

Scientific Writing

Resource: <http://www.an.psu.edu/jxm57/irp/sciwrit.html>

With regard to presenting your investigations, one of the objectives of this laboratory course is to develop your writing skills. In science, writing is the most important means of communicating research findings. In most cases, scientists report the results of their research activities in scientific journals in a rather standard scientific paper format. In this laboratory program, you will practice writing in this scientific format and style.

As you carry out this I.R.P., you will make observations, ask questions, and propose hypotheses. You will conduct experiments using procedures that are designed for you in this Web site. You will record results, design tables and graphs to present your data in a logical and organized format. You will interpret your results and come to conclusions based on your hypotheses. This process will be reflected in your independent construction of a scientific paper, which is the culmination of this I.R.P. project.

A scientific paper usually includes the following parts: a **Title** (statement of the question or problem), an **Abstract** (short summary of the paper), an **Introduction** (background and significance of the problem, a **Materials and Methods** section (report of exactly what you did, a **Results** section (presentation of data), a **Discussion** section (interpretation and discussion of results), and **References** (books and periodicals used). A **Conclusion** (concise restatement of conclusions) may also be included.

Since performing this I.R.P. will be a collaborative effort (students will be working in teams of two), you and your teammate will share information for the *Materials and Methods* and the *Results* sections of your reports. However, the *Introduction*, *Discussion*, and *References Cited* (or *References*) sections *must be the product of your own personal library research and creative thinking*. If you are not certain about the level of independence and what constitutes plagiarism in this laboratory program, ask me, your instructor, to clarify the class policy. Plagiarism will not be taken lightly.

A more detailed description of each section of a scientific paper follows. As you write your paper, clearly label each section (except the title page), placing the title of the section against the left margin on a separate line.

- **Title Page and Title**
- **Abstract**
- **Introduction**
- **Materials and Methods**
- **Results**
- **Discussion**
- **References**
- **Conclusion**