

Title of the progress report

Name of the student

A progress report submitted to
The Department of Cell Biology and Neuroscience
Rutgers University

Written under the direction of
Dr. Research mentor

A sample template for progress report

Purpose of progress report: to show that you have mastered the scientific process.

You understand the purpose/significance of your study, you can formulate a workable hypothesis, you can analyze your data qualitatively and quantitatively, you can troubleshoot your experiments, you can draw logical conclusions based on your data and you can communicate your findings effectively.

Overall writing format: DOUBLE-SPACE with font size no less than 12 in doc, docx or pdf

Progress report format:

Total: double-spaced 10 pages

Suggested format:

Abstract: 1 page (summarize the results/observations/troubleshooting of your project)

Introduction: 2-3 pages (literature relevant to your research)

Materials and methods: variable (not included in the page count)

Results: 3-4 pages; organize data/observations/troubleshooting strategies/expected results in figures and tables. All figures and tables should have detailed figure legends and labeling.

Discussions: 1-3 pages (compare research data with literature, discuss expected results or propose future directions/experiments/troubleshooting strategies)

References: 1 page

***Note:** for students in 201/202: only 2 pages of Results and 1 page of Discussions are required; total page number for report: 6-7 pages.

Components of your progress report:

(A) Title: should describe the purpose and/or the conclusion of your project. Use the appropriate title page for your thesis.

(B) Abstract: A good abstract will have the following points in the following order:

1. Purpose of your study and/or the significance of the molecule you are studying (or state your hypothesis).
2. Summarize the results of each major experiment. Do not include experimental details unless they are novel findings.
3. Conclusion of your project. What do your results contribute to the scientific field or possible future implications (studies) that can be derived from your results.

(C) Introduction (should be divided into subsections with meaningful subtitles)

-A generic format is as follows (notice that this is an upside-down triangle format, going from broad to specific):

- The physiological significance of your study.
- The molecular mechanisms underlying the physiological phenomenon that you are interested to study.
- The current knowledge on the molecule (or a part of the process) that you are studying.
- What additional knowledge is needed (or what additional questions can be asked) for this molecule (or part of the process).
- What experiments (or experimental approaches) you are proposing to answer the above question (list the major experiments in your lab report). State your hypothesis.

(D) Materials and Methods

- List the procedures carried out in your project.
- Include pictures or diagrams to explain your procedures whenever you can (a picture is worth a thousand words).
- If you have pictures or diagrams, you MUST have figure legends describing them.
- Use a flowchart, table or diagram to summarize your experimental approaches in your project if possible.

(E) Results:

1. Organize your results into subsections with meaningful titles that help the readers to predict what this subsection is about.
2. Use tables to summarize your qualitative and quantitative results. Whenever you can, be quantitative in your data analysis (ie. error bars, statistical significance, number of times you have repeated the experiments).
3. Discuss ALL presented figures. Each figure MUST have a clear figure legend that describes what the figure is about. When you discuss the figure, use arrows to show specific details that you have discussed in your results (don't forget to explain what the arrows mean in your figure legend).
4. For pictures of DNA and protein gels, show labeled molecular weight standards at the same size as your gel. Label each lane with appropriate names instead of numbers or letters whenever possible. Label bands of interest on your gel that you are discussing in the text.
5. For cell staining/labeling micrographs, show scale bars and label each image panel with names rather than numbers or letters whenever possible. Make sure that the features you want the readers to see are clearly visible on your picture.

6. For graphs, show error bars, number of trials (n) and statistical significance analysis.

7. What to write in results:

- Discuss ALL figures

- For each figure, include the following discussions:

 - Summary of concepts/purpose behind each experiment discussed in the figure

 - state the obtained results, compare them with the predicted results (your hypothesis) and/or literature. Try to be quantitative in your description of results whenever possible (ie. percentage of cell population, number of neurites).

 - If there is total agreement, confirm that you have achieved the specific purpose for that experiment.

 - If there is any discrepancy, discuss the differences and the reasons for the differences. Discuss that, even with these discrepancies, did you achieve the specific purpose for that experiment.

 - If an experiment did not work, discuss potential reasons and plans of troubleshooting.

 - If your results are novel, discuss why and how they are different from what is known in that area so far.

(F) Discussion

-A generic format for discussion is as follows:

- State the purpose of your study (why you are carrying out your studies and what is your hypothesis).

- State whether your overall experiments have achieved the purpose. Summarize the contribution of each major experiment to your overall goal.

- Include an explanation of why do think you have or have not achieved your purpose.

- How do you think your findings contribute to the current understanding of the studied process or molecule.

- State experiments or experimental approaches that you think would improve the current experimental design and/or further our current understanding of the molecule or of process you are studying.

(G) References:

-put your references in alphabetical order.