

## Reference Rules and Styles in Scientific Writing

### Section D. References Cited

1. Committee on Prospering in the Global Economy of the 21st Century, Committee on Science, Engineering, and Public Policy, National Academy of Sciences, National Academy of Engineering, and Institute of Medicine of the National Academies, *Rising above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future* (The National Academies Press, Washington DC, 2007). [http://www.nap.edu/catalog.php?record\\_id=11165](http://www.nap.edu/catalog.php?record_id=11165)
2. National Academies of Sciences, Engineering and Medicine, *Developing a National STEM Workforce Strategy: A Workforce Summary* (Washington DC, The National Academies Press, 2016). doi: 10.17226/21900.
3. J.R. Frenn, ed., *Physics Graduate Education for Diverse Career Options* (American Physical Society and the American Association of Physics Teachers, College Park MD, 1995).
4. Institute of Medicine, National Academy of Sciences, and National Academy of Engineering, *Expanding Underrepresented Minority Participation: America's Science and Technology Talent at the Crossroads* (Washington DC, The National Academies Press, 2011). ISBN-13: 978-0-309-15949-2 (PDF).
5. R.S. Overather and C.J. Dillon, *Advancing Diversity in the US Industrial Science and Engineering Workforce* (Washington DC, The National Academies Press, 2014). ISBN-13: 978-0-309-16505-8.
6. P.J. Mahony and S. Nicholson, "Physics Bachelor's Degrees: Results from the 2010 Survey of Enrollments and Degrees," *Focus On*, September 2012, American Institute of Physics. <https://www.aip.org/sites/default/files/statistics/undergrad/bachelors-p-10.pdf>
7. S. Herrick, A. Bommersiek, K.S. Budd, C. Fere, T. Holday, P. Rankin, C.M. Urry, S.J. Yemellin, *Gender Equity: Strengthening the Physics Enterprise in Universities and National Laboratories*, results of an NSF Workshop, May 6-8, 2007 (College Park, MD, American Physical Society, 2009).

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*with thanks to Charles Gammie  
who first articulated many of the "why"s*



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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,  $F = ma$ .”<sup>1</sup>



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...)

<sup>1</sup>Isaac 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*, 3<sup>rd</sup> ed.  
(Oryx Press, 1990), p. 143.

Now we'll look at how to format those citations...





## Rule #1—Journals have their own idiosyncratic rules

### ***Physical Review Letters*—**

[1] R.A. Smith, B.S. Handy, and V. Ambegaokar, *Phys. Rev. B* **63**, 094513 (2001).

### ***Semiconductor Science and Technology*—**

[2] Chen C H, Tang C W, Shi J, and Klubek K P 2000  
*Thin Solid Films* **363** 327

### ***Astrophysical Journal*—**

McCullough, P. R., et al. 2006, *ApJ*, 648, 1228

### ***Science*—**

11. A. J. Leggett, *Phys. Rev. Lett.* **25**, 1543 (1970).

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



## Basic reference style for physicists:

[1] G. Baym, D.H. Beck, and C.J. Pethick, “Transport in very dilute solutions of  $^3\text{He}$  in superfluid  $^4\text{He}$ ,” *Phys. Rev. B* **88**, 014512/9 pp. (2019).

**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.*—**

[6] P. Nozières and D. Pines, *Phys. Rev.* **113**,  
1254 (1959).

### ***Nature Physics*—**

9. Cronenwett, S. M., Oosterkamp, T. H. & Kouwenhoven, L. P.  
A tunable Kondo effect in quantum dots. *Science* **281**, 540–  
544 (1998).

**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](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**

A. Bezryadin, C.N. Lau, and M. Tinkham, *Nature* **404**, 971  
(2000).

**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—**

J.M. Smith, Phys. Rev. B **75**, 15 (2007).

### **Accepted for publication—**

J.M. Smith, Phys. Rev. B (to be published).

### **Submitted for publication—**

J.M. Smith, Phys. Rev. B (submitted).

### **Erratum—**

J.M. Smith, Phys. Rev. B **75**, 706(E) (2007).

### **AIP Translation journals—**

J.M. Smirnov, Zh. Eksp. Teor. Fiz **51**, 165 (1966) [Sov.  
Phys. JETP **24**, 11 (1967)].

## **Book**

Edward R. Tufte, *Visual Explanations* (Graphics Press,  
Cheshire, CT, 1997).

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

## Chapter in a book

R.B. Fuller, “Defects in MoGe thin films,” in *Point Defects in Solids*, eds. J.H. Crawford, Jr. and L.M. Slifkin (Plenum, New York, 1972), Ch. 2, pp. 103–150.

**In U.S. usage—**

**Commas 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—**

R.B. Jones, in *Proc. of the Workshop on Nuclear and Dense Matter, Urbana, 1977*, eds. G.A. Baym and V.R. Pandharipande (University of Illinois, Urbana, 1978), p. 195.

**Not published—**

R.B. Jones, in *Proc. of the Workshop on Nuclear and Dense Matter, Urbana, 1977*, eds. G.A. Baym and V.R. Pandharipande (unpublished).

**Shortened title—**

R.B. Jones, in *Nuclear and Dense Matter*, proceedings of the Workshop, Urbana, Illinois, eds. G.A. Baym and V.R. Pandharipande (University of Illinois, Urbana, 1978).

## Patent

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

## Thesis

D.L. Dalidovich, Ph.D. thesis, University of Illinois at Urbana-Champaign, 2001 (unpublished).

## Computer Code

Chris Denend et al., computer code DREAMWEAVER, v. 4 (Macromedia, Inc., San Francisco, CA, 2000).

## 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”

R.E. Rowland, Argonne National Laboratory Report ANL/ER—3, 1995 (unpublished).

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

D.H. Lassila, B.P. Bonner, V.V. Bulatov, J.U. Cazamias, and E.A. Chandler, Lawrence Livermore National Laboratory Report UCRL-TR-202805, 2004.

## 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<sup>11</sup>

Punctuation goes *before*.<sup>12</sup>

Multiple refs separated by commas.<sup>13,14,15</sup>

Serial refs indicated by an en dash.<sup>16–19</sup>

## 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  $\alpha$ -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

Abel, T. 2002, *Science*, 295, 93

Yu, Q., & Tremaine, S. 2002, *MNRAS*, 335, 965

## 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**

\*q.v. [http://en.wikipedia.org/wiki/  
Comparison\\_of\\_reference\\_  
management\\_software](http://en.wikipedia.org/wiki/Comparison_of_reference_management_software)



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<http://physics.illinois.edu/people/Celia/>