

Announcements

- Wednesday, June 27, 7-8:30 pm, Kane Hall 130: Optional Seminar: "Exploration of the Neuroscience of Decision-Making" with Dr. David Redish (Department of Neuroscience, University of Minnesota)
- Thursday, June 28, 12-1 pm: Women's Career Mentoring Lunch (Optional); RSVP today:
<https://catalyst.uw.edu/webq/survey/swb3/357172>
- Friday, June 29, 12-1 pm, HMC: UW Neurosurgery Seminar (optional; RSVP needed); Courtney Crane, PhD, "Tailoring immune system responses to brain cancer"

Back to Scientific Communications!

1. Why is it important to communicate research?

Because: We should | We want to | We have to

2. Who are (or will be) your audiences?

Peers, editors, reviewers, mentors, public, employers, family

3. Where will you communicate your research?

Conferences, classes, journals, grant applications, interviews

4. When will you present your research?

Research completed, in progress, this summer, after summer

5. How (methods/modes) will you communicate your research?

Papers, talks, posters, grant applications, blogs, articles

Researching Research

How do you find appropriate background literature?

1. Ask other people what to read.
2. Search Engines:

Google Scholar: <http://scholar.google.com>

3. Electronic Databases

PubMed: <https://www.ncbi.nlm.nih.gov/pubmed/>

Scopus: <https://www.scopus.com>

Reference Managers

To find papers

To cite papers

To save papers

To create a reading list

To create a bibliography



Zotero: <http://www.zotero.com> ← FREE!

Endnote: <https://endnote.com> ← Not Free, ~\$250

+ about 30 other products

Things to Do (Summer 2018)

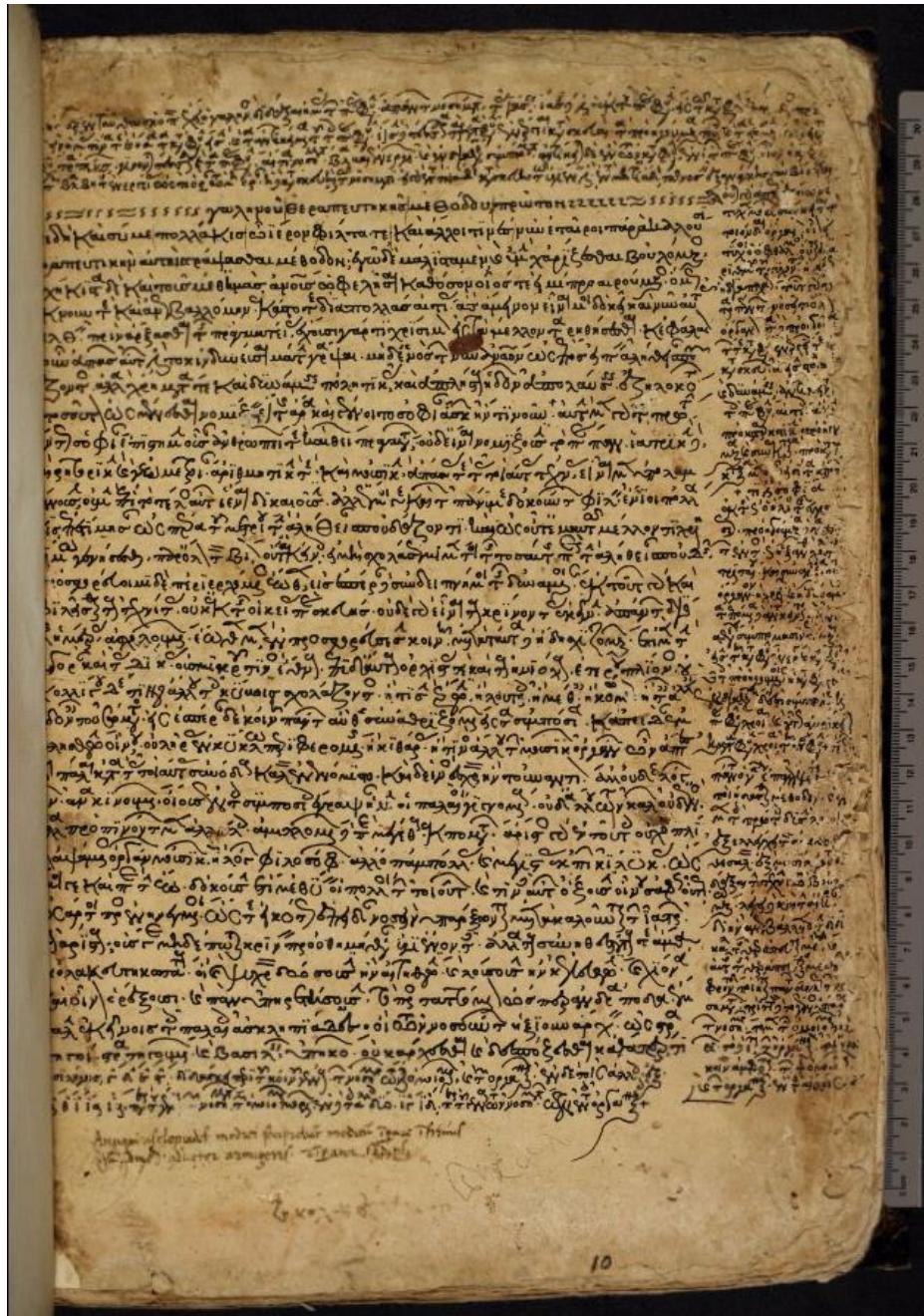
1. Attend a non-CSNE seminar.
2. Read a science story in a popular science magazine, in the newspaper or on a web site.
3. Talk to a non-scientist/non-engineer about your work.
4. Go to a local science “event.”

<http://www.scienceontap.org> | <https://www.pacificsciencecenter.org>

Is it factual? Is it understandable?

Look for effective ways to communicate.

Writing a Scientific Manuscript



Types of science papers

- What are the parts?

When are you ready to write a paper?

Authorship

- Who is an author?
- In what order?

Piled Higher and Deeper by Jorge Cham

www.phdcomics.com

THE AUTHOR LIST: GIVING CREDIT WHERE CREDIT IS DUE

The first author
Senior grad student on
the project. Made the
figures.

The third author
First year student who actually did
the experiments, performed the
analysis and wrote the whole paper.
Thinks being third author is "fair".

**The second-to-last
author**
Ambitious assistant pro-
fessor or post-doc who
instigated the paper.

Michaels, C., Lee, E. F., Sap, P. S., Nichols, S. T., Oliveira, L., Smith, B. S.

The second author
Grad student in the lab that has
nothing to do with this project,
but was included because
he/she hung around the group
meetings (usually for the food).

The middle authors
Author names nobody
really reads. Reserved
for undergrads and
technical staff.

The last author
The head honcho. Hasn't
even read the paper but, hey,
he got the funding, and his
famous name will get the
paper accepted.

Which journal?

- Audience
- Impact factor
- Cost
- Length
- Time

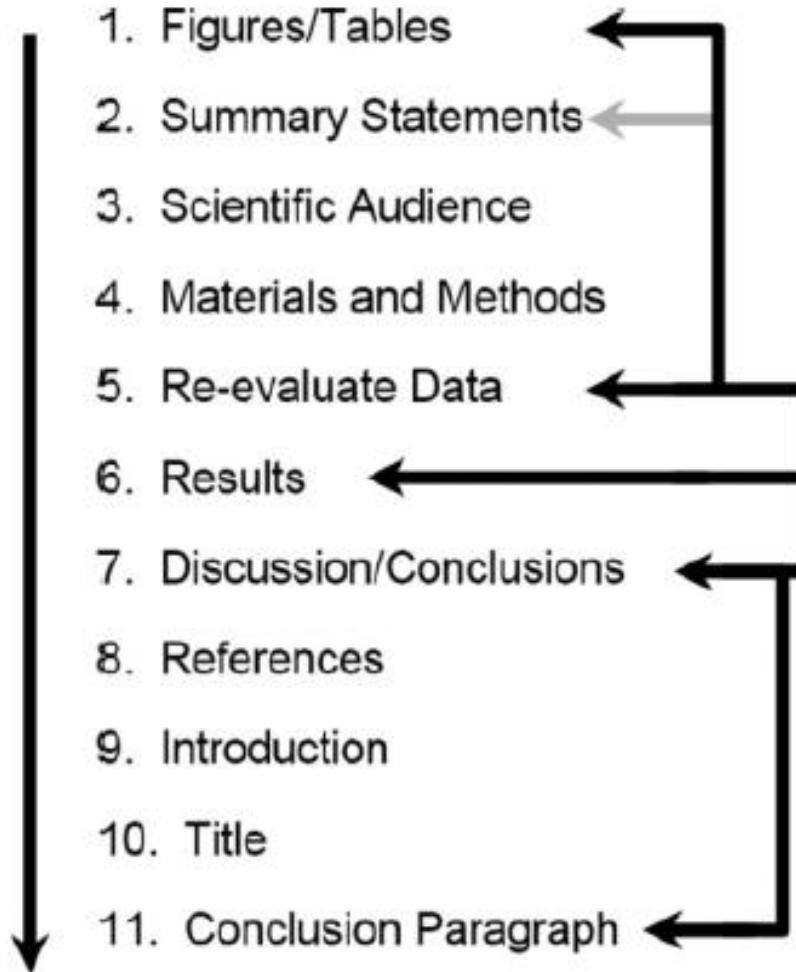
NATURE vs. SCIENCE		
		
FOUNDED	1869	1880
Published by:	Nature Publishing Group (a division of MacMillan Publishers Ltd. of London, a subsidiary of Verlagsgruppe Georg Von Holtzbrinck, GmbH)	American Association for the Advancement of Science (AAAS)
Cost:	£10	\$10
Impact Factor:	31.434	28.103
(It is important to compute this to the third decimal. Units: inches)		
Sections:	News News Features Correspondence Perspectives Articles Letters Jobs To-mah-toe	News of the Week News Focus Letters Views Research Articles Reports Careers Tomato
Ads per issue:		
Full page ads:	16	9
Full page ads about itself:	6	5
Full page ads featuring people in white lab coats smiling and pipetting something:	5	4
Which one will you submit your paper to?	If only you had that problem.	
JORGELAUF © 2009	WWW.PHDCOMICS.COM	

InCite's Journal Citation Reports

<http://jcr.incites.thomsonreuters.com/JCRJournalHomeAction.action>

Order of writing

The linear progression of the process.

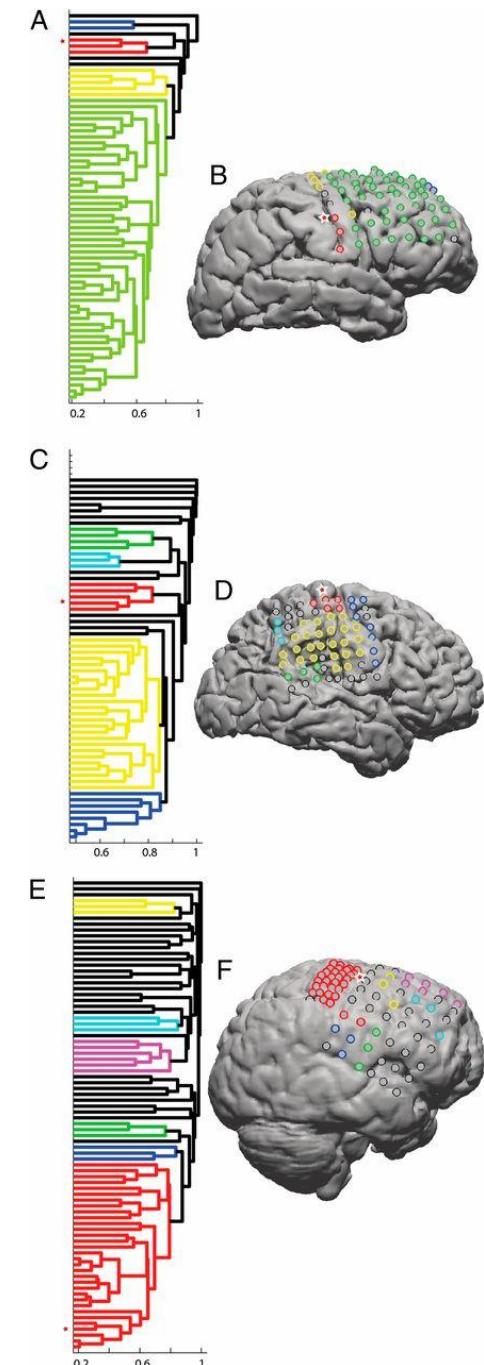


Points where data should be re-evaluated to decide if the data, results, and discussion all point toward the conclusions.

From: O'Connor, T.R. and Holmquist, G.P., Algorithm for writing a scientific manuscript, Biochem Molec. Biol. Educ., 37:344–348, 2009.

Creating figures

- Use a vector graphics editor
- All figures need numbers and captions
- Provide all of the info that the reader needs to understand the figure



Language

- 1st person is okay
- Active voice
 - “the dog bit the postman” vs. “the postman was bitten by the dog”
- Use appropriate jargon
- Don’t use words if you don’t know what they mean
- Don’t use 5 words if you can use 1
- Use periods.
- Forbidden words:
 - Nowadays
 - Whilst
 - Obviously

Results Words (data relation words)	Discussion or Conclusion Words (cause/effect logic and mechanistic words)
Were correlated, were positively correlated	Causes, brings about
A was a function of B; A increased with increasing B	Necessary (strong); mandatory, obligatory, essential
Associated	Necessary and sufficient (very strong)
Accompanied Interdependent, related, correlated	Influences (weak) (affects)
Proportionate, reciprocal, concordant	A brings about a change in B (effects); A influences B
	Consequence, effect, outcome, result
	Elicit, produce, induce, stimulate, consistent with

From: O'Connor, T.R. and Holmquist, G.P., Algorithm for writing a scientific manuscript, Biochem Molec. Biol. Educ., 37:344–348, 2009.

DECIPHERING ACADEMESE

YES, ACADEMIC LANGUAGE CAN BE OBTUSE, ABSTRUSE AND DOWNRIGHT DAEDAL. FOR YOUR CONVENIENCE, WE PRESENT A SHORT THESAURUS OF COMMON ACADEMIC PHRASES

"To the best of the author's knowledge..."

= "WE WERE TOO LAZY TO DO A REAL LITERATURE SEARCH."

"Results were found through direct experimentation."

= "WE PLAYED AROUND WITH IT UNTIL IT WORKED."

"The data agreed quite well with the predicted model."

= "IF YOU TURN THE PAGE UPSIDE DOWN AND SQUINT, IT DOESN'T LOOK TOO DIFFERENT."

"It should be noted that..."

= "OK, SO MY EXPERIMENTS WEREN'T PERFECT. ARE YOU HAPPY NOW??"

"These results suggest that..."

= "IF WE TAKE A HUGE LEAP IN REASONING, WE CAN GET MORE MILEAGE OUT OF OUR DATA..."

"Future work will focus on..."

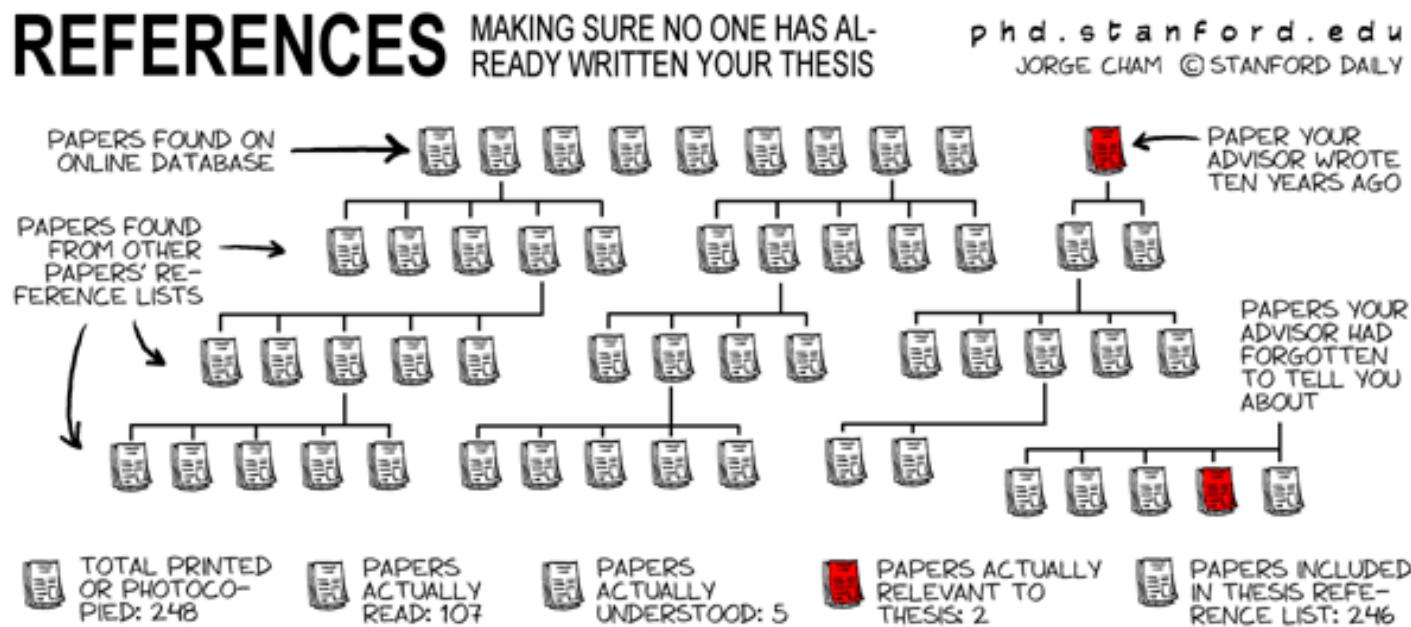
= "YES, WE KNOW THERE IS A BIG FLAW, BUT WE PROMISE WE'LL GET TO IT SOMEDAY."

"...remains an open question."

= "WE HAVE NO CLUE EITHER."

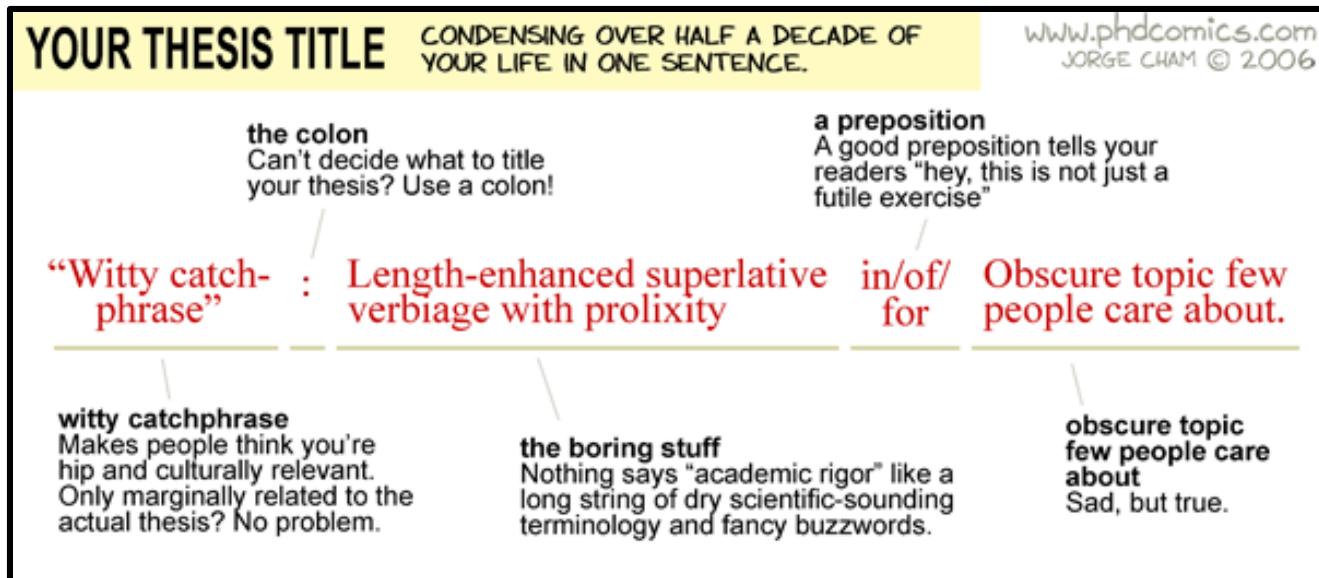
Citations

- Reference editor
- Who do you cite?
- How often do you cite?



Title

- Positive statement
- Summarize your results
- Be specific – appeal to the people who care
- Avoid the :
- Spell things out



Formatting – oh the horror

- Margins
- References
- Spacing
- Font
- Section Titles (order)

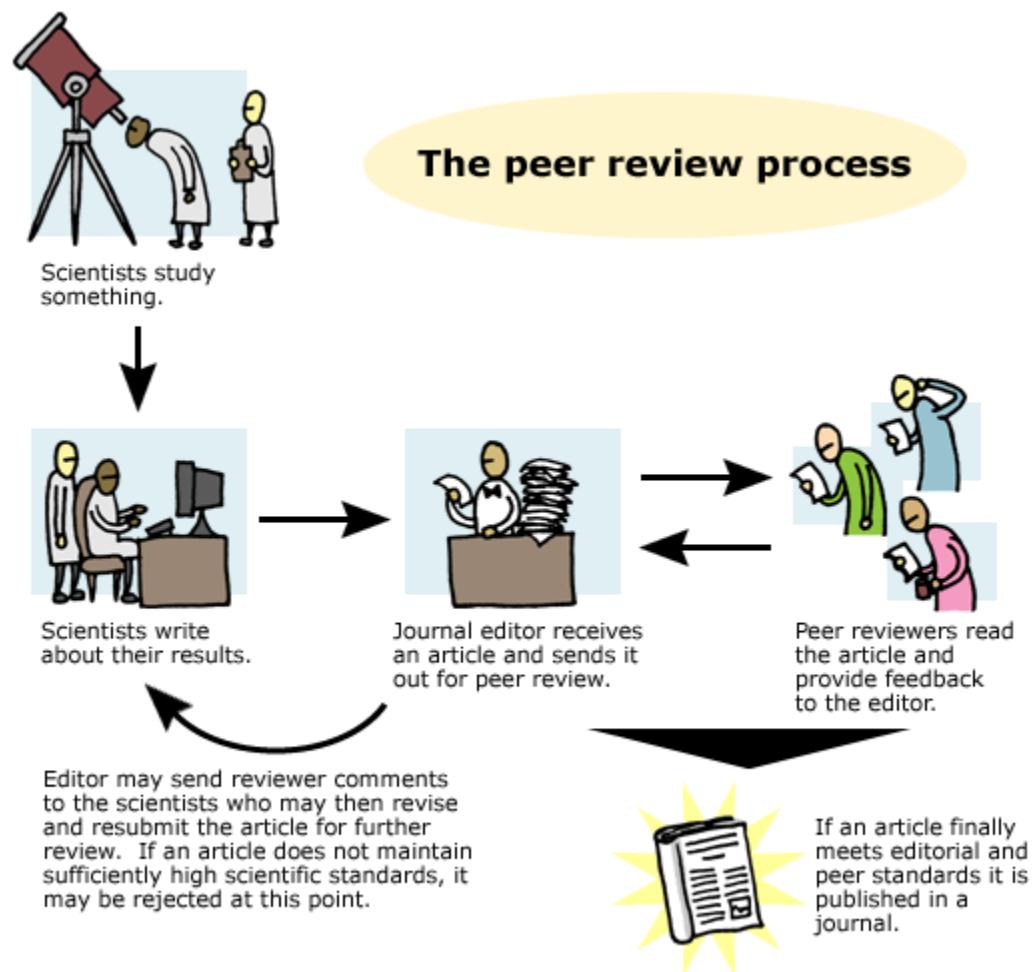
Check: Instructions (Guide)for Authors

Cover letter

- Does anybody read it?

Peer review

- Who are your “peers”
- Some actual reviews:



Revisions

- Be nice
- Do what you can, defend what you can't
- Respond to everything

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ADDRESSING REVIEWER COMMENTS

BAD REVIEWS ON YOUR PAPER? FOLLOW THESE GUIDELINES AND YOU MAY YET GET IT PAST THE EDITOR:

Reviewer comment:

"The method/device/paradigm the authors propose is clearly wrong."

How NOT to respond:

✗ "Yes, we know. We thought we could still get a paper out of it. Sorry."

Correct response:

✓ "The reviewer raises an interesting concern. However, as the focus of this work is exploratory and not performance-based, validation was not found to be of critical importance to the contribution of the paper."

Reviewer comment:

"The authors fail to reference the work of Smith et al., who solved the same problem 20 years ago."

How NOT to respond:

✗ "Huh. We didn't think anybody had read that. Actually, their solution is better than ours."

Correct response:

✓ "The reviewer raises an interesting concern. However, our work is based on completely different first principles (we use different variable names), and has a much more attractive graphical user interface."

Reviewer comment:

"This paper is poorly written and scientifically unsound. I do not recommend it for publication."

How NOT to respond:

✗ "You #&@*% reviewer! I know who you are! I'm gonna get you when it's my turn to review!"

Correct response:

✓ "The reviewer raises an interesting concern. However, we feel the reviewer did not fully comprehend the scope of the work, and misjudged the results based on incorrect assumptions."

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Proficiency

- Practice!
- Read some papers!