Reference Rules and Styles in Scientific Writing

In this talk, we’ll look at the why and how of adding references to a manuscript...

Why? How?
Why cite other people’s work?
To give credit to others for their work
To prove your credibility and demonstrate your familiarity with the problem
To place an idea in context
To establish authority for a claim
To justify an assumption
To distinguish your work from that of others and show the novelty and significance of your contributions

Why cite your own work?
To get credit for your own work
To show how the work being reported is related to and builds on what you’ve already done
Why else do readers need references?

To evaluate the validity of your methods, your assumptions, and your conclusions

To be able to investigate an idea in greater detail

To be aware of alternative methods or conclusions

Be absolutely objective in citing references, even ones that don’t agree with you and from people you don’t like

“...a specific, extra type of integrity that is not lying, but bending over backwards to show how you may be wrong, that you ought to have when acting as a scientist.”

—Richard P. Feynman

Surely You’re Joking Mr. Feynman!

Failure to cite fairly is called selective citation and is a breach of professional standards
What has to be cited?

“...as first shown by Newton, \( F = ma \).”

Exception for “common knowledge”

BUT

“common knowledge” is context dependent
field and subfield
audience
venue

Should it be cited? Err on the side of generosity!

(particularly if the author is still alive...)

1Isaac Newton, Philosophiae Naturalis Principia Mathematica (London, 1687).

Which citation?

Cite original, not derivative work, if possible—
minimizes risk of misinterpretation or error in
the secondary source

Cite the final, peer-reviewed version, not the
preprint (Phys. Rev. D, not arXiv)
Bad citation practices:

- Selective citation—incomplete, biased
- Citing inaccessible sources
- Citing papers you haven’t actually read (!)
- Misrepresenting the cited paper
- Citing indiscriminately (the “core dump”)

“Literature references should not be tacked onto a manuscript ...instead, they need to be used with taste and judgment. Although some may consider references mere “window dressing”—something added to a manuscript to make it look scholarly—their misuse speaks loudly for itself...Such citations become annoying rather than illuminating.”

—Herbert B. Michaelson

*How to Write & Publish Engineering Papers and Reports, 3rd ed.*

Now we’ll look at *how* to format those citations...
Rule #1—Journals have their own idiosyncratic rules

*Physical Review Letters*—

*Semiconductor Science and Technology*—

*Astrophysical Journal*—

*Science*—

**TIP:** Read the “instructions for authors” that are printed in the journal

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Basic reference style for physicists:


If more than five authors, you may use F. Author et al., but get in the habit of putting all author names in your citation manager—you’ll need them for proposals

Use AIP style for books, theses, patents, computer codes, websites, reports, and unpublished materials
To title or not to title?

**Phys. Rev. Lett.**—

**Nature Physics**—
9. Cronenwett, S. M., Oosterkamp, T. H. & Kouwenhoven, L. P.

TIP: Put titles and inclusive page numbers in your master bibliography—although you won’t need them for most journal papers, you **will** need them for some papers, proposals, and other docs.

Don’t make up your own abbreviations of journal names

The *AIP Style Manual, Appendix G* has nine pages (two columns each) of abbreviations for journal names; use ’em

Or consult
https://library.caltech.edu/reference/abbreviations/

Essential to use standard abbreviations so the bibliographic information is recorded properly in the citation indexes

*https://courses.physics.illinois.edu/PHYS496/Resources/AIP_Style_4thed.pdf*
The following styles* are used for Phys Rev and other AIP journals:

*Your discipline may differ; consult your adviser on best practice

Journal article

Authors’ names are presented
First initial. Middle initial. <space> Surname

Journal name is not italicized

Journal volume is bold face

Issue numbers are not used (except when needed, e.g., Physics Today)

Publication year is enclosed in parentheses

Citation is followed by a period
Distinctions are made among journal articles

Published article—

Accepted for publication—

Submitted for publication—

Erratum—

AIP Translation journals—

Book


No comma before opening parenthesis mark
Parenthetical information is publisher, city of publication, and year of publication, in that order
Chapter in a book


In U.S. usage—

Commats and periods go *inside* quotes
Semicolons and dashes go outside quotes
Question marks and exclamation marks go inside or outside, depending on whether the mark is part of what is being quoted

http://people.physics.illinois.edu/Celia/MsP/QuotationMarks.pdf

Paper in a proceedings

Published as a book—

Not published—

Shortened title—
Patent
Ghoshal; Uttam S., U.S. Patent No. 6,356,147 (March 12, 2002).

Thesis

Computer Code

Website*
Theoretical Biophysics Group, “Organization of energy transfer networks in photosynthesis,”
http://www.ks.uiuc.edu/Research/psres (April 15, 2007).**

*Some editors will not accept URLs as references; NSF and NIH do not allow URLs in project descriptions for proposals
**Good practice is to include the date the material was accessed
Reports

Most reports are considered to be "unpublished"


Those reports considered to be full publications should omit the (unpublished) designation at the end of the reference.


How to cite unpublished sources

D.W. Hertzog, private communication.

H.R. Hughes, unpublished.

J. Kunkle, presented at the Undergraduate Research Symposium, Department of Physics, University of Illinois at Urbana-Champaign, Jan. 26, 2007 (unpublished).

TIP: Some editors will not accept papers that cite unpublished sources; use them very sparingly
Consult the journal for preferred style of number call-outs in the text

**In-line**
- Square brackets [1]; space before the first bracket
- Punctuation goes after [1], [3], and [5].
- Multiple refs separated by commas [2], [4], [6].
- Serial refs indicated by an en dash [7–10].

**Superscript**
- No parentheses or brackets; no spaces
- Punctuation goes before.
- Multiple refs separated by commas.
- Serial refs indicated by an en dash.

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Harvard referencing style

Call-outs are given by the last name of the author(s) and the date of publication

References are enclosed in parentheses unless the author’s name is part of the sentence
- “The α-model (Jones et al. 2004)…”
- “According to Jones et al. (2004)…”

Items in the reference list are ordered alphabetically by the surname of the first author of each paper
To recap:

Cite responsibly

No one-size-fits-all for reference style; read the directions

Put all author names, article titles, and inclusive page numbers in your master bibliography; you will need them eventually

Choose a citation manager* that will accommodate a number of different referencing styles


cmelliot@illinois.edu
http://physics.illinois.edu/people/Celia/