

## **Lab Reports/Scientific Papers**

**Purpose:** To present results of a study, experiment, or literature review.

The general flow of a scientific paper often follows the overall structure of a lab report.

### **Title:**

Purpose: To allow researchers to identify a potential resource

- Often overlooked, but very important
- Concise and representative
- Maximum of 10 words
- Uses recognizable keywords

### **Abstract:** First section, but usually written last

Purpose: To allow researchers to determine if they should read the entire report

- 1 paragraph (100-200 words)
- Brief and comprehensive summary of important aspects (purpose of the report or paper, data is presented, overall conclusions)

### **Introduction:**

Purpose: To define the subject of the report

- Why was the study done?
- Provide background
  - Relevant literature and studies
  - Trace development of ideas
- Specific purpose of the study
- Specific hypotheses
- Experimental design

### **Materials and Methods:**

Purpose: To provide enough detail for the reader to understand the experiment, study, or review

- What materials were used?
- How were the materials used?
- When and where was the study done? (This is particularly important for fieldwork)
- Describe special equipment (provide a sketch, if necessary).
- Outline the procedures followed (the student may be allowed to refer reader to another text for detailed procedures)
- Be careful not to overwhelm the reader with unnecessary details

**Results:**

Purpose: To summarize the data obtained in the study. Allows readers to see the actual data and form their own opinions.

*Do not discuss interpretations or implications here.*

- Concentrate on general trends and differences, not trivial details
- Often written first
- May include figures and tables

**Discussion:**

Purpose: To contextualize and critically analyze the study

- Interpret results
- Speculation is acceptable, when identified as such
- Relate results to previous research
- Identify flaws in your research and suggest solutions
- Recommend areas for further study
- Clearly state whether you accept or reject your hypothesis
- Based on your results, explain the logic behind the decision

**References:**

Purpose: To provide information that allows the reader to locate the references that are cited in the text

- List only the references referred to in the text
- (Standard referencing info).

**Some Other Points:**

Figures and Tables:

- Should be self-explanatory
- Must be titled and numbered
- Titles should be concise, informative, and representative
- Label all columns, rows, and axes
- Legends: if necessary, include a legend explaining symbols, abbreviations, or special methods
- Do not present the same data in multiple formats