**Appendix 4**

**Research Proposal Presentation Guidelines**

**20 pts**

**Instructions:**

1. **Presentation Format:** Google Slides or Powerpoint/Keynote
2. **Each group will give a 15-20-minute oral presentation** (with an additional 2 minutes for questions) to the class on their proposal setup and results using the following format:
3. **Background on the importance of the chosen cell line and question**
	1. Provide literature evidence to show the importance of the molecule of interest/cell dynamics
	2. Include images/previous data to explain your project (serves as a visual aid).
4. **State the Research Question**
	1. How does this relate back to the background information on your molecule of interest/cell dynamics?
	2. Justification for your reasoning? Connection to the literature?
5. **State your Hypothesis**
	1. Should be based on what you proposed in the background and research question categories.
6. **Experimental Project Design and Methods**
	1. What experiments were done to test the hypothesis? Brief overview of the protocol you plan to follow.
	2. Materials and procedure (should include controls, confounding variables, etc.)?
7. **Final Results**
	1. What do you expect to observe? What did you observe after completing the experiment? Did the experiment(s) answer your hypothesis and overall question?
		1. Present all data walk the audience through your findings.
8. **Future Directions and Implications**
	1. What are the implications of this experiment to the larger biological framework?
	2. How does the information connect back to the background information presented?
	3. Future directions? What did you learn? How would you improve your experiment for next time?

# Molecular Biology Presentation Evaluation Rubric

1. Adherence to time guidelines (15-20 min) and Organization of Presentation/Preparedness

 none average excellent

 0 0.5 1 1.5 3

2. Background information and big picture (question)/idea and why it is important and Hypothesis

none average excellent

0 0.5 1 1.5 3

3. Clearly stated Hypothesis that connects with background information and importance

 none average excellent

0 0.5 1 1.5 3

4. Clearly defined conditions (controlled variables), controls, and experimental setup to answer the main question

none average excellent

0 0.5 1 1.5 3

5. Clearly stated results (minimum of two experiments) and demonstration of how the data relates back to the main hypotheses and overall question

none average excellent

 0 1.5 2.5 3.5 5

6. Effective use of visual aids/ability to interest audience

none average excellent

 0 0.5 1 1.5 3

**Total Score:**

# Comments: