



Academic Honesty

in Publication and Presentation

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Academic Honesty in Publication and Presentation

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Academic honesty is an imperative on many ethical grounds. Within an academic medical center, however, the *Responsible Conduct of Research*, or RCR, is a cornerstone not only of individual academic honesty, but also of institutional integrity. RCR includes contributions, usually collaborative, across the life of a study, from its design and implementation to the accurate recording of findings and careful analysis of data by accepted methods. These analyzed outcomes must be reported truthfully in well-crafted publications and presentations that carefully designate the roles of each contributor. However, RCR makes further demands, ones not confined to a meticulous attention to citation and appropriate attribution of the work of others. These additional norms are convergent with more commonly acknowledged ethical standards of health care research, such as protection of human subjects and appropriate care and



utilization of experimental animals; they extend to the obligation to be a responsible steward of research practices and of the bioscience literature.

This following pages address six key concepts to aid bioscience authors in developing technically sound and ethically written research publications and presentations.

The concepts covered are:

- authorship
- sources
- plagiarism
- citations
- error disclosure
- copyright

The ethical obligations surrounding these concepts are presented in the context of formal publications, such as journal articles, but apply equally to abstracts, oral presentations, and posters.

References for the sources used for the production of this document may be found in the last section. Comments and questions are welcome at cmbh@umc.edu.

Authorship

Determining whose name should appear on a published work is a critically important component of scientific integrity. Only the names of those individuals who had legitimate intellectual input to the study or project should appear as authors.

Research by definition is working at the limits of what is known; it is always attended by controversy. A study author must be able to provide an *overarching* understanding of study aims, design, choice of methodology, and outcomes. When other investigators argue the merits of competing approaches, a study author should be able to speak with authority on at least one defining aspect of the study.

The contributions of a study team member who assists in a study, but cannot intellectually defend *at least one* critical aspect of that study can and should be recognized in the acknowledgments section of the report rather than as a co-author. The proper attribution of authorship in a teaching or training environment is especially nuanced, whereas study participants may have dual roles as learners (students, residents, or post-docs) and as employees.

- In health care, clinical research, public health and similar forums, what is considered authorship has many components.
- To be an author in these professional arenas requires the full capacity to explain *and to intellectually defend* key aspects of the reported work.

Authorship

The collection of research data, or even contributing to the drafting of documents under direct supervision, for example, may in some circumstances merit acknowledgement rather than authorship.

Expectations with respect to authorship should be discussed early with study leadership.

These discussions can provide opportunities to clarify the intellectual contributions one will be expected to make in order to earn authorship during the conduct of the project. Senior investigators are judged on the quality and achievements of their research team members, including how well they ensure that new investigators are prepared to field questions. It is to their benefit to name young investigators as authors, so long as these authors can perform well and intellectually defend some key aspect of the study.

Common designations that represent types of intellectual engagement warranting authorship include:

- Conceived study
- Designed trial
- Obtained research funding
- Collected or managed data
- Analyzed data
- Gave statistical advice for study design
- Drafted or revised manuscript

The presence of intellectual engagement is critical in these tasks. For example, consider the bullet “Collected or managed data.” Here, the *abstracting of data from a chart* may merit authorship, while the simple *extraction* of lab values may not.

- To collect data and draft documents under careful supervision may merit acknowledgement rather than authorship.
- Acknowledgement signifies important participation.
- An acknowledged party is not responsible for content or defense of intellectual merit if challenges arise.

Authorship

Note that, at the time of submission, JAMA requires every co-author to "... indicate general and specific contributions ..." and

- to certify the originality and validity of the reported work, including cooperation with access to data,
- to acknowledge final approval of the manuscript as submitted,
- to confirm participation in the work *sufficient to take public responsibility for part of or the whole of its content*, and
- to attest to one specific contribution within each of three delineated categories in order to merit inclusion as an author.

Falsification of any of these terms is sufficient cause for a citation of scientific misconduct.

1. Authorship Responsibility, Criteria, and Contributions. Each author should meet all criteria below (A, B, C, and D) and should indicate general and specific contributions by reading criteria A, B, C, and D and checking the appropriate boxes.

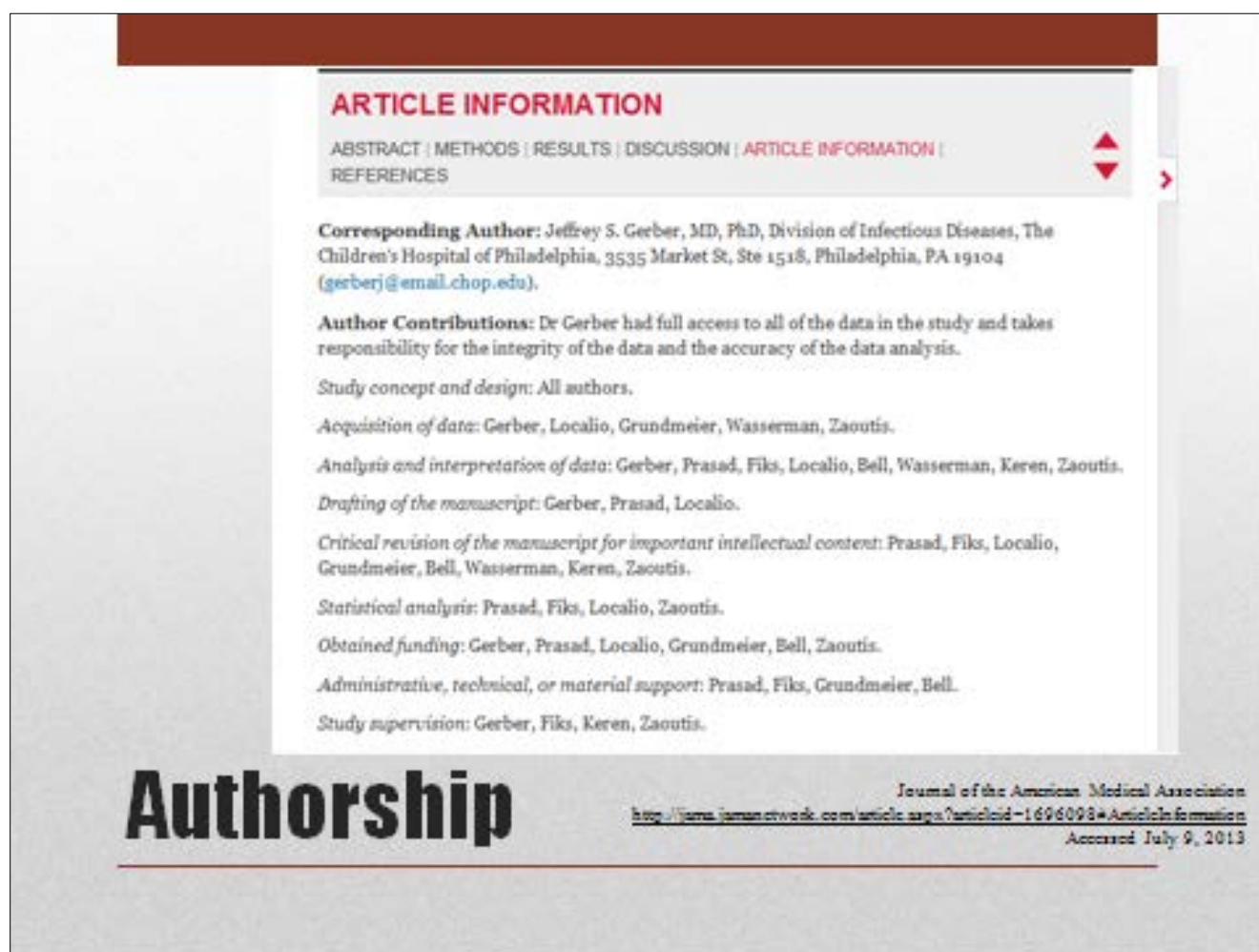
- ☐ A. I certify that
- the manuscript represents original and valid work and that neither this manuscript nor one with substantially similar content under my authorship has been published or is being considered for publication elsewhere, except as described in an attachment, and copies of closely related manuscripts are provided; and
 - if requested, I will provide the data or will cooperate fully in obtaining and providing the data on which the manuscript is based for examination by the editors or their assignees; and
 - for papers with more than 1 author, I agree to allow the corresponding author to serve as the primary correspondent with the editorial office, to review the edited typescript and proof, and to make decisions regarding release of information in the manuscript to the media, federal agencies, or both; or, if I am the only author, I will be the corresponding author and agree to serve in the roles described above.
- ☐ B. I have given final approval of the submitted manuscript.
- C. I have participated sufficiently in the work to take public responsibility for (check 1 of 2 below)
- ☐ part of the content.
☐ the whole content.
- D. To qualify for authorship, you must check at least 1 box for each of the 3 categories of contributions listed below.
- I have made substantial contributions to the intellectual content of the paper as described below.
1. (check at least 1 of the 3 below)
- ☐ conception and design
☐ acquisition of data
☐ analysis and interpretation of data
2. (check at least 1 of 2 below)
- ☐ drafting of the manuscript
☐ critical revision of the manuscript for important intellectual content
3. (check at least 1 below)
- ☐ statistical analysis
☐ obtaining funding
☐ administrative, technical, or material support
☐ supervision
☐ no additional contributions
☐ other (specify) _____

Your Signature

Date Signed

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The seriousness with which journals take the issue of authorship is demonstrated in this screen shot from the JAMA website. At the end of the published abstract, the exact contribution of each author is explicitly described.



ARTICLE INFORMATION

ABSTRACT | METHODS | RESULTS | DISCUSSION | **ARTICLE INFORMATION** | REFERENCES

Corresponding Author: Jeffrey S. Gerber, MD, PhD, Division of Infectious Diseases, The Children's Hospital of Philadelphia, 3535 Market St, Ste 1518, Philadelphia, PA 19104 (gerberj@email.chop.edu).

Author Contributions: Dr Gerber had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

Study concept and design: All authors.

Acquisition of data: Gerber, Localio, Grundmeier, Wasserman, Zaoutis.

Analysis and interpretation of data: Gerber, Prasad, Fiks, Localio, Bell, Wasserman, Keren, Zaoutis.

Drafting of the manuscript: Gerber, Prasad, Localio.

Critical revision of the manuscript for important intellectual content: Prasad, Fiks, Localio, Grundmeier, Bell, Wasserman, Keren, Zaoutis.

Statistical analysis: Prasad, Fiks, Localio, Zaoutis.

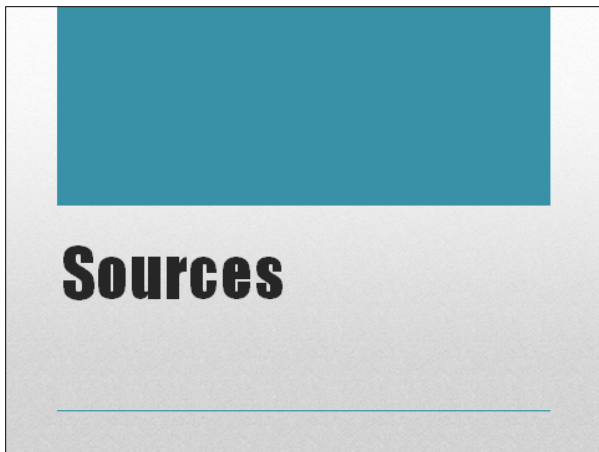
Obtained funding: Gerber, Prasad, Localio, Grundmeier, Bell, Zaoutis.

Administrative, technical, or material support: Prasad, Fiks, Grundmeier, Bell.

Study supervision: Gerber, Fiks, Keren, Zaoutis.

Authorship

Journal of the American Medical Association
<http://www.jamanetwork.com/article.aspx?articleid=1696098#ArticleInformation>
Accessed July 9, 2013



The integrity of all responsible research communication begins with credible, well-researched background material or sources to support your rationale, hypothesis development, and methodology.

This background research provides the intellectual grounding that permits unsolved problems in an area of

investigation to be discussed and competing approaches to be evaluated.

Thus, if you are listed as an author in a study report, look up and read at least the abstract of each source cited in it. You should evaluate that source's quality and integrity, and be grounded in the problems and approaches it raises. Discuss any questions that arise in your reading with a mentor and other study team members.

We will consider three types of informational sources used to support science writing. Each is characterized by its distance from the origin of the information; the three types with which every author should be familiar are:

- primary
- secondary
- tertiary

It must be remembered, however, that in each type the burden of source accuracy and integrity rests with the author.

A primary source can be a novel, a government report, conference proceedings, a report of a clinical trial, or any other work based on *original* research, analysis, thought, or speech. A secondary source provides an examination of a primary source by summarizing, rearranging, or reanalyzing it in a significant manner. Good examples of secondary sources are textbooks and review articles.

Primary Sources

- original research reports
- novels and poetry
- government reports
- original artwork or photography
- technical reports
- conference proceedings

Sources

Secondary Sources

may summarize, clarify, modify, and/or further analyze information from primary sources. Examples include:

- textbooks
- review articles
- magazine articles
- certain histories, criticisms, and commentaries

Sources

The distinction between primary and secondary sources is not always clear and may depend on how the information was gathered.

- Tertiary Sources are collections of facts, data, definitions, or other forms of information.
- Quality scientific writing should strongly rest on primary sources.
- Nevertheless, all three types of sources are acceptable and can be important when used properly.

Sources

Tertiary sources are works such as encyclopedias, dictionaries, almanacs or other compilations of data or definitions.

Properly applied, primary, secondary, and tertiary sources can all be acceptable for scientific publication. For example, prior research reports are often usefully contextualized in some

secondary sources, such as review articles or textbooks.

However, recent primary research reports should form the immediate platform supporting the need for, methodology, and relevance of your study.

Relying on secondary sources can be a deceptive practice in that every reference one makes to prior work establishes a claim to some depth of understanding of that work. Quoting primary source information encountered only through the reading of secondary references infers a level of understanding, reading, or background preparation that may

neither be possible nor properly contextualized through secondary sources. In addition, errors that inevitably enter the literature can be perpetuated by reliance on secondary sources.

“Generally, when describing others’ work, do not rely on a secondary summary of that work. It is a deceptive practice, reflects poor scholarly standards, and can lead to a flawed description of the work described.”

Roig, 2006, p. 30

Sources

For example,

if you are referencing or quoting Allport's work, which has been cited in Nicholson, *but you have not read Allport's work*, list Nicholson in the reference list. In the text, refer to the proper citation using a parenthetical notation such as:

Allport's diary (as cited in Nicholson, 2003)

Sources

Citation formats are addressed in more detail later in this module, but a comment on citing secondary sources is appropriate here.

We have established that secondary sources should be used sparingly; however, for instances wherein the original work is out of print, unavailable through usual sources, or not available in English, one should give the secondary source in the reference list, name and describe the original work in the text, and give a citation for the secondary source.

The burden of source accuracy and integrity rests with you as the author.

Sources



It is worth repeating that the burden of source accuracy and integrity ultimately lies at the feet of the author. Writing for the bioscience literature is a professional activity, and one forfeits the protection of ignorance if one accepts the claim of professional status.

The first century Roman poet Marcus Valerius Martialis accused a fellow poet of

being a *plagiarus* when he claimed Martialis' verse as his own. The Latin word *plagiarus* refers to a kidnapper and is the origin of the English word plagiarism.

In our modern context, plagiarism encompasses intentionally or fraudulently claiming the mantle of authorship, as well as unintentional failures to appropriately attribute and cite the content of one's work.

This section explores this form of "literary kidnapping" or theft as it relates to bioscience writing. Three forms of plagiarism are considered:

- intentional
- unintentional
- self

The goal of conducting research is to produce original contributions that will further knowledge in your field of expertise.

Deliberate plagiarism is the antithesis of contributing original work to the literature.

When one plagiarizes, original work is not being produced, and fundamental standards of professional ethics are breached and personal and institutional integrity, are being compromised.

It cannot be over-emphasized that intentional or deliberate plagiarism can have career-altering consequences.

Intentional plagiarism is deliberately and with full knowledge claiming that another person's words, ideas, or creation are one's own.

Consequences may be severe and include:

- Loss of professional reputation and credibility
- Loss of employment
- Criminal action

Plagiarism

Unintentional plagiarism is usually a product of the uninformed, the careless, or the lazy. Plagiarism that occurs *without* intent most often results from a lack of knowledge or an incomplete understanding of proper citation procedures, or perhaps from a simple, unintentional omission of a citation. However, unintentional plagiarism is still plagiarism and can still have negative consequences.

Unintentional plagiarism may occur owing to:

- A lack of knowledge of proper citation procedures
- A lack of knowledge of what material must be cited
- Forgetting to cite material borrowed from someone else
- Failing to distinguish between original material and that borrowed from someone

(Rachal, 2009)

Unintentional plagiarism still is plagiarism.

Plagiarism

- Original research contributes *new* information to the field; *any* previously published information thus should be cited.
- *Self-plagiarism* occurs when material from an author's own prior publication(s) is not properly cited
- In preparing a manuscript, citation conventions apply to an author's own work, as well as to the work of others.

Plagiarism

Authors may not realize that they can also plagiarize themselves – but they can. Again, the goal of research is to produce original contributions to a field. Representing one's own previous work as newly articulated in a subsequent work is self-plagiarism and a violation of this tenet.

It is, however, important to acknowledge

that citations count in the digital world! If you cite your own work *judiciously*, making reference to previously published points as they contribute to a study under discussion, you improve your count.

There are three basic rules to help an author avoid plagiarism.

First, use quotes for any words or phrases that are not your own.

Second, if you rewrite or paraphrase someone else's words, or borrow their structure in introducing concepts, use proper citations to give credit for ideas and approaches to the material that are not your own.

Third, cite your sources correctly.

Those who know the field are likely to know these sources (and usually recognize their terms and approach). A well-developed reference list thus argues for intellectual credibility, as well as integrity.

Plagiarism may be avoided by using:

- Direct quotations: to give credit for using someone else's words
- Paraphrasing: to give credit for using someone else's ideas
- Proper citation practice is always required

Plagiarism

Avoiding plagiarism:

- "Cite while you write!"
- "Keep copies of your original sources."
- "Cite any material from another source unless it is common knowledge." (e.g. Jackson is the capital of Mississippi.)
- "You must cite quoted and paraphrased material in both the text and in your reference list."

(Welsh & Wright, 2010, p. 64).

Plagiarism

Additional tips to help avoid plagiarism are shown here. Fully developing your citations as you write will help prevent omission of references.

Paraphrasing successfully:

1. Read useful material carefully in the original source multiple times.
2. Make notes in your own words on the content; put aside for several hours (at least)
3. Return to your *notes* and use *them* to introduce ideas from the source text (*don't look*) relevant to your work.
4. Cite the source text, no matter how distant its organization and language from your paraphrase.

(Modified from: Welsh & Wright, 2010)

Plagiarism

Here are some basic guidelines for successfully paraphrasing your sources. What you want to remember is that you must produce significant changes in both vocabulary and sentence structure to paraphrase well.

You may use short quotations within a paraphrase so long as you punctuate and cite them properly.

Paraphrase and its citation underscore the importance of how ideas circulate in research. An original articulation usually will be recognized by those who know the field well; thus, a citation distinguishes an author as one who recognizes both an idea's history and can further its application.

Citations

In this section we will consider the details of citation formats. Although one might consider this topic mundane or simply a required detail, precisely structured references serve the critical function of guiding the reader accurately to the author's source material. As a component of a scientific communication, the citations can speak as importantly as the text.

Citation styles and formats

Medical and health sciences publications usually follow the citation styles and format of the *National Library of Medicine (NLM)*

Citations

Publishers in various fields tend to require a particular format, which they may slightly modify with a journal style sheet.

The National Library of Medicine or NLM citation format is the standard reference style for medical and bioscience publications. It is also an excellent format choice for listing references in one's curriculum vitae.

Citation styles and formats

Excellent resources for learning the NLM style sheet are available. For example, see:

Patrias K, author; Wendling D, editor. *Citing Medicine: The NLM Style Guide for Authors, Editors, and Publishers* [Internet]. 2nd edition. Bethesda (MD): National Library of Medicine (US); 2007-

<http://www.nlm.nih.gov/citingmedicine>

Citations

The National Library of Medicine's citation manual is in electronic format and can be found by visiting the website listed on this slide.

Before publishing your research, it is always prudent to consult your citation manual for any changes in format.

- **Journal article**

Goldblum N, Gotlieb T, Miller G. Production of Formalinized Poliomyelitis Vaccine (Salk-Type) On A Semi-Industrial Scale. *Bull Wld Hlth Org.* 1957;17:1001-1023.

- **Book**

Hardy JD. *The Academic Surgeon. An Autobiography.* Mobile: Magnolia Mansions Press; 2002.

- **Chapter in a book**

Castellanos A, Myerburg RJ. The Resting Electrocardiogram. In: Hurst JW, Logue RB, Schlant RC, Wenger NK, editors. *The Heart.* New York: McGraw-Hill; 1978. p. 298-311.

Citations

NLM citations are quite straight forward. The structure for a standard journal article, a book, and for a chapter in a book are shown here.

- **Homepages**

AMA: helping doctors help patients [Internet]. Chicago: American Medical Association; c1995-2007 [cited 2007 Feb 22]. Available from: <http://www.ama-assn.org/>

- **Parts of Websites**

U.S. Food and Drug Administration, Center for Drug Evaluation and Research. Index to drug-specific information [Internet]. Silver Spring (MD): U.S. Food and Drug Administration; [updated 2009 Jun 4]. Sleep disorder (sedative-hypnotic) drug information; [updated 2009 May 21; cited 2009 Jun 10]; [about 2 screens]. Available from:

<http://www.fda.gov/Drugs/DrugSafety/PostmarketDrugSafetyInformationforPatientsandProviders/ucm101557.htm>

Citations

Here are some examples of NLM website citations, which are more cumbersome because web content is dynamic and may change over time. This obligates an author to include the date the information was accessed in a citation.

Listed here are three of the more common citation formats or styles used in other English language journals.

Many social science journals use the APA format, disciplines based on history often use the Chicago Manual of Style, and other humanities disciplines may require Modern Language Association citations.

Again, when you are writing for publication, identify your journal and check the format it requires for citation.

Citation styles and formats

- APA (American Psychological Association)
Social Sciences
- CMS (Chicago Manual of Style)
History
- MLA (Modern Language Association)
Humanities

Citations

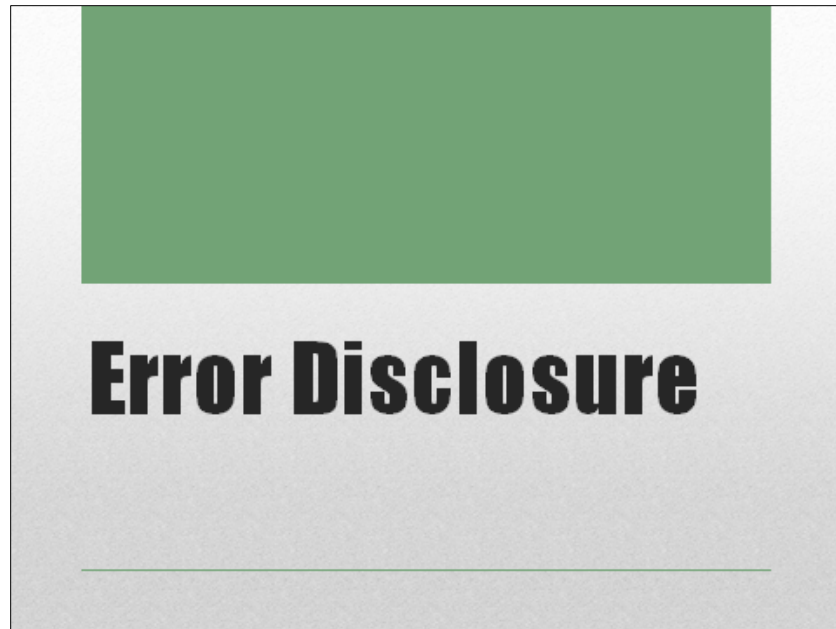
Citation management software

- Software like RefWorks, Zotero, and EndNote are great tools, but **CHECK YOUR WORK!**
- Machines make mistakes!
- Incompatibilities with journal online submission platforms can exist!

Citations

Citation management software is a good tool for tracking your citations, but it should not be relied on as the only method of keeping a bibliography. These programs are not foolproof, and it is good practice to check (and recheck) your sources and their citations by hand.

When drafting or preparing a manuscript for submission, check your intended journal's policy on citation management software very early in the process. Some prohibit its use for uploaded submissions due to software incompatibilities.



A particularly difficult research topic that we will consider is the disclosure of research and publication error.

The 20th Century scientist and philosopher Jacob Bronowski reminded us that, “Science is a very human form of knowledge. We are always at the brink of the known. We always feel forward for what is to be hoped. Every judgment in science stands on the edge of error and is personal. Science is a tribute to what we can know although we are fallible.”

It is clear from Bronowski’s words that errors can and will occur in the course of bioscience research and publication, but it is our challenge and our obligation to manage these errors responsibly and ethically.

- Honest or inadvertent error
- Investigator-author misconduct
- Reporting a colleague's misconduct
- Error or problems in the literature

Error Disclosure

Whether intentional or inadvertent, any participant in research has an ethical obligation to correct mistakes. This obligation is especially profound in the case of biomedical research because the ultimate end user of all biomedical investigation, at the bench or at the bedside, is an individual who has been made vulnerable by disease

or injury. It is thus crucial for every research effort to be as accurate as possible and for even seemingly trivial errors to be corrected. This vigilance with respect to accuracy and correction protects not only the integrity of the literature, but ultimately our patients. Here we will consider research and publication errors from four perspectives: honest or inadvertent error, overt misconduct on the part of an author, reporting a colleague's misconduct, and finally, how to respond to errors discovered in the literature.

If an honest mistake has been made, such as not citing or improperly citing a source or using the wrong figures in a table, and if the article has been accepted for publication but NOT YET PUBLISHED, contact the editor and ask to resubmit the article with the corrections.

If the article has already been published, ask the editor to print a correction.

Each author's integrity, as well as that of the literature itself, is best protected by prompt action whether the article is "in press" or has been published.

Honest or inadvertent error

Prior to publication

- Contact the editor
- Request resubmission with correction

After publication

- Request a printed correction or *erratum*

Prompt disclosure is key in either circumstance

- Retracted publications should be listed on your curriculum vitae

Error Disclosure

Deliberate misconduct by a co-author

- If the article has been accepted for publication, but not yet published, *ask the editor to withdraw it*.
- If the article has been published, request the editor to *print a retraction* as soon as possible.

Error Disclosure

When a co-author has engaged in deliberate misconduct that has affected a study and its outcomes, all co-authors are implicated.

As soon as the misconduct becomes evident, it is thus imperative to notify the editor-in-chief of (1) any journals that are reviewing or preparing to print any articles based on that

study's research, and/or (2) any journals that have already published reports on it.

Any "in press" publication based on questionable or dishonest research practices should be withdrawn. A published retraction should be sought for any report based on such practices that has already appeared in the literature.

When a co-author has engaged in deliberate misconduct, it is also imperative to notify the appropriate parties at your home institution as soon as the misconduct becomes evident.

The institutional review board (IRB), departmental and/or institutional leadership, and

any board or committee charged with upholding RCR can be contacted for assistance in addressing these difficult situations. Seek their help.

Reporting misconduct by a co-author

- *Report the misconduct* to appropriate parties at your institution (the IRB, department chair, etc.).
- If the research has been funded by a grant, notify the funding entity *through the proper institutional channels*.

Error Disclosure

It seems reasonable to measure the prevalence of error in research by the number of retracted research publications.

However, according to American Medical News, most article retractions can be attributed to *misconduct*, not error, with that misconduct attributed to increased competition for grants and tenure.

In 2012, about one in 10,000 articles was retracted, while in 1977, only about 1 in 100,000 articles was retracted.

Errors or problems in the literature

Occurrences of retracted publications

- 1977, one in 100,000 articles
- 2012, one in 10,000 articles
- 10x more common today than 35 years ago
(www.ama-assn.org/amednews/2012/10/15/prab1015.htm).

The increase in retractions has been attributed to increasing competition for grants and tenure.

(O'Reilly, 2012)

Error Disclosure

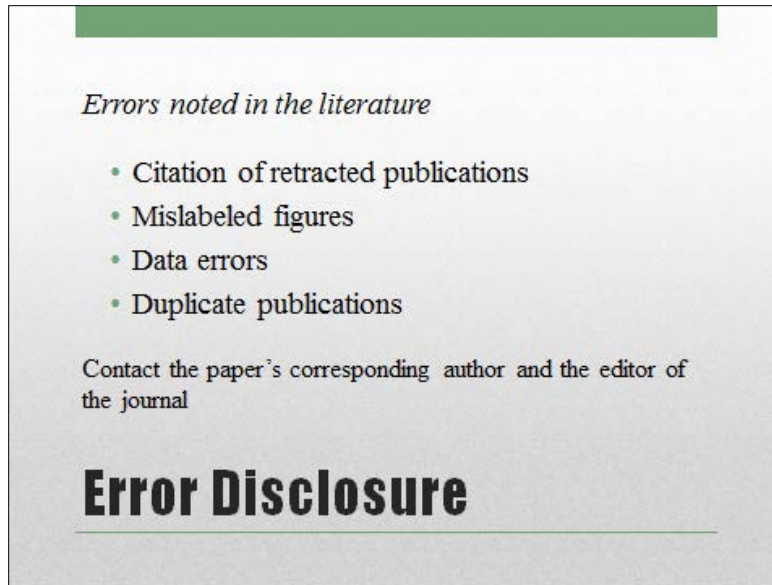
Reasons for retraction

- 34% Fabrication/falsification
- 21% Error
- 14% Duplicate or redundant publication
- 10% Plagiarism
- 9% Suspected fraud
- 14% Other/unknown

Source: *National Academy of Sciences*

Error Disclosure

According to the National Academy of Sciences, two-thirds of retractions are for misconduct, such as fabrication or falsification. Other forms of publication misconduct account for at least another 20% of retractions. Only 21% are attributable to error.



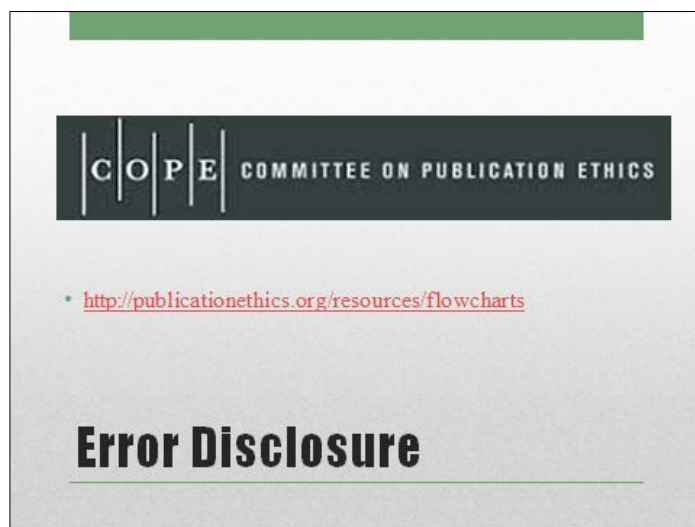
Errors noted in the literature

- Citation of retracted publications
- Mislabeled figures
- Data errors
- Duplicate publications

Contact the paper's corresponding author and the editor of the journal

Error Disclosure

The scientific community as a whole has an ethical duty to maintain the integrity of the science literature. It is responsible practice to alert authors and editors when retracted publications or other errors are found. Simply communicating this fact to the author and editor fully discharges this duty.



COPE COMMITTEE ON PUBLICATION ETHICS

- <http://publicationethics.org/resources/flowcharts>

Error Disclosure

The Committee on Publication Ethics or COPE is a forum for editors and publishers of peer reviewed journals to address all aspects of publication ethics, including how to handle cases of research and publication misconduct. Their website provides excellent guidelines regarding error disclosure. You are encouraged to examine the flow chart links on the

COPE website shown here in order to understand the important role of authors, editors, and publishers in maintaining publication integrity.

PubMed has an excellent system for finding retracted publications. You can search any topic plus the terms “retracted publication” or “retraction of publication”, to find retracted articles. Be sure to include the parentheses as shown in this slide.

Making this type of search a routine part of your writing will aid you in determining whether or not a study you intend to cite has been retracted.

To avoid citing retracted publications:

- Do a search in PubMed for your topic, plus the MeSH headings for retraction

Example: Multiple sclerosis AND (retracted publication OR retraction of publication)

- Retractions can be tracked in real time with email alerts

Error Disclosure

Tracking retractions as a window into the scientific process

Retraction Watch

- <http://retractionwatch.wordpress.com>

Error Disclosure

Another perspective on the retraction issue is available through the Retraction Watch blog. This is a good resource for up-to-the-minute retractions in the scientific community. It also provides some good advice for handling retracted publications. The blog authors, Ivan Oransky and Adam Marcus, both have scientific journalism expertise.

Citing retracted publications

- Determine the reason for the retraction of the research.
- Carefully explain the use of retracted work in the text of your paper

Error Disclosure

There are circumstances wherein citing a retracted reference is fully appropriate. However, the purpose of using such source material must be carefully explained. It is important to look at the reason for the retraction. If the retraction was for improper citations or other

relatively minor reasons, you may still want to include the study as part of your literature review or even base your own methodology on this study.

However, publications retracted for more egregious reasons such as fabricated or falsified data or unsound methodology should be avoided as source material unless the fact of the fabrication is the topic of your paper.

Organizations and Resources

- The Committee on Publication Ethics (<http://publicationethics.org/>) (Elsevier, Wiley-Blackwell, and Wolters Kluwer)
- The International Committee of Medical Journal Editors (<http://www.icmje.org/>)(JAMA)
- Department of Health and Human Services' Office of Research Integrity (<http://ori.hhs.gov/>)
- Association of Clinical Research Professionals (<http://www.acrpnet.org/>)
- Weblog: Retraction Watch (<http://retractionwatch.wordpress.com/>)

Error Disclosure

This slide gives a list of online resources for dealing with retractions.

Copyright

Copyright is a constantly evolving component of the concept of intellectual property. Many of our practices in this expansive area are controlled by technically complex U.S. and international law. This section is intended to provide an overview of the relevant law and an understanding of the ethical obligations

that flow from copyright as they relate to biomedical research and publishing.

Current U.S. copyright practice is governed by the Copyright Act of 1977 which gives works produced after the law was enacted protection over the course of the author's life plus 70 years. The Sonny Bono Copyright Extension Act of 1998 gives variable, but similar, protections to works produced prior to 1978. These laws have had broad impact on how materials may or may not be used in many fields. The 1998 law has especially impacted the educational use of material protected by copyright under "Fair Use."

The exclusive right of a creator of certain works to use, control, and protect that work as desired. This right is governed by:

- Copyright Act of 1977
 - Applies to works created but not published before 1/1/78 and all works created thereafter:
 - Author's life + 70 years
 - 95/120 years for anonymous works
- Public Law 105-298 (1998)
 - Extended renewal term of pre-1978 copyrights

Copyright

Copyright can apply to:

- literary works
- musical works, including any accompanying words
- dramatic works, including any accompanying music
- pantomimes and choreographic works
- pictorial, graphic, and sculptural works
- motion pictures and other audiovisual works
- sound recordings
- architectural works

Copyright

Copyright protects much more than the written word. Many other forms of intellectual property can receive protection, including music and lyrics, theatrical and dance works, images of all types, audio and visual materials, as well as technical drawings and blueprints.

Copyright does not apply to:

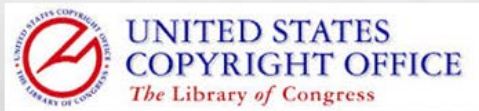
- works that have not been written, notated, or recorded in some form
- lettering, colors, slogans, names, familiar symbols
- ideas, procedures, methods, systems, processes, concepts, principles, discoveries, devices (as distinguished from a description), or explanations
- common knowledge without original authorship

Copyright

Copyright does not protect common knowledge or ideas that have not been recorded in some way.

The United States Copyright Office is the most current source for copyright information.

For copyright basics go to <http://www.copyright.gov/>



Copyright

The United States Copyright Office is a department of the Library of Congress and provides information and resources related to copyright to Congress, federal agencies, the courts, and the general public. Go to the link shown in this slide and click on the “Copyright Basics” page. Read this information carefully for an overview of current copyright practice.

It is good scholarship practice to assume published materials, both print and online, are protected by copyright. Permission to use materials can take several weeks so plan ahead if the inclusion of such materials is critical to a document or presentation with a deadline.

Good practice assumes material is copyrighted

- This includes tables, graphs, figures, photographs and other images
- Acknowledgment does not substitute for permission.
- It is always safest to obtain permission from the copyright owner (most often the publisher)

Copyright

Accessing the Copyright Clearance Center

- <http://www.copyright.com/>
- allows you to obtain permission to use materials.
- can search by ISBN/ISSN + author or publisher.

Examine web pages carefully for copyright information.

Copyright

Determining who owns the copyright to a work can be a confusing process. Resources such as copyright.com and library databases can be helpful in this regard. For journal articles and books, a good rule of thumb is to always start with the editor or publisher. For websites, look for features labeled “About Us” to identify the person or

organization responsible for the content, and contact them via e-mail or telephone. In addition, some sites post a link called “Copyright” or “Permissions and Licensing,” which provide the process and forms you will need to request permission to use their posted materials.

Copyright is generally considered to be an exclusive right held by the author. However, there is a fair use doctrine that allows limited exceptions for use of very small amounts of copyrighted material for specific purposes. These exceptions include certain scholarly uses, such as education and research, as well as commentary, journalism, criticism and archiving.

Very short excerpts of copyrighted material may be used without the holder’s permission for some limited applications

- certain educational pursuits
- news reporting
- criticism
- research
- library archiving

Fair Use

Factors in determining "Fair Use"

- purpose of the use
- nature of the work
- effect of the use on the owner
- amount used

Fair Use

It is important to understand that the fair use guidelines provided here **are not** legally binding. However, four factors may help you determine if your proposed usage falls **within generally accepted fair use**:

- (1) The purpose and character of the use, including whether such use is of a commercial nature or is for non-profit educational purposes;
- (2) The nature of the copyrighted work (is it a short book review or the book itself);
- (3) The amount and substantiality of the portion used in relation to the work as a whole; and
- (4) The effect of the use upon the potential market for or value of the copyrighted work. Ask, for example, "Could the use of this material result in a monetary or professional loss to the copyright holder?"

The following examples show a good faith effort to abide by the principles of "Fair Use"; however, they are not legally binding!

- **Prose:** 10% of an entire work or fewer than 1,000 words, whichever is less
- **Poetry:** An entire poem of no more than 250 words; no more than 3 poems by a single poet.
- **Audio** (music, lyrics, music video, etc.): 10% of a recording, but no more than a 30 second excerpt from an individual work (this excerpt may not comprise an entire movement or aria).

(Fair Use Guidelines for Educational Multimedia, 1996, pp. 9-10)

Fair Use

Consideration of the examples shown above will give some perspective as to how much of an author's work one might judge to be permitted under "fair use."

Works which have been copyrighted, but no longer are so, are considered to be in the public domain.

Works in the public domain may be used without seeking the copyright holder's permission.

- Works in public domain are available for unrestricted public use; they are unavailable for private ownership.
- Materials for which copyright has expired or left un-renewed reside in the public domain.

Public Domain



Fair Use

http://www.unc.edu/Library/Copyright_Portal.aspx

Detailed information both on copyright and fair use is available from the Rowland Medical Library website.

Works published:

- in the U.S. before 1923
- from 1923 to 1977 without copyright
- abroad from 1923 to 1997; in the public domain where they originated

Unpublished works:

- anonymous and composed before 1893
- author(s) dead before 1943

(copyright.comell.edu/resources/publicdomain.cfm)

Public Domain

Works for which copyright has expired are also considered to be in the public domain. Some of the criteria that may place a work into this category are shown here. Using such materials does not reduce an author's need to provide a complete and accurate citation, but it does obviate the need for permission.

Factors determining what materials are in the public domain are:

- Works published in the U.S. before 1923; their copyright protection has expired
- Works published between 1923 and 1977 which were published *without* a copyright notice
- Unpublished works where the author(s) *died before 1943*
- Unpublished and anonymous works *created before 1893*
- Works published abroad from 1923 to 1997 which are in the public domain in the country of publication as of January 1, 1996 (Copyright Term and the Public Domain in the United States:

<http://copyright.cornell.edu/resources/publicdomain.cfm>)



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Sources: APA Citation

The American Psychological Association produces the style sheet most frequently used in the social sciences.

A book chapter in an edited book, cited by using the APA format:

Hogue, C. W. V. (2001). Structure Databases. In A. D. Baxevanis & B. F. F. Ouellette (Eds.), *Bioinformatics* (2nd ed., pp. 83–109). New York, NY: Wiley-Interscience.

For a complete list of reference types, please see:

American Psychological Association. (2010). *Publication manual of the American Psychological Association* (6th ed.). Washington, DC.
<http://www.apa.org/pubs/books/4200066.aspx>

Sources: CMS Citation

The Chicago Manual of Style furnishes the style sheet most frequently used in history.

A book chapter in an edited book, cited by using the CMS format:

Hogue, Christopher W. V. "Structure Databases." In *Bioinformatics*, edited by Andreas D. Baxevanis and B. F. Francis Ouellette, 83–109. 2nd ed. Life Sciences Series. New York, NY: Wiley-Interscience, 2001.

For a complete list of reference types, please see:

The Chicago Manual of Style, 15th Edition. Chicago: University of Chicago Press, 2010.
<http://www.chicagomanualofstyle.org/16/contents.html>

Sources: MLA Citation

The Modern Languages Association produces the style sheet most frequently used in the humanities.

A book chapter in an edited book, cited by using the MLA format:

Hogue, Christopher W. V. "Structure Databases." *Bioinformatics*. 2nd ed. Ed. Andreas D. Baxevanis & B. F. Francis Ouellette. New York, NY: Wiley-Interscience, 2001. 83–109. Print. Life Sciences Series.

For a complete list of reference types, please see:

Modern Language Association. *MLA Handbook for Writers of Research Papers*, 7th Edition. New York: Modern Language Association, 2009.
<http://www.mlahandbook.org/private/handbook>

Organizations and Resources

The Committee on Publication Ethics

Elsevier, Wiley-Blackwell, and Wolters Kluwer

<http://publicationethics.org/>

The International Committee of Medical Journal Editors

<http://www.icmje.org/>

Journal of the American Medical Association (JAMA)

<http://jama.jamanetwork.com/public/about.aspx>

Department of Health and Human Services' Office of Research Integrity

<http://ori.hhs.gov/>

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