

## Lab Report Checklist

This document is intended to be used as a resource for writing research style biology lab reports. Check each section of your paper, and reference this document to make sure you include **all the information** required for each section. More information on each section can be found on the U of R Biology Reports page found [here](#).

### Title

- Does your title **specifically and completely** indicate what the study was about?
- Avoid vague titles. e.g., “Biology XXX Lab Report”

### Introduction

- Central Purpose/Hypothesis
  - Does your paper **clearly and completely** summarize the goal(s) of the study?
  - Is your **purpose or hypothesis** question stated near the end of the introduction?
- Rationale
  - Is your rationale **clear and specific**?
  - Does your rationale provide a complete justification for the stated purpose (i.e., **why** is it important, what information do we gain from the study?)
- Background
  - Are all **relevant background** concepts and key terms clearly explained or defined?
    - Assume the reader has limited knowledge on the subject. If you include acronyms, **define them first** (e.g., operational taxonomic units (OTUs)).
    - Technical jargon should be used but it should be **defined**
    - Make sure the background used is relevant to the question/study. Avoid “filler content” that may seem relevant but is not directly tied to the story you are telling/question(s) you are answering

- Does this section provide the reader with sufficient relevant background information on the topic being discussed?
- Does this section clearly present how the information is connected to the purpose?
- Sources
  - Are all statements of fact supported with appropriate references or examples? (think **in-text citations**)
- Study Design
  - Do you provide a **clear and concise** overview of the study design?
  - Does this information come **after** the **purpose** statement?

### Materials and Methods

- Are all methods clearly described in a logical manner with appropriate detail?
- Did you include factors that **did not** influence the results? If so—get rid of them.
- Is this section well organized with no repetition?
  - Use sub-sections if necessary
- See <https://moodle.uregina.ca/urbiolabreport/lab-report-structure/methods> for more details on this section.
- If you feel like you are simply listing items in a paragraph (e.g., contents and final concentrations of PCR), consider using a table or visual diagram of the steps instead

### Self-contained Visuals

- Are all visuals well-constructed and self-contained? (i.e., do they indicate the questions addressed, the major aspects of how the question was addressed and the most important results?) Are the visuals easy to understand? Do they summarize the results?
- Do they include any statistical analyses in a way that is easy to comprehend?
- Do you have multiple visuals that are repetitive (you **do not** want this)? (i.e., multiple visuals that provide the same/similar information).
- These may be set/embedded within the text or may follow the end of the body of the paper (after the references)

### Results/Discussion<sup>a</sup>

- Analysis of Results
  - Can the reader easily follow all (or almost all) of the important trends/results?
  - Does the analysis **accurately and completely** address the study's purpose?

- Are key trends/results described using **clear, specific and supported statements**?
- Do you use **primary sources** to support or discuss your analysis?
- **Central Purpose**
  - Does the discussion begin by accurately interpreting and clearly relating the results of your experiment(s) to the central purpose/question/hypotheses?
  - Do you use **primary sources** to support or discuss your analysis?
- **Interesting or Unexpected Results**
  - Are any interesting and/or unexpected findings discussed logically?
  - Did you consider biological context(s)?
  - Do you discuss other studies that support or contradict your research findings? How are they supported? How are they contradictory?
- **Contextual Support**
  - Do you critically assess how your study results compare/contrast with the current understanding of the field?
- **Overall**
  - Are all statements of fact or opinion supported with references, data or examples?
  - Are facts distinguished from speculation and are they appropriately cited?
  - Is your data analysis and statistical significance appropriately described?
  - Are your visuals/data used appropriately and effectively?
  - Do you reference your visuals in-text? (e.g., “Plant growth increased 2-fold (Figure 1).”)
  - Are you **only** using **primary and secondary** sources? (The answer should be **YES!**)

## Conclusion<sup>b</sup>

- Does this section capture the focus on the research paper?
- Do you summarize the main aspects of the research paper by paraphrasing your purpose? (i.e., **do not** cut and paste your purpose—be sure to reword it)
- Do you provide recommendations as to how the study can be extended? What other things/experiments can be done to add more knowledge to your field?
- Do you connect the main results back to the introduction? (i.e., what’s the big picture?)

## Citations and Reference formatting

- Are all references cited both **in-text** and in your **references cited** section?
- Are they complete?
- Are all citations in the correct format?
  - <https://moodle.uregina.ca/urbiolabreport/lab-report-structure/references>

## Good communication comes with paying attention to detail

- Is the information presented in a logical order?
- Are all paragraphs focused and coherent?
  - Generally: One thought/trend, one paragraph
  - Include an informative topic sentence that lets the reader know what is being discussed in each paragraph
- Are all statements made specific and succinct?
  - Try not to be wordy or use casual (conversational) language
  - Keep it simple to understand
- Are you using proper verb tense?
- Are you paraphrasing correctly?
  - Make sure you understand what plagiarism is
- Do not include direct quotes in lab reports
- Did you have time to edit your document to check for spelling and grammatical errors? (**hint:** find a peer review partner in your class, this can be very helpful for both parties!)
- Did you meet all style requirements for your paper?
  - Total page/word limit observed
  - Where visuals are included
  - Reference format
    - Tip: get a citation manager, and it will format in any style required for scientific writing; be sure to cross reference your referenced cited section and check for any formatting errors (often small mistakes need to be fixed!)
- Is your final paper organized and professional?
  - tables are not split across pages
  - section headings are clear
  - species names are in italics
  - no numbering or bullets

<sup>a</sup> Some professors will ask that you combine your Results and Discussion sections

<sup>b</sup> Written if the Results and Discussion sections are combined