Peer Review is an essential part of the scientific process. All scientific journal articles and grant applications are sent out for double blind peer review, where the reviewer carefully studies the experiments, results, and conclusions made in a manuscript. The reviewer then offers critiques of the journal article to help clarify experimental findings or suggest further experiments. Rigorous peer review of scientific findings has been directly mandated by the government (www.whitehouse.gov/sites/default/files/omb/memoranda/fy2005/m05-03.pdf). Peer review is also an important writing process, because it challenges you (the reviewer) to consider another person's writing and decide what constitutes a well-written report.

Peer Review evaluation guidelines: 1) the initial version of the manuscript should be submitted electronically using the digital drop-box feature on Blackboard. 2) Peer review will be a double-blind process. All original drafts should be submitted to Blackboard for distribution to student peer reviewers. Once distributed, peer reviewers will have **ONE WEEK from when you receive the manuscript** to review the manuscripts and make comments. During this time, the instructor(s) will also review your draft.

The peer review process: As you begin to review your peer's laboratory report, please keep in mind that the author had the lab report guidelines as a resource. That means everything in the lab report guidelines should be addressed in the report. Furthermore, the author's writing style (their scientific literacy) should reflect the influence that comes from reading the assigned scientific journal articles and laboratory resources. As you review, please:

- o Use the lab report-grading guide as a template as you review the report. You may also consult the grading rubric for that lab report, if available. You may want to additionally review your own lab report for side-by-side comparison.
- o Check to make sure that the lab report has all of the necessary components and that the proper information is included in each section.
- o Look over the formatting of the figures, tables, and citations and offer suggestions for potential improvement.
- o Mark minor corrections directly on the report using red ink or enter the corrections directly into the word document using track changes. Focus less on grammatical errors and more on sentence structure, writing style, information conveyed, and the overall "story" of the lab report.
- o In addition to embedding comments into the reviewed lab report, type a separate review document for expanded comments. This document should have a separate title page, which can be removed by the instructor so that the reviewer's identity remains unknown to the author.
- o You need to thoroughly and carefully examine the style of the paper. Is the writing style scientific? Is the language used precise or is it too "wordy"? Does it include enough detail? Are citations properly included?
- o You need to consider the logical arguments made in the paper. Does the report discuss the results or does it only report the raw data? Is the student correctly analyzing their results? Are the results presented in a logical and easy to understand fashion?
- o You need to examine the entire "story" of the paper. Does the introduction describe the information necessary to interpret the results and discussion? Do the materials and methods contain enough (but not too much) detail for another scientist to repeat the experiment? Do the results and discussion match with the introduction and overall theme of the lab report? Are any conclusions drawn in the manuscript drawn from the actual experimental data? (Many other potential questions could be addressed here – think like a critical scientist!)
- o Please phrase all comments in a constructive manner, but be honest in your appraisal of the work you're reviewing.
- o Do not feel bad about providing feedback to the other students. It will only help strengthen their lab report and help you learn about your own scientific writing.
- o Use language that criticizes the **work**, **not the person** who submitted it.

- Provide suggested replacement words or sentences if you have an idea on how a section could be presented more clearly.
- Try your best to reword a section or rearrange a document, but you are not obligated to rewrite whole sections of the paper. Point out the sections that need work and then offer suggestions, but the actual editing is up to the original author.

Evaluation of the peer review

Once the peer review is complete, the comments should be returned to the instructor for evaluation. Electronic versions may be submitted via Blackboard in the "Submit Assignments " area. You will be assigned a grade based on the quality/depth of your review. In order to receive a high score on the peer review, your review will need to show careful consideration of the manuscript. It will need to include both grammatical and formatting changes and suggestions based on the larger questions above. A scored copy of the peer review will be returned to the reviewer and the original copy will be distributed to the author.

Resubmission of the final draft

The resubmission of the final draft must include a **"Response to Reviewer Comments"** document in the back of the revised manuscript in addition to a corrected manuscript. This response and rebuttal to reviewer comments is an important part of the peer review process. In this document, the author will need to 1) concisely summarize where they have changed the document to accommodate the reviewer's request and 2) detail where the author has chosen to skip the suggested changes along with justification for that decision. If the author feels that a comment is irrelevant, inappropriate, or deals only with a style issue, then the author should explain why a change was not made.

The original author should read the comments given by both the peer reviewer and the faculty review and then address/incorporate these comments and suggestions into the manuscript. You **ONLY** need to include your response to the **PEER REVIEWER COMMENTS** in your "Response to Reviewer Comments" in the back of your final draft. The final version of the manuscript should be submitted electronically using Blackboard.

Peer-Review Lab Report Grading Guidelines

Presentation Title:_____

Category	Identity Code	Question	Max Points	Score
Format	F1	Title Page	1	
	F2	Introduction	1	
	F3	Experimental	1	
	F4	Results and Discussion	1	
	F5	References	1	
Introduction	I1	Did the writer describe the overarching significance of the project?	10	
	I2	Is the theory of the method clearly presented?	10	
	I3	Do the cited references provide appropriate background information support or relate to the work done?	10	
	I4	Is there a clearly defined statement of the problem and/or the hypothesis? And is the related back to the overall significance?	10	
Experimental	E1	Were the method and approach used in the project clearly presented?	20	
	E2	Are procedural and instrumental conditions complete and concisely stated?	10	
Results and Discussions	D1	Are the data presented and referenced in a concise manner? Are all the data represented somewhere?	10	
	D2	Are the results well presented (easy to look at and formatted and captioned appropriately)?	10	
	D3	Are the results well interpreted (authors used the scientific facts to explain and interpret their data)?	20	
	D4	Are figures of merit discussed correctly?	10	
	D5	Is there an adequate mention of possible related projects to be studied in the future?	10	
	D6	Does the concluding paragraph concisely address the statement of the problem and the hypothesis in light of the observed data/results?	10	
References	R1	Did the authors appropriately reference information and/or quantitative data throughout their presentation?	10	
	R2	Are the references appropriately formatted?	5	
General	G1	Is appropriate grammar used throughout the document? Are common phrases repeated over and over? Are sentences crafted to present as much information as possible?	10	
	G2	How is the overall flow of the document? Do paragraphs transition well? Are ideas choppy or well connected?	10	
		Totals	180	