

Announcements

- July 4 (Monday): 4th of July Holiday; UW Closed
- Apply for a travel award or virtual registration waiver to attend the Annual Biomedical Research Conference for Minoritized Scientists: <https://abrcms.org/index.php/register/apply-for-a-travel-award>

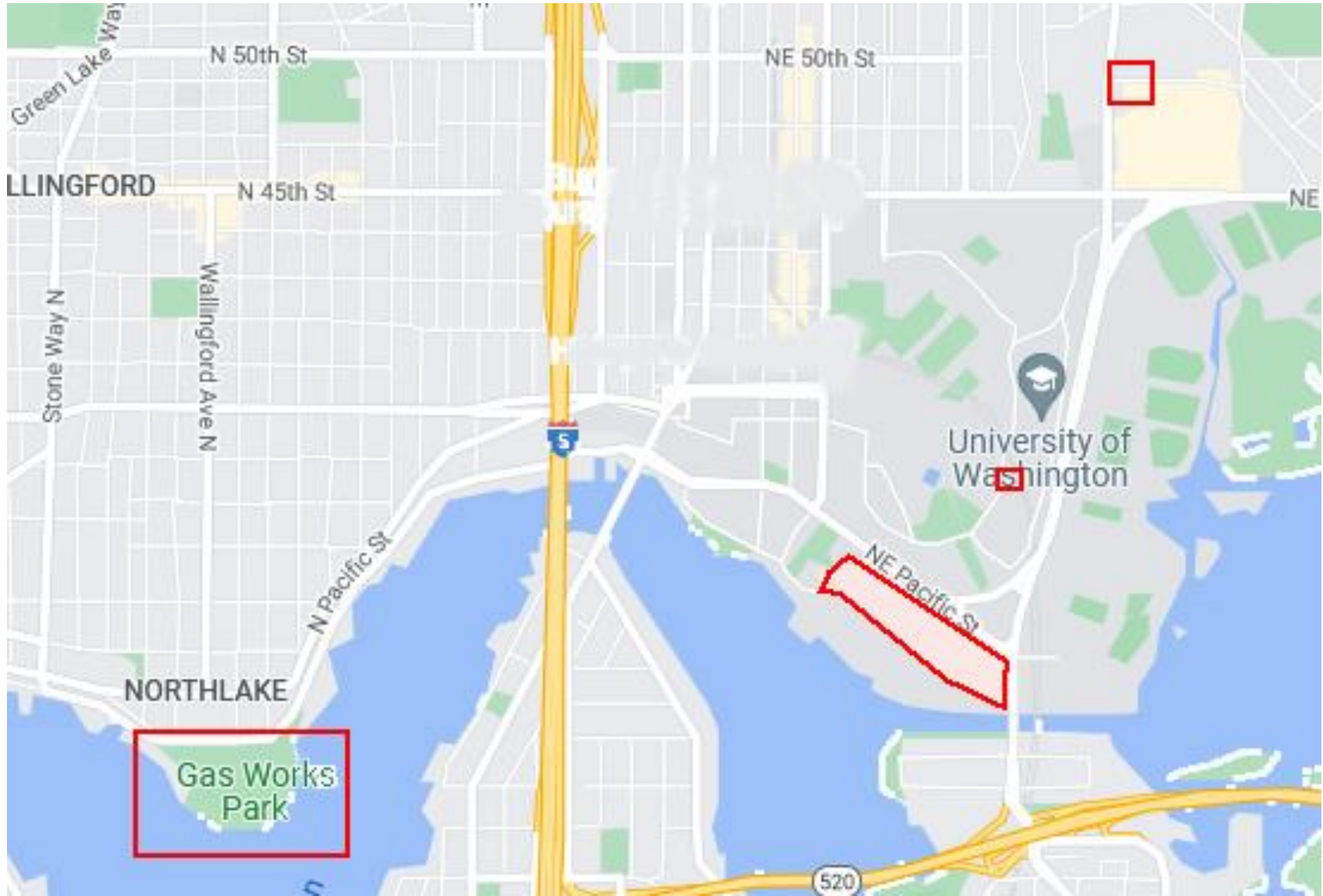


Announcements

July 4 (Monday): Gas Works Park?
Expect Crowds!



July 4 (Monday): Fireworks at Gas Works Park?
2.8 miles (~50 min?) from Nordheim Court
Expect Crowds!



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

“Elevator”

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

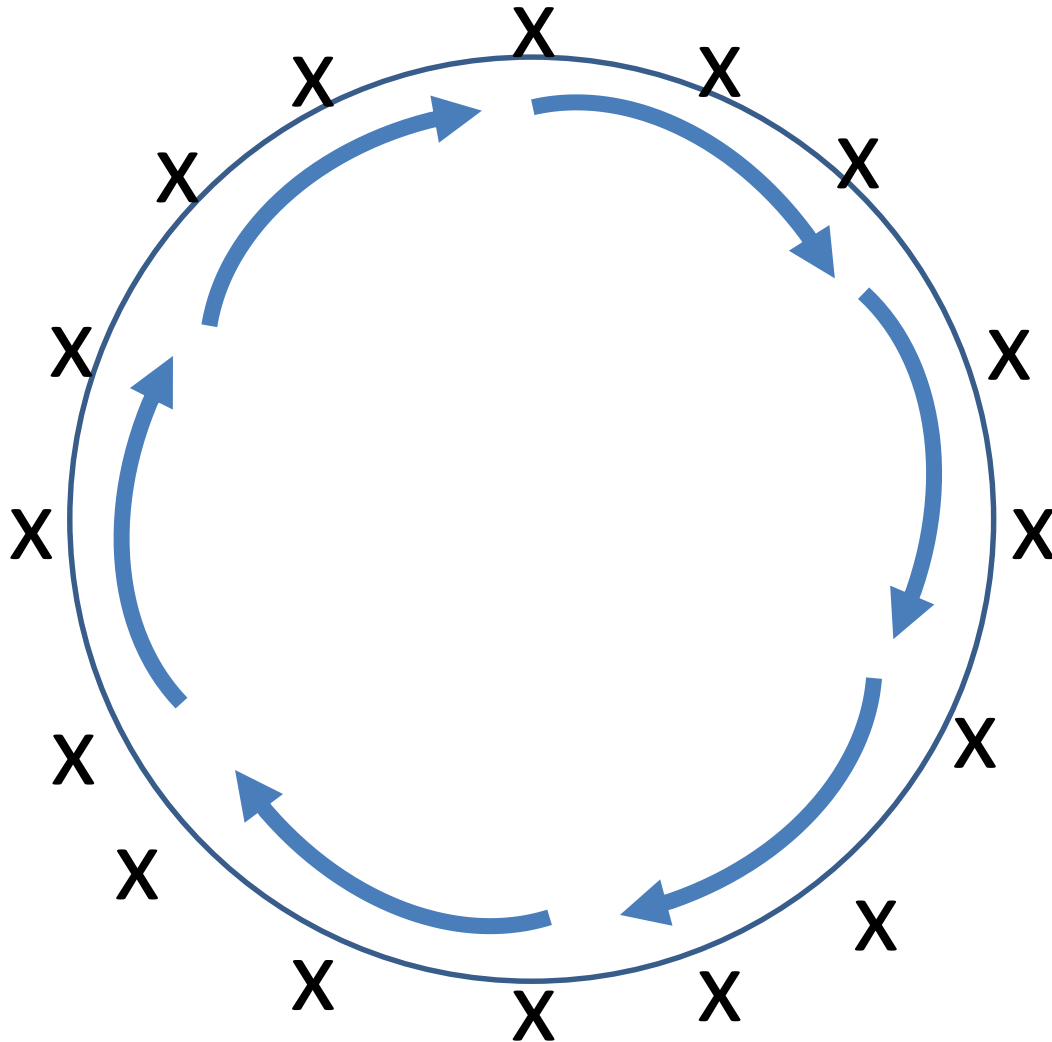
Things to Do (Summer 2022)

1. Attend a non-CNT 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.”



Story Connector

Use only 3 words to form a sentence and continue the story.



Listen!

Reduce “ahs”/”ums”

Project your voice

Don't worry about content

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>

Writing a Scientific Manuscript



Authorship

- Is the position of authors important? Why?
- How do you decide where to publish?
- Is it important where you publish?



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 professor 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.

JORGE CHAM © 2005

www.phdcomics.com

title: "Author List" - originally published 3/13/2005

Authorship

Brain Research, 456 (1988) 57–63
Elsevier

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BRE 13786

Distribution of GAD-immunoreactive neurons in the first (SI) and second (SII) somatosensory cortex of the monkey

Eric H. Chudler, Stephanie Pretel and Dan R. Kenshalo, Jr.

*Neurobiology and Anesthesiology Branch, National Institute of Dental Research, National Institutes of Health,
Bethesda, MD 20892 (U.S.A.)*

(Accepted 16 February 1988)

Brain Research, 481 (1989) 383–387
Elsevier

383

BRE 23397

Distribution and size of GABAergic neurons in area 7b and the retroinsular cortex of the monkey


Eric H. Chudler, Richard L. Nahin and Dan R. Kenshalo, Jr.


*Neurobiology and Anesthesiology Branch, National Institute of Dental Research, National Institutes of Health,
Bethesda, MD 20892 (U.S.A.)*


(Accepted 15 November 1988)

Which Journal?

- Audience
- Impact factor
- Cost
- Length
- Time







| | | |
|--|--|---|
| FOUNDED: | 1869 | 1880 |
| Published by: | Nature Publishing Group <small>(a division of MacMillan Publishers Ltd. of London, a subsidiary of Verlagsgruppe Georg Von Holtzbrinck, GmbH)</small> | American Association for the Advancement of Science (AAAS) |
| Cost: | £10 | \$10 |
| Impact Factor: | 31.434 | 28.103 |
| | <small>(It is important to compute this to the third decimal. Units: inches)</small> | |
| 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?

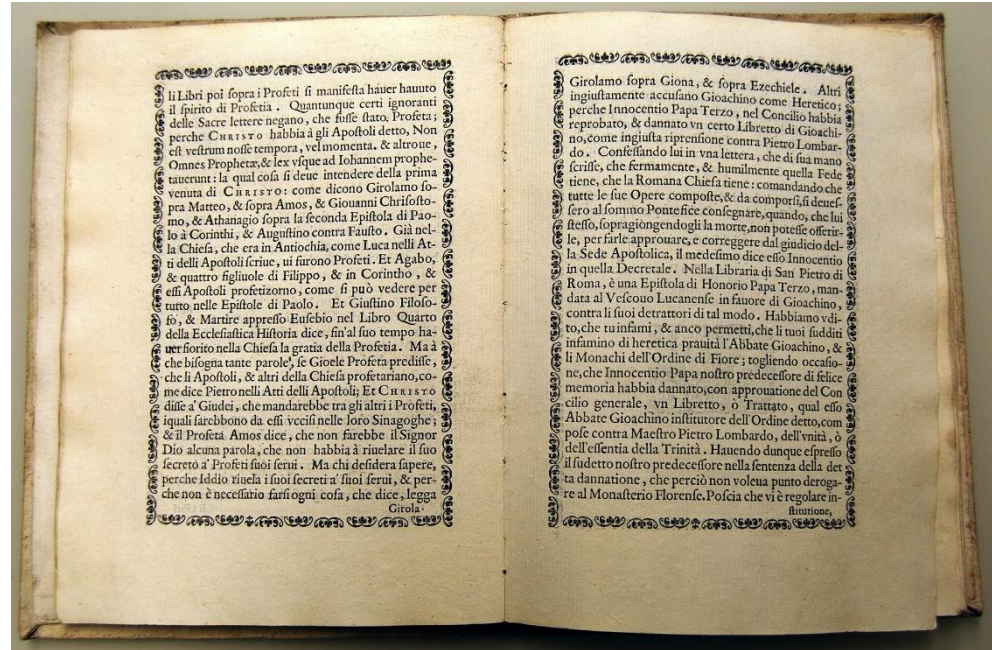
If only you had that problem.

JURIGE CHAM © 2009

WWW.PHDCOMICS.COM

Types of Science Papers

- Research Papers
- Review Papers
- Commentaries
- Letters to the editor
- Book/software reviews



When are you ready to write a paper?



Parts of a paper?

1. Title: Attract your reader
2. Abstract: Short summary of the paper
3. Body: Details, details



What are the parts of a paper?

Order

(as appearing in journal)

- Title
- Authors
- Affiliations
- Abstract
- Introduction
- Methods
- Results
 - Figures
 - Tables
- Discussion
- Acknowledgments
- References
- Supplemental Material

?? Order ??

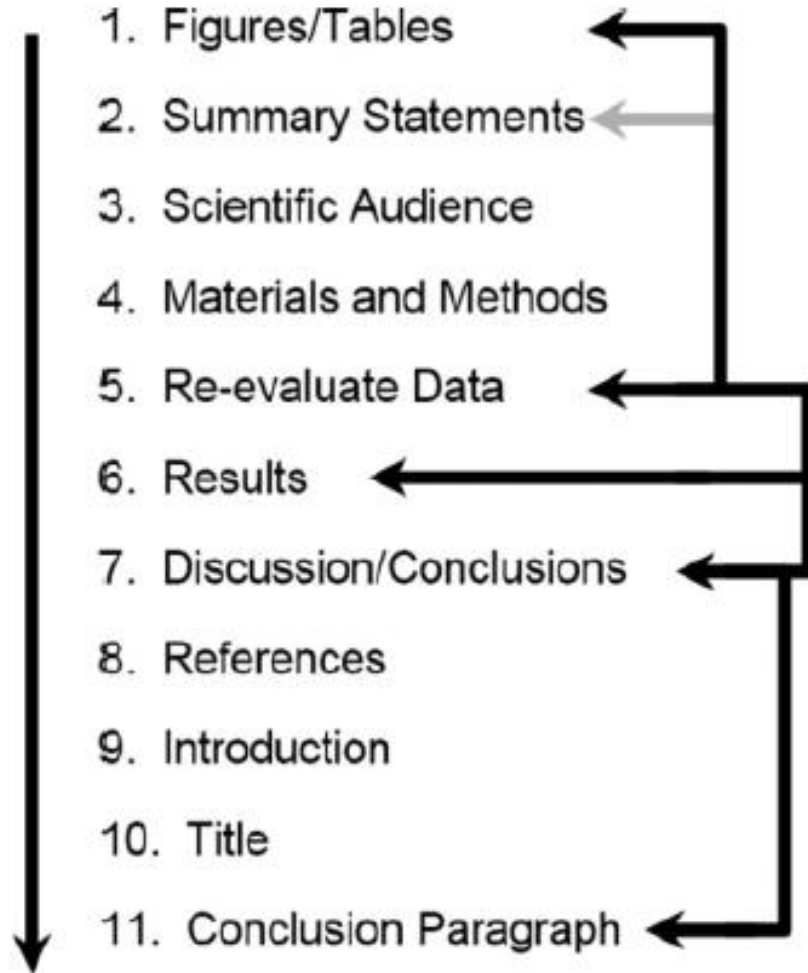
(in which to write a paper)

- Title
- Abstract
- Introduction
- Methods
- Results
 - Figures
 - Tables
- Results
- Discussion
- References



Order of Writing?

The linear progression of the process.

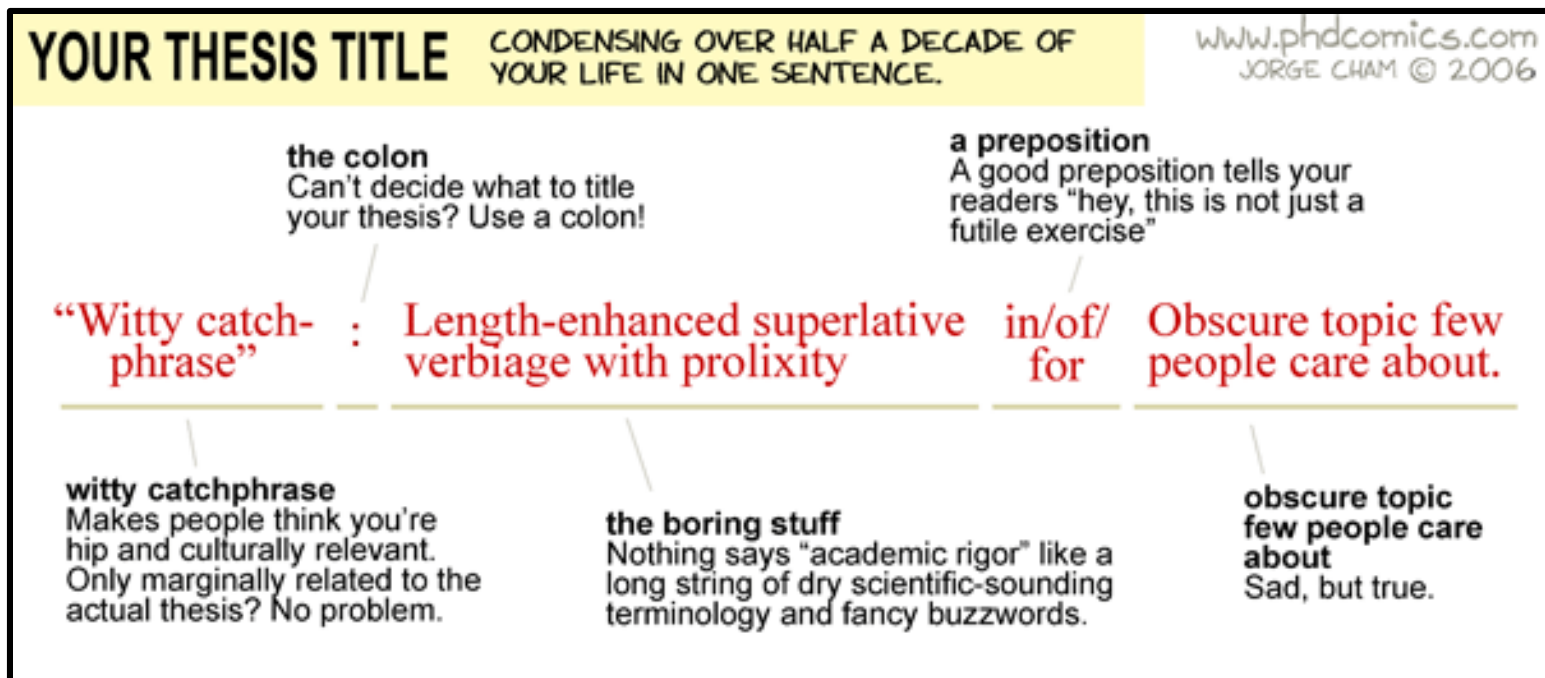


Points where data should be re-evaluated to decide if the data, results, and discussion all point toward the conclusions.

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

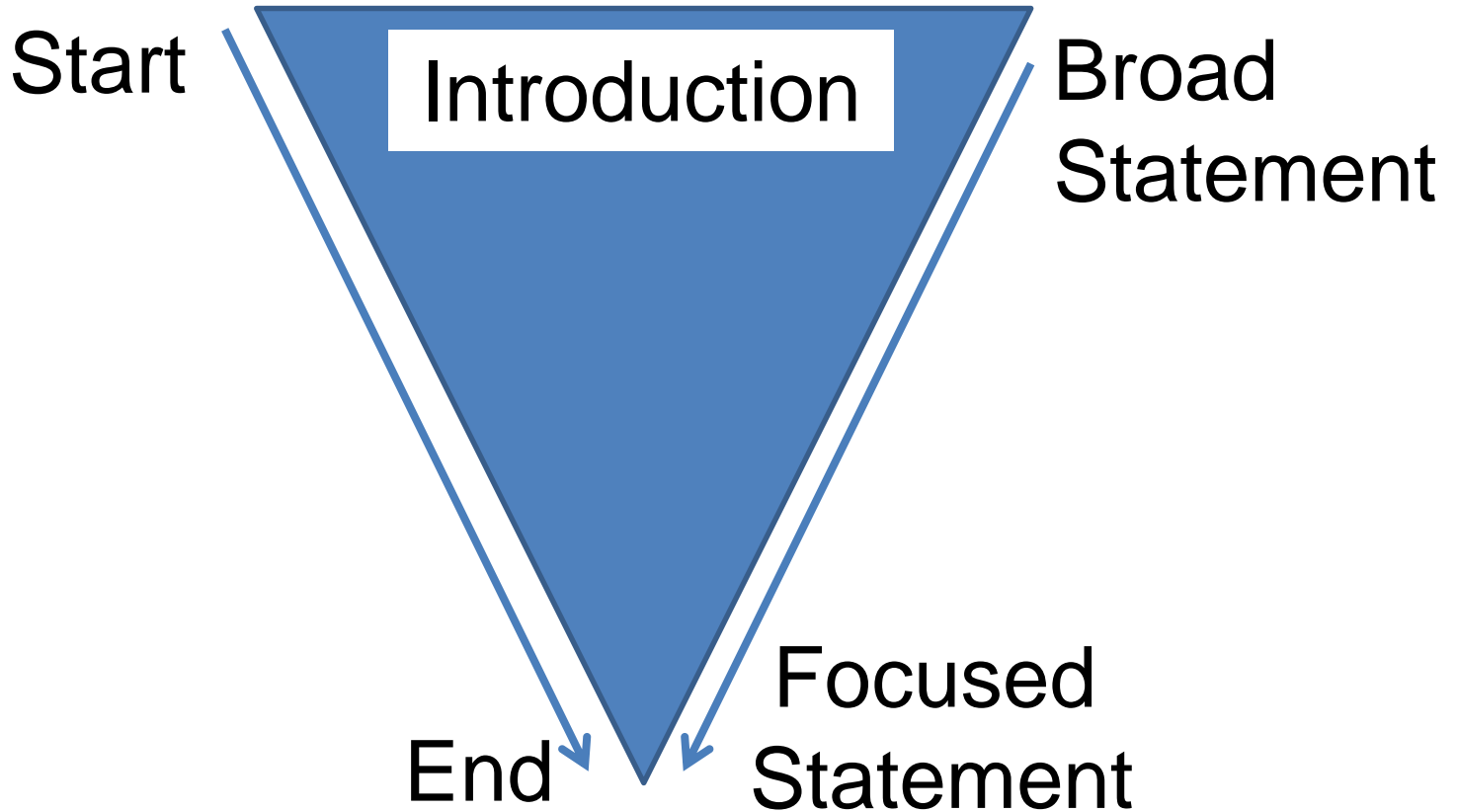
Title

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



Introduction

- Start with a broad statement and then focus.
- Research objectives appear at the end of the introduction.



Methods / Materials and Methods

- What did you do?
- What did you use?
 - Animals? species?
 - Equipment?
 - Drugs?
 - Chemicals?
 - Software?
- How did you do the work?
- When and where did you do the work? (not always needed)

**Include enough details so the reader
can replicate your work.**

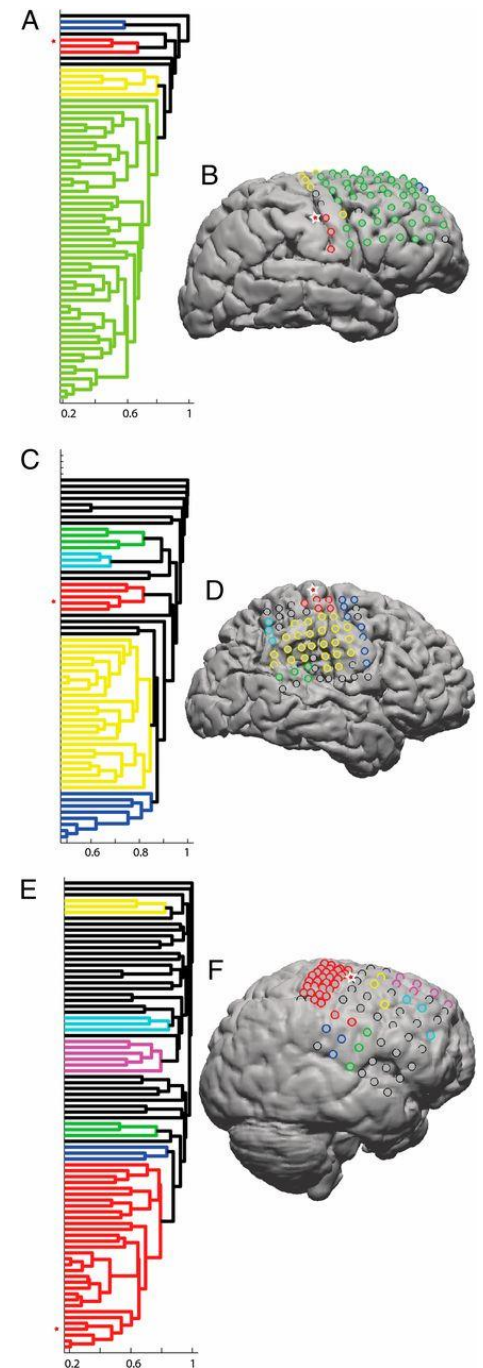
Results

- Written description of your research findings.
- Figures
- Tables
- Statistical analysis

Facts only!
No interpretation!

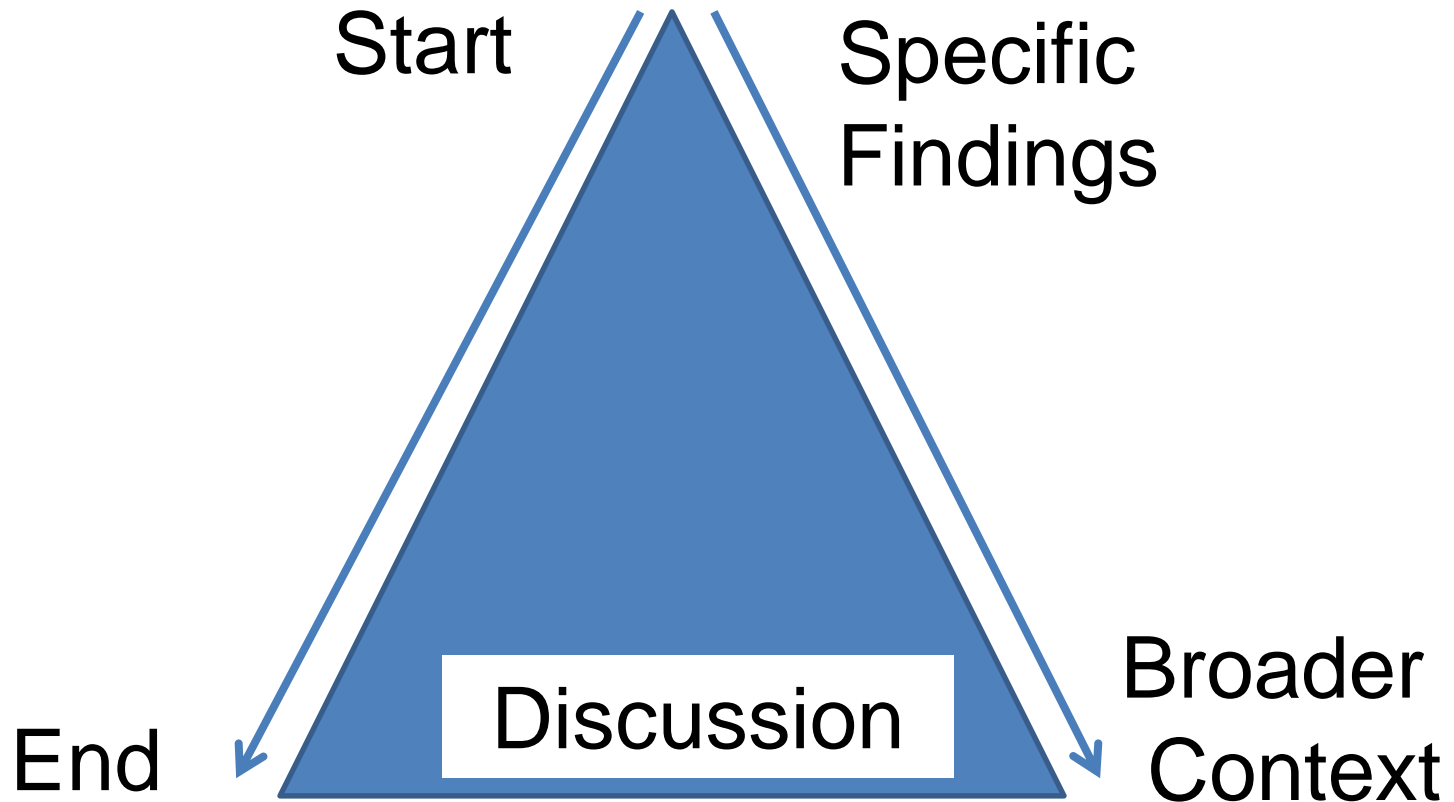
Creating Figures

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



Discussion

- Start with specific findings and their meaning.
- Broaden discussion with how current findings fit with previous data.



Acknowledgments

- Author vs. Acknowledgment?
- Value of contribution not high enough for co-authorship
- Examples: advice, ideas, suggestions
- Indicate funding source.

Professional acknowledgments only! This is not the place to thank parents or friends.

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 A was a function of B; A increased with increasing B | Causes, brings about Necessary (strong); mandatory, obligatory, essential |
| Associated | Necessary and sufficient (very strong) |
| Accompanied Interdependent, related, correlated | Influences (weak) (affects) A brings about a change in B (effects); A influences B |
| Proportionate, reciprocal, concordant | 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."

"It should be noted that..."

=

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

"Results were found through direct experimentation."

=

"WE PLAYED AROUND WITH IT UNTIL IT WORKED."

"These results suggest that..."

=

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

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

=

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

"Future work will focus on..."

=

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

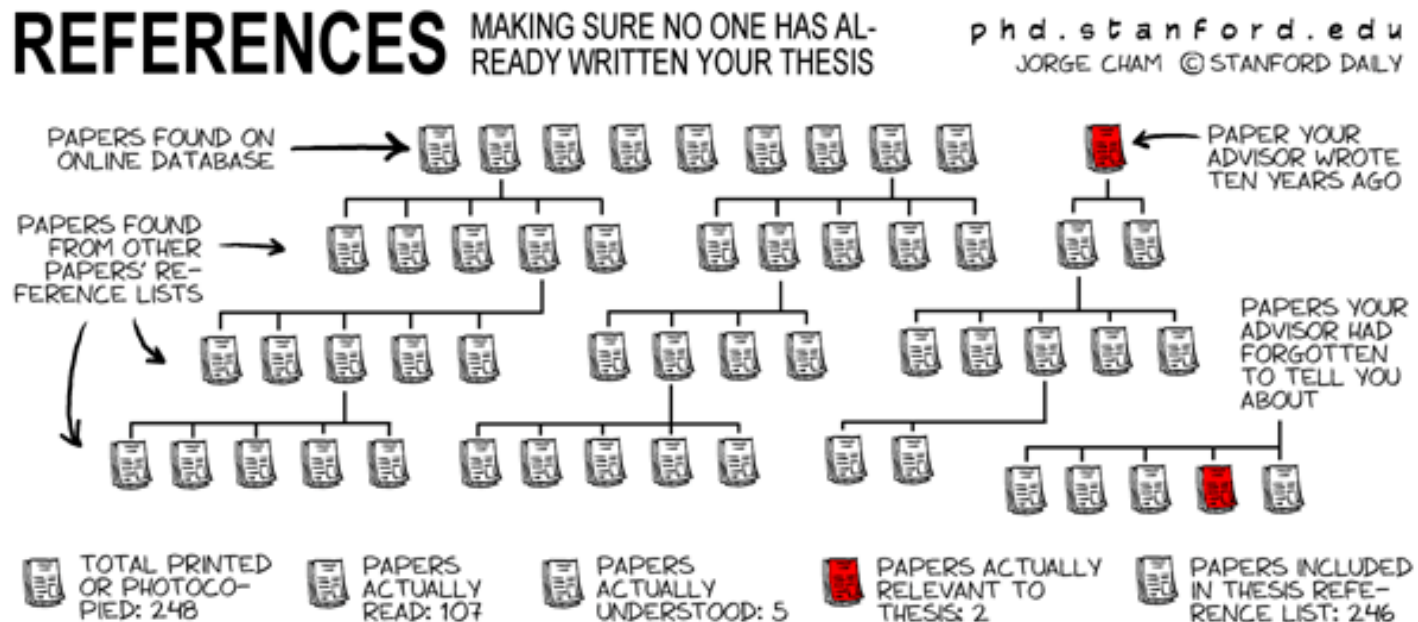
"...remains an open question."

=

"WE HAVE NO CLUE EITHER."

Citations

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



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

Reference Managers

Zotero

<http://www.zotero.com>

