Laboratory Report

1. **Use passive voice**.

2. Do not use first or second person, singular or plural.

3. Write complete sentences using the past tense (usually).

4. Graphs and diagrams must have titles and be clearly labeled.

5. Reports **will** have the following sections:

   Title Page: With the date the report was submitted.

   Abstract: A short description (2-3 sentence) summarizing the work done in the lab. This section is best written last.

   Introduction: This section includes background of a problem, theory of a technique, theory to be investigated, all balanced reactions of a synthetic procedure, reaction mechanisms, side reactions, or general discussion of an analytical procedure. It should answer the following questions: What is the goal of this lab? What major chemistry concepts are involved in this lab? How do these concepts relate to the goal of the lab? References are indicated as numbered superscripts throughout this section.

   Experimental Section: A concise summary of the experiment and/or calculations done in the lab. Include what **you** did and saw. Give important details. If the purpose of the experiment is to learn a technique, give details pertinent to the technique. In subsequent reports that detail may be omitted. Include all problems and errors. Quantities are given as a mass (or volume) and moles and concentrations of all solutions should be given. This section should not just be a repeat of the instructions in the laboratory manual, but provide enough information such that another student could repeat your calculations and obtain the same results.

   Results: Data collected and derived quantities. These could be the following: yield, percent yield, melting (boiling) ranges, spectroscopic data (IR, NMR, UV-vis), chemical tests (and reactions), and data collected using any instrument. Sample calculations are given if they are new to you or are part of the purpose. The experimental results should be presented in a form that is easy to read, such as a data table or a graph.

   Discussion: A connection should be made between your results and the introduction. Did you make the desired compound? Did the technique work as expected? How do you know? What could have been done differently (better?) and how could we improve this experiment. What additional questions did this experiment suggest? New ideas can also be recorded here.

   References: Use JACS format.

Sometimes **Results** and **Discussion** are combined, but if they are, a **Conclusion** section is usually added.

This follows the format of an article in the ACS journal *Inorganic Chemistry*:

Inorganic Chemistry Guidelines:

"The preferred arrangement for manuscripts of full Articles is as follows: title page, abstract, Introduction, Experimental Section, Results, Discussion, footnotes (including both explanatory notes and literature references), tables, schemes, charts, captions for figures, and figures. Footnotes consisting of explanatory notes should be kept to a minimum. Pages must be numbered consecutively, beginning with the title page and ending with the figures. Figures, tables, schemes, and charts should be numbered with Arabic numerals."

The general guideline to follow concerning how much to put in a report and how much to leave out is that a person of your background should be able to pick up your report and repeat the same work without having to ask any questions and get the same results.