**Scientific Writing Tips**

**Be more thorough than you think that you need to be.** A big problem in student writing is not providing enough information for the readers to follow your thought process. For example, students might write “Sugar content of leaves likely increased because of increased light exposure.” However, they have not explained to the reader *why* sugar content in leaves would increase with light exposure. A better sentence would read “During photosynthesis, light is used to convert carbon dioxide and water into sugars; thus, the increased sugar content of leaves is likely due to increased light exposure.”

**Be as specific as possible.** For example, “Sharks are important on coral reefs” can be improved by writing “Sharks are apex predators in the food web and their presence structures communities of fish that live on coral reefs.”

**Define everything**. Do not use abbreviations until you have explained them! For example, “Many examples of mutualistic relationships exist in ENP” could be confusing. You need to give the reader more information! Try “Mutualistic relationships, in which two organisms benefit from their interaction with each other, are common in Everglades National Park (ENP).”

**Claim as little as possible.** Science is unique as a discipline. We are always striving for the truth, but are careful not to make blanket statements because we often find exceptions to so-called “rules”. Consider, for instance, how we used to think gene expression was directly determined by the genes present in your DNA but the new field of epigenetics has found that environment also affects gene expression!

**Always cite your sources.** Unless the information is common knowledge (e.g., Everglades National Park is located in southeast Florida) you must cite your sources using primary and secondary literature. Many of the example sentences above are missing appropriate citations! A good rule-of-thumb is that you should have a citation for any fact that you include in your paper.

**Work on the *flow* of your writing.** The reader should be able to easily follow your ideas. You need to lead them logically from one concept to another. Flow can be between sentences, between paragraphs, and even between sections in a paper. To keep up flow in a paper, always consider the overall story that you want to tell in your writing. Try to maintain the same subject throughout a paragraph. New idea? Start a new paragraph, but make sure that you connect these new ideas with previous concepts.

**Be careful with your word choice.** Avoid using complicated words! You don’t need to use fancy words to sound smart. Often, people write “utilize” when “use” would suffice. If you can, choose simpler words to get your point across to the reader.

**Do not use contractions.** In scientific writing, convention dictates that you write “do not” instead of “don’t”.

**Common Grammar Problems**

**Use active voice instead of passive voice.** Active voice emphasizes the subject of the sentence performing an action; passive voice shows the subject experiencing the action. “Humpback whales migrate to stay in waters above 0°C” is a stronger sentence than “Waters above 0°C were migrated to by humpback whales.”

**Avoid run-on sentences.** Run-on sentences occur when (1) independent ideas (sentences) are not connected by a conjunction (and, or, but, *etc.*), and (2) independent ideas (sentences) are not separated by punctuation when they should be. These sentences are often really long and difficult to read. For example, “Wolves run in packs that can be up to 20 members in a group they eat more together as a group they hunt better as a social group with commands from the leader.” You can add in conjunctions… “Wolves run in packs that can be up to 20 members in a group **and** they eat more together as a group **and** they hunt better as a social group with commands from the leader.” However, this sentence is too long and awkward. Instead, some ideas will have to be separated from each other: “Wolves run in packs that can be up to 20 members in a group**.** **T**hey eat more together as a group **and** they hunt better as a social group with commands from the leader.”

**Avoid comma splices.** Comma splices usually occur with run-on sentences. Often, students try to join two independent sentences together with a comma. Read the sentence aloud; if you took a breath, you might need to replace the comma with a period. For example, “Fish swim in large schools, they orient in the same direction” should be “Fish swim in large schools. These fish orient themselves in the same direction.”

**Effect** is the **noun**. **Affect** is the **verb**. Light affects photosynthesis; the effect of light on photosynthesis is sugar production.

**Lazy Writing**

**Impact** does not actually mean “change”, “effect”, or “affect.” Impact is a description for when two items collide. Try describing the actual effect or change instead!

**It is, there are, there have been, *etc.*** Usually this sentence structure results in the passive voice. For example, “There have been many studies that found bears use pine trees to scratch their backs” is stronger when changed to “Bears use pine trees to scratch their backs (citation).”

**Important, clearly, clearly important, sheds light on, *etc.*** Don’t just tell readers something is important; *show* the reader in your writing. Place the information in context to explain *why* this new concept or idea is important.

**Always**. This problem ties into word choice and claiming as little as possible. Always is a hard statement to prove!

**This**. “This” should be followed by a noun.