peer review process is single-blind, meaning that the referee's identity is not revealed to the author, or the scientific community at large. Some scientific fields do publish the identity of the referees, along with their reasoned comments, by prior agreement.

Referees must not contact the author directly, but must make any comments about the manuscript to the author via the review process and the handling editor of the journal.

If a referee thinks that he/she might have a conflict of interest in peer-reviewing a paper, the manuscript review should be refused, and the journal editor notified.

Once the peer-review has taken place and the report sent in, the electronic file and any printouts of the submitted paper should be destroyed by the referee to maintain confidentiality. Any scientific information obtained by the referee in the peer-review process is confidential and cannot be used until the paper is published. The published version of the article is the only valid version – all draft/peer-review versions having being deleted.

Readers' role relating to publications with unethical content:

If whilst reading various articles in a journal, a suspected breach of ethics is found, the reader should draw this to the attention of the journal's editor, with specific suspicions or comments, and if possible, supportive evidence, e.g. a copy of the original article that was plagiarised etc. The journal editor should acknowledge this, and then instigate a suitable investigation, and wherever possible, advise the reader of the final outcome.

Journal Editors and their ethical responsibility:

The Committee on Publication Ethics (COPE) sums up the ethical responsibility of Editors in a clear way (PDF). In short: "Editors should be accountable for everything published in their journals. This means the editors should: strive to meet the needs of readers and authors; strive to constantly improve their journal; have processes in place to assure the quality of the material they publish; champion freedom of expression; maintain the integrity of the academic record; preclude business needs from compromising intellectual and ethical standards; always be willing to publish corrections, clarifications, retractions and apologies when needed." The International Committee of Medical Journal Editors has similar views.

It is journal editors that normally have the responsibility of following up complaints, ethical or otherwise, about specific articles published in that journal. Some journals and societies have a special 'ethics' expert or committee to help assess publishing or other ethical problems that might arise linked to a journal. Papers can be retracted by the Editor following a breach of ethics by the author(s), or Expressions of Concern can be published in the scientific pages of the journal, in print and online, such that they are covered by indexing services and search engines. Journal editors are often guided by COPE flowcharts, briefing documents, and publishing house sample letters to authors, for example.

Editors and potential conflicts of interest: Editors should avoid selecting external peer reviewers with obvious potential conflicts of interest - for example, those who work in the same department or institution as any of the authors. Editors who make final decisions about manuscripts must have no personal, professional, or financial involvement in any of the issues they might judge.

The IFCC Ethics Task Force recommends that all international and national journal editors in the field of clinical chemistry and laboratory medicine should either consider joining COPE, for a nominal annual fee, or to use the COPE Guidelines and Best Practice documents in their dealings with publishing ethics problems within their journal.

Publishers/Societies and their ethical responsibility:

Publishers, and Societies that own and publish journals, have a responsibility to the scientific record to ensure that the journals they publish are as free of publishing ethics violations as they can be. They should respect the privacy and rights of researchers, protect the intellectual property and copyright of the authors, and foster the editorial independence of the publishing process without interference by themselves or any other party.

Publishers, and Societies that own and publish journals, should work with journal editors to: Set journal policies appropriately and aim to meet those policies, particularly with respect to: Editorial independence; Research ethics, including confidentiality, consent, and the special requirements for human and animal research; Authorship; Transparency and integrity (for example, conflicts of interest, research funding, reporting standards; Peer review and the role of the editorial team beyond that of the journal editor; Appeals and complaints; Maintain the integrity of the academic record; Assist the parties (for example, institutions, grant funders, governing bodies) responsible for the investigation of suspected research and publication misconduct and, where possible, facilitate in the resolution of these cases; Publish corrections, clarifications, and retractions where needed.

The IFCC Ethics Task Force recommends that all publishers of international and national journals in the field of clinical chemistry and laboratory medicine should either consider joining COPE, for a nominal annual fee, or with the journal editor, to together use the COPE Guidelines and Best Practice documents in their dealings with publishing ethics problems within their journal.

If you are a victim of unethical behaviour?

If you find that your paper has been plagiarised, always contact the Editor of the journal the other article appeared in, where possible sending a copy of your article for comparison. Also contact the Publisher of the journal your article appeared in – they often hold copyright and so can help you.

Retractions of plagiarising papers do take place, sometimes years later, when the ethical breach is eventually discovered or confirmed.

If you think that you are, or should be, a co-author, and were either not consulted or not listed on a paper, contact the Editor of the journal in which the paper appeared as soon as possible. Papers get corrected by publishing Corrigenda or Errata or similar to reflect such changes.

If you think that the journal editor has not handled your complaint in a just manner, it is possible to complain to the Committee on Publication Ethics (COPE) or to the World Association of Medical Editors (WAME), as many journal editors and publishers are members and there are Codes of Practice and a Complaints procedure in place (PDF).

(*)Plagiarism detection tools and groups:

Most publishers now use CrossCheck, based on iThenticate, which checks suspect submitted manuscripts against millions of previously published papers, checking for plagiarised text.

The Deja Vu database of "highly similar" citations, is a computer generated list of suspect papers, which need scientific evaluation of the 'suspect' papers with care as many of these are not duplicate or plagiarised.

There are also individual researchers, blogs, and groups who are active in finding publishing ethics abuses, and tracking down and monitoring how effective authorities and publishers are at dealing with plagiarism.

The Committee on Publication Ethics have produced flowcharts, best practice documents, and advice for institutes and publishers – these are frequently updated.

In the US, the Office of Research Integrity (ORI) is responsible for investigating all forms of scientific fraud, including plagiarism, data fabrication, etc. by researchers receiving any US funding.

Ethics relating to Grant Applications:

In submitting a grant application there is a requirement on researchers to consider the ethical implications of their proposed research. Profession grant writers also have strict ethical codes

Conflict of Interest – other areas:

Apart from conflict of interest as an author, referee, or editor there are other areas where a potential Conflict of Interest may exist, namely as an officer of a scientific society or association. The IFCC Executive Board has recognized the need for ethical guidelines for officers and committee members of IFCC. These ethical guidelines and conflict of interest policies for association officers may well be suitable for adoption by national and regional societies and associations within or outside the area of clinical chemistry and laboratory medicine.

Responsibility as an Educator:

Teaching ethical publishing behaviour and sharing resources.

Speaking at conferences, maintaining the same high level of ethical behaviour as a researcher and author.

Embedded resources (Hypertext links within the document (in sequence), for use in a printed version of this webpage):

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

http://www.wma.net/en/30publications/10policies/b3/index.html

http://grants.nih.gov/grants/olaw/olaw.htm

http://ec.europa.eu/environment/chemicals/lab_animals/home_en.htm

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

http://www.icmje.org/ethical_6protection.html

http://www.elsevier.com/wps/find/intro.cws_home/publishing

http://publicationethics.org/

http://www.wame.org/resources/ethics-resources/publication-ethics-policies-for-medical-journals/

http://www.icmje.org/ethical_1author.html

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

http://research.ithenticate.com/citation_help/types_of_plagiarism.html

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2679117/?tool=pmcentrez

http://authorservices.wiley.com/bauthor/faqs_copyright.asp#1.14

http://www.icmje.org/ethical_4conflicts.html

http://www.wame.org/conflict-of-interest-in-peer-reviewed-medical-journals

http://science.energy.gov/hep/funding-opportunities/peer-merit-review-policies/conflict-of-interest/

http://www.elsevier.com/wps/find/authorsview.authors/rights?tab=1

http://quotationsbook.com/quote/13704/

http://publicationethics.org/files/Code_of_conduct_for_journal_editors_Mar11.pdf

http://www.icmje.org/ethical_2editor.html

http://www.icmje.org/publishing_2corrections.html

http://publicationethics.org/resources/flowcharts

http://www.blackwellpublishing.com/publicationethics/#_Toc149460083

http://www.elsevier.com/wps/find/editorshome.editors/PERK_letters

http://www.icmje.org/ethical_4conflicts.html

http://publicationethics.org/join-cope

http://publicationethics.org/resources/code-conduct

http://publicationethics.org/join-cope

http://www.icmje.org/ethical_1author.html

http://publicationethics.org/resources/code-conduct

http://publicationethics.org/files/u2/08_Editor_complaint.pdf

http://www.crossref.org/crosscheck/crosscheck_for_researchers.html

http://spore.vbi.vt.edu/dejavu/

http://www.clinchem.org/content/54/5/777.full

http://copy-shake-paste.blogspot.com/

http://retractionwatch.wordpress.com/

http://www.plagiarismtoday.com/

http://publicationethics.org/resources/flowcharts

http://ori.hhs.gov/

http://www.nottingham.ac.uk/cas/researchsupport/ethics.aspx

http://www.agwa.us/ethics

Resources

In addition to the hyperlinked resource material above, there are numerous resources on these topics – a selection of these follow:

CODEX rules and guidelines for research: Publishing research results - http://codex.vr.se/en/etik2.shtml

Legal Guide for Editors Concerning Ethics Issues – http://www.elsevier.com/wps/find/editorshome.editors/ethicshelpdesk

Plagiarism Tools – http://www.shambles.net/pages/staff/ptools/

Taking on the Cheats – a Nature Special Report - http://www.nature.com/nature/journal/v435/n7040/full/435258a.html

Best Practice Guidelines on Publication Ethics: a Publisher's Perspective - http://onlinelibrary.wiley.com/doi/10.1111/j.1742-1241.2006.01230.x/abstract

Digital doctoring: how to tell the real from the fake - http://onlinelibrary.wiley.com/doi/10.1111/j.1740-9713.2006.00197.x/abstract

Ethics and Laboratory Medicine - Clinical Chemistry - http://www.clinchem.org/content/36/8/1404.2.full.pdf

AACC Ethics Guidelines - http://www.aacc.org/members/Pages/ethics.aspx#

The Royal College of Pathologists on the NHS Research Ethics Committees - http://www.rcpath.org/resources/pdf/corecconsultationresponse-apr06.pdf

European EC4/EFCC Code of Conduct – http://efcclm.eu/profession/code-of-conduct

Council of Science Editors White Paper on Promoting Integrity in Scientific Journal Publications - http://www.councilscienceeditors.org/i4a/pages/index.cfm?pageid=3313

Latin American Guide to Implementing Ethics in Health Laboratories (in Spanish) – http://www.paho.org/spanish/ad/ths/ev/LAB_GUIA_impl_codigo_etica.pdf

European Association of Science Editors (EASE) Science Editors' Handbook - http://www.ease.org.uk/handbook/index.shtml

World Medical Association Fundamentals of Medical Ethics Online Course - http://www.wma.net/en/70education/10onlinecourses/30ethics/index.html

Australasian Association of Clinical Biochemists (AACB) Code of Ethics - http://www.aacb.asn.au/admin/?getfile=2769

WHO: Research Ethics - http://www.who.int/rpc/research_ethics/en/

WHO: Publishing Ethics - http://www.emro.who.int/smj/pdf/executivesummary.pdf

American Chemical Society Ethical Guidelines Publication of Chemical Research - http://pubs.acs.org/userimages/ContentEditor/1218054468605/ethics.pdf

This is a work-in-progress. It would be appreciated if any reader with more relevant or recent resources or links could pass these on, via the IFCC Office, to the IFCC Ethics Task Force, for possible inclusion in this web page. It is anticipated to update this web page regularly, and at least, annually.

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Ethics Task Force