



SCIENCE WRITING & ACS STYLE

Writing Support Desk



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WHY WRITE A SCIENTIFIC PAPER?

To share your own original research

or

To review research conducted by others

SCIENTIFIC REPORT aka LAB REPORT

- Describes conditions that led to findings that contribute to scientific fact
- Does not just introduce the research but also why findings are interesting, valid, acceptable, or important



SCIENTIFIC REPORT aka LAB REPORT

Sections usually include:

- **Abstract**
A summary
- **Introduction**
Purpose of experiment
- **Method**
How the experiment worked
- **Results**
What you found out
- **Discussion**
What the findings mean



ABSTRACT

- short summary of the work
- draws in the reader to engage with the full work
- Must be SHORT, so be concise

Problem & Relevance

- Background & motivation of the study
- Specific question or hypothesis addressed
- One or two sentences to set the stage for your study
- What were you trying to find out? Prove?

Methods

- How did you conduct the study?
- Give a brief overview of methods (the full detail is in the paper itself)

Key Findings

- What did you find out?
- Focus on the key/main findings
- Try to stick to no more than 2-3 points

Conclusions & Implications

- What are the broader implications of the study? Why does it matter?

INTRODUCTION

- Discusses the motivation for the paper
- Prepares the reader for the structure of the paper

Context

- Brief background of the relevant scientific context of the study
- Think of the context and significance as part of a "scientific narrative"

Need

- What is the motivation for the study? Why do this study?
- Works alongside the context to justify the study's value

Addressing the need

- How does your study address the need you established?

Structure of paper

- Preview the structure of the work to prepare the reader for what is to come
- A road map for your paper

METHODS

- How did you gather data?
- How did you analyze the data?
- Assume the reader understands the material



RESULTS

- What did you find out?
- Can use tables, graphs, and charts to visually represent findings
- Explain key trends, relationships and expected vs. unexpected findings



DISCUSSION

- Interpretation of your results in the context of known literature
- Assesses research & explains results
- Discusses limitations
- Compares to other literature in the field
- Explains applications in broader context



CONCLUSION

- Presents the outcome of the work
- Relates findings to the motivations stated in the introduction
- May interpret the findings more broadly or abstractly than in the discussion, relating to a broader context



TIPS FOR SCIENCE WRITING

Be clear and concise

- Use jargon sparingly
- Aim to inform, not impress
- Avoid wordiness (academic tone does not mean using big words, extra words, or complicated sentence structure)

Know your tenses

- Use past tense to refer to experiments conducted in the past
- Use present tense to discuss the reporting of results or information in articles
- Use future tense for proposals

Consider your audience

- Writing for a science audience? Assume they understand the material
- Do not provide excessive explanation

Avoid the first person

- Generally, do not use "I" or "we" unless appropriate
- Avoid "I think," "I believe," etc.

Avoid vague or extreme language and value judgements

- Don't use "proves" unless it is proven. "Suggests" or "correlates" may be more appropriate
- Avoid vague qualifiers: "very," "really," "several," etc.
- Avoid value judgments: "excellent," "awful," "good," etc.

ACS (American Chemical Society) CITATION STYLE

3 ways to cite in ACS:

- Superscript numbers¹
- *Italic numbers in parentheses (2)*
- Author/date (Lee et al., 2012)

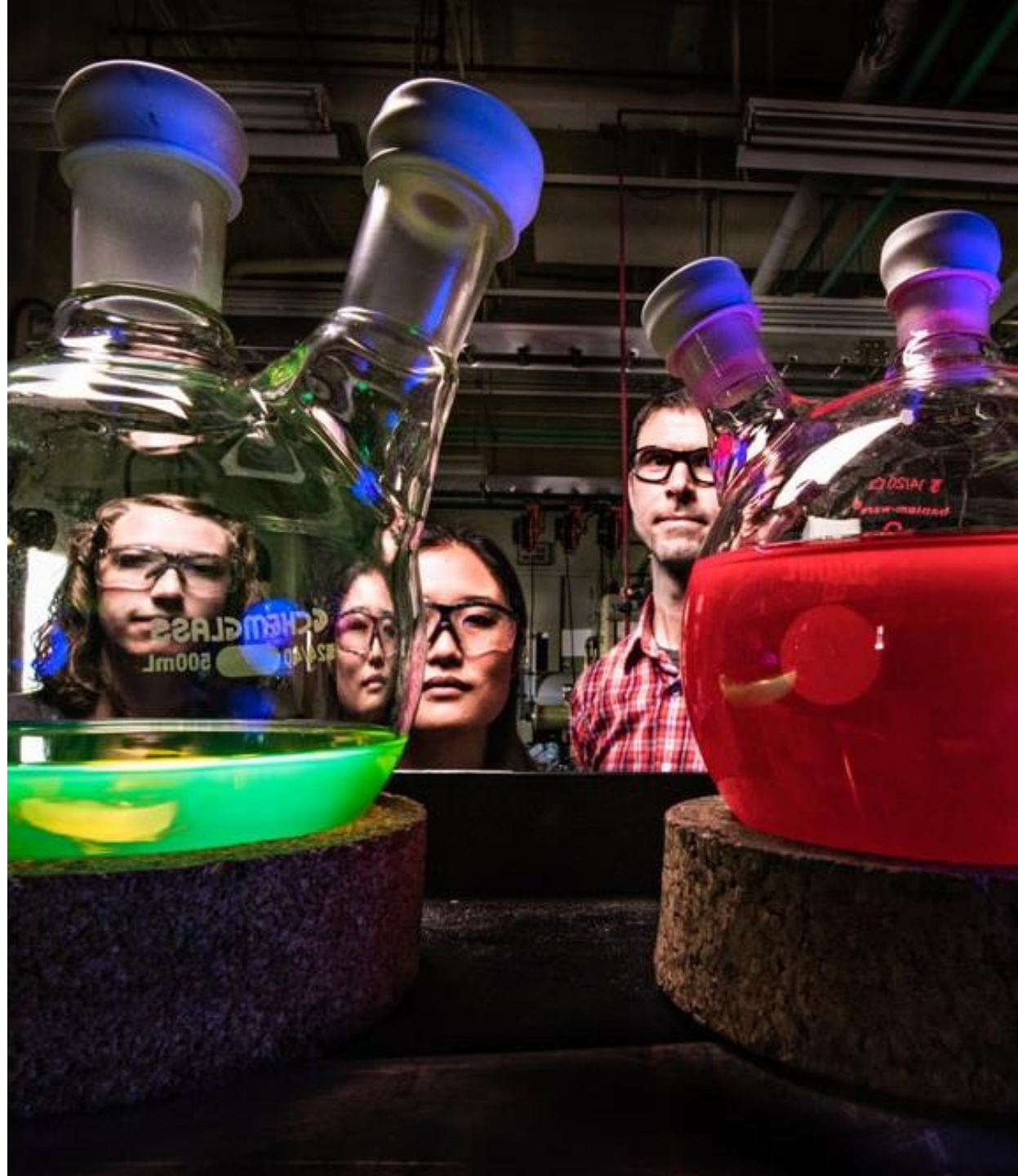
*for numbered citations, repeat the same number to cite the same work later in the paper (ex. source 2 will always be cited as 2)

*for author/date style, cite two authors as Surname and Surname. 3+ authors are Surname et al.



ACS Reference List

- All cited sources appear in the list
- Numerical order if using numbers
- Alphabetical order if using author/date
- Formatted with a hanging indent
- Uses abbreviated journal titles



ACS Reference List

- Author, A. A; Author, B. B;
Author, C. C. Title of Article.
Journal Abbreviation [Online]
Year, Volume, Pagination. URL
(accessed date)
- Fine, L. Einstein Revisited. *J.
Chem. Educ.* [Online] **2005**, 82,
65-111.
<http://jchemed.chem.wisc.edu/Journal/Issues/2005/Nov/abs1601.html> (accessed Oct 15,
2005).



QUESTIONS?

Remember, this slideshow and many others are available to download via the Writing Support Blackboard page.

Email writingsupport@uwindSOR.ca if you require access.