

Scientific Writing Tips

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Writing guidelines (based on common mistakes):

- Revise, revise, revise! No writing is ever perfect the first time through; write, read, and revise!
- Make your report thorough yet concise.
- Be specific.
 - *Bad:* Samples were ~~heated~~ in an oven overnight.
 - *Good:* Samples were placed in an **80°C oven for 8 hours**.
- Avoid unnecessary words and phrases.
 - *Bad:* ~~It has been reported that~~ air pollution 7 million deaths per year.
 - *Good:* Air pollution causes 7 million deaths per year [Ref 1].
- Avoid too many/uncommon abbreviations, and define abbreviations the first time used (with a few exceptions, below); abbreviations should be appropriate for your audience.
 - *Abbreviations that do not need to be defined:* Element names (Cu) and well-known units (m, ml, °C, K, etc.)
 - *Good abbreviations, when defined:* Instrumental techniques, certain chemicals that are more commonly/easily known by their abbreviation (e.g. 4-MP).
 - *Bad abbreviations:* Tylenol (T-ol), acetaminophen (AM)
- Use first-person active voice.
 - *Bad:* ~~A GC-MS was used to perform a scent analysis on garlic. Samples were prepared for analysis thusly: To a sample vial, 1 g of garlic was chopped and added.~~
 - *Good:* We analyzed the scent of garlic using GC-MS. We chopped 1 g of garlic and placed it in a sample vial for analysis.
- Use past tense for observations and methods.
 - *Bad:* Tylenol-brand tablets ~~contain~~ 5% less acetaminophen than advertised.
 - *Good:* Tylenol-brand tablets **contained** 5% less acetaminophen than advertised.
- Use present tense for accepted facts.
 - *Bad:* Tylenol ~~helped~~ relieve headaches.
 - *Good:* Tylenol **helps** relieve headaches.
- Avoid faulty or incomplete comparisons.
 - *Bad:* These ~~results~~ are similar to ~~previous studies~~.
 - *Good:* These **results** are similar to the **results of** previous studies
 - *Bad:* ~~Fractional distillation worked better.~~
 - *Good:* **Fractional distillation** worked better **than simple distillation**.

- Use the correct suffix: The suffixes *-graphy* or *-metry* typically indicate *techniques*; *-er* and *-ist* indicate *people*; *-ometer* and *-graph* typically *instruments*; and *-um* and *-am* indicate *data*.
 - *Bad*: The gas chromatography was used to analyze the samples.
 - *Good*: Gas chromatography was used to analyze the samples.
 - *Bad*: The chromatograph has two peaks.
 - *Good*: The **chromatogram** has two peaks.
- Use correct spelling, grammar, and punctuation. See *Elements of Styles* (Strunk and White) for more detail.
- Species names and Latin words are written in italic (e.g. *Allium sativum*, *in-vivo*).
- Writing resources at Western:
 - Writing and Learning Commons
 - WCU Writing Support
 - Peer review: Have a friend or roommate provide feedback on your report before you turn it in.

Examples adapted from: *Writing Papers in the Biological Sciences* by Angelika H. Hofmann. Oxford University Press 2016 (2nd ed.)