Lab reports are written in formal, scientific style using the following style guidelines:

**Audience**

- Write your lab report for someone who is familiar with the scientific field of study but has not performed this experiment.
- Remember that you are writing a report, not a guide, so be sure to avoid the imperative tense. Do not say, “First, measure the substance.” Instead, use the past tense to show what you did: “The substance was measured…”
- Do not copy from the lab manual instructions. That would be plagiarism.

**Voice**

- Check with your professor for his or her preference on point of view. Generally speaking, however, in Chemistry and Biology avoid using the first person; in Physics, students may use the first person if they desire.
- Draw the reader in and connect your ideas with transitions such as the following:
  - Consider
  - Contrast this with
  - The reader is warned
  - Let us suppose
  - Before we turn to
  - Indeed, we shall see
  - A cautionary remark
  - Remember that
  - Seeing this, we should
- Conveying conviction and authority in your word choices can also draw your reader into your report. Avoid using words such as “may”, “might”, “could”, and “would”, especially when referring to historical or absolute facts.

**Language**

- Avoid casual figures of speech and clichés. *See the Academic Audience handout for examples.
- Choose words with appropriate connotations. Words that seem to be synonymous can actually have different implied meanings. Consider the different meaning of “The scientists left their work” and “The scientists abandoned their work.” “Abandoned” has a negative connotation and implies that the scientists will not return. Is that what is needed and intended?
- Try to vary your word choice:
  - first = initial
  - takes place = occurs
  - start = engage, commence, begin
  - place = location
  - takes the form = is represented by
  - find = detect, determine, establish
- *Tip*: When you notice a phrase that you use repetitively, use the universal search function [Ctrl+F or Command+F] on your word processor to highlight each occurrence. Then make changes as necessary.
- Try to vary your sentence structures and lengths. Start by reading your paper aloud. Highlight long sentences in one color and short sentences in another color. Then rework your sentences until you find a pleasing balance between longer smooth sentences and shorter decisive sentences. Avoid repetition and excessive complexity.

---

*Examples are from the *Reviews of Modern Physics Style Guide.*
Clarity

- Be sure to use specific vocabulary, not generalized concepts. Describe with concrete nouns and verbs, and appeal to the senses rather than using abstract ideas.

  **General:** The theory of relativity addresses many aspects of the cosmos.
  **Specific:** The theory of relativity states that the measurements of time and space are relative to the velocities of the observers.

- The writing style for lab reports is clean and direct. The simplest, most efficient way to express an action is with a concrete verb. For instance, instead of “present indications of” try “indicate.” And instead of “conduct an investigation” try “investigate.”

  **Wordy:** The reason that the researchers used the alternate design is because...
  **Economical:** The researchers used the alternate design because…

### Common Errors in Lab Reports

<table>
<thead>
<tr>
<th>Uncertainty Analysis Omitted</th>
<th>Including Results but not Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Problem:</strong> Students often leave out the uncertainty analysis or include a surface-level sentence without solid analysis.</td>
<td><strong>Problem:</strong> Students often think that including data is good enough. They may describe the data, but that is not the same as analyzing the data.</td>
</tr>
<tr>
<td><strong>Solutions:</strong> Provide the estimated certainty for any given measured value, and calculate uncertainty for any value calculated from a measured value. Discuss how limitations of equipment and/or procedure produced the estimated uncertainty, and demonstrate ideas for how uncertainty could have been minimized.</td>
<td><strong>Solutions:</strong> In the data/results section, present the data in charts and provide a narrative description of the features of the data, including trends, shapes of graphs, and limiting cases. In the analysis/discussion section, you might discuss the implications of data by calculating based on data, comparing data to externally known values, connecting the quantitative data with qualitative concepts, or comparing data with theory. In other words, take the data to the next step by thoroughly discussing the implications of your analysis.</td>
</tr>
<tr>
<td><strong>Tip:</strong> When comparing two values (either experimental values or an experimental value with a theoretical value), they should be considered to agree if the difference between the values is less than the uncertainty in values.</td>
<td></td>
</tr>
</tbody>
</table>

### Undeveloped Predictions

**Problem:** Students sometimes skip the prediction altogether, include a guess instead of a prediction, or fail to base their prediction on established theory or calculations.

**Solution:** Your prediction must be supported by theory and, if applicable, calculations. Be sure to show all calculations you include. Don’t skip to the final equation or make a guess. Show your work.

### Unsupported Conclusions

**Problem:** Students sometimes present conclusions that are unsupported by the data.

**Solutions:** Make sure your conclusion is clearly and explicitly supported by your data, leaving no gaps or guesswork for your reader. Don’t assume your reader will connect the dots or search for data to arrive at your conclusion.