Investigative Shadowing
Lab Journal Questions

The following questions are to be answered directly in your lab journal. These questions are meant to guide you through the research process and help you collect specific information about your project that will be used to prepare your presentation. Please answer all questions using the resources available to you, including the library, your mentor, and any materials provided by your mentor.

Project Information

What is the title of your project?
Where is the project located?
What is the name of the lab or institute that is conducting the research?
Who are the principle investigators (PIs)?

Abstract/Overview

What are the project objectives and goals?
In one or two sentences, briefly explain the experiment.
What new information is hoped to be gained by doing this project?
Why was this particular approach chosen?
What other approaches to gaining the same information are there, if any?
Who cares about this objectives and answers to this research?

Literature Survey

What is the general subject that this project is associated with?
Find at least one journal article about the project’s subject. Each group member must find a different article.
What Journal is this article published in?
What is the major contribution that this article describes?
What current research is being completed in a similar problem?
Have you looked at the references of any literature found?
Lab Culture

What are some of the safety rules?

How are you going to be accountable for this project?

What is your timeline?

What needs to be completed?

Theoretical Methods

What are the governing equations, if any, that govern the physics behind this experiment.

Are there any simplified equations used to make any theoretical predictions?

What are the assumptions used to make these theoretical predictions?

Are there any other important equations that describe the behavior of the experiment?

How does the experiment differ from theory?

Experimental Methods

What materials are used in the experimental setup?

If alternative materials are available, why were these materials chosen?

Is there any special equipment used in this experiment and what is it used for?

How are measurements and data collected from the experiment?

Describe the experimental procedure.

What will be measured?

How long will it take to get measurements?

Cost and Budgets

What is the cost for each piece of equipment used?

What is the cost of any construction materials needed?

What other research costs are there for this project?

How will the project be funded?
Data Analysis

What software is used to process the data from the experiment?
Are there any parameters that need to be computed from the collected data?
Include sample calculations if any additional equations are used.
What are the potential sources of error?
What is a reasonable amount of error for this experiment?
Is the error you found in the experimental data within a reasonable amount?

Conclusion

What were the major results of this investigation?
What is the significance of these results?
Can these results be used to improve future applications of this subject?
What is the next step in this research?
What potential future experiments can be conducted?

Presentation

Who will be your audience?
How many team mates will you be presenting with?
How long will you need to present for?