

Physics 596 – Fall 2025

Assignment #1: Create and Present a “Journal Club” Talk and Referee Report

This assignment will consist of two parts:

I. Journal club presentation: Your team should select a short (≤ 5 pages) journal article from a general science journal such as *Science*, *Nature*, *Physical Review Letters*, *Physics Today*, etc. Prepare an approximately 20-25 minute PowerPoint presentation that describes and critiques this article. Your “journal club” presentation should include the following elements:

- (i) A summary of the article.
- (ii) A comparison of the article’s results and conclusions with those of previous (relevant) work.
- (iii) A critical analysis, by you, of the results and conclusions presented in the article.
- (iv) A summary of conclusions made by both the article’s authors and by your group.
- (v) A “citation” evaluation of the number of papers that have cited your paper, and a brief description of how the field has evolved since your paper was published

The due dates for your journal club presentation are as follows:

Friday, Sept. 26: Select a paper – Tell Lance Cooper by email the paper that your team has selected. More than one group cannot give a journal club talk on the same paper. So, to get your first paper choice, inform me of your paper choice early. Also, select, and give me the name of, the team “leader” for this assignment. – This person will be responsible for organizing the team to complete and present the assignment.

Nov. 14, Nov. 21, and Dec. 5: in-class Journal Club presentations

II. Referee report – In addition to the journal club presentation, each team member must *individually* prepare a ~ 1 page “referee report” that critically evaluates the team’s journal club paper. Each report must specifically evaluate the paper based upon the following 3 (*Physical Review Letter*-type) criteria, providing examples and support for these evaluations:

- (i) “Scientific validity” – Are the methods used valid, and are the logical arguments given to support the conclusions valid and persuasive?
- (ii) “Importance” - Does the paper report substantial research that will likely have a significant impact on future research?
- (iii) “Broad interest and accessibility” – Do the results reported have significant implications to various subfields, and is the paper written in such a way that it can be understood by a general (i.e., non-expert) audience?