

PHYS 395 Research Methods (Spring 2020)
Assignment #2, due date is individual for each student

Presentation and discussion of a research paper

In this assignment you should select a relatively short article from a reputable scientific journal. Examples of such a journal are: Science, Nature, Physical Review Letters, PNAS, ACS Nano, Physics Today, New Journal of Physics. The affiliation of the article authors should not include Nazarbayev University. The article of your choice does not have to be restricted to the field of physics. It could report some interdisciplinary research, or belong to any of the natural sciences. You will need to carefully read the article and prepare a 10 minute in-class presentation. Your presentation should include some or all of the following elements:

- A summary of the article
- Motivation and importance of this specific work
- Comparison and/or relation to other works in the field
- Description of the challenges and accomplishments of the research team
- Your critical analysis of the results and conclusions presented in the article

As a separate exercise, please do a bibliographic search/analysis and determine the number of papers that have cited your paper, and evaluate its impact on the community. If the paper is not very recent, you can also comment on how the field has evolved since the paper was published.

Your own critical analysis can be based upon the following criteria:

- Is the work scientifically sound?
- Is the work important? Will it (or did it) have substantial impact on future research? Why?
- Are the results of broad interest to a wider community who are not experts in a very narrow subfield? Can the paper be understood by the general physics/science audience?

For your presentation you can use a PDF file of the article. To put the work in the context, you can also show fragments from other related works or display some auxiliary data.

Your presentation will be evaluated for **clarity** and **liveliness/attractiveness** by both the class instructor and your fellow students.

Please email a web link to the paper of your choice to the instructor by Wednesday February 4.

Grading Rubric

Category	Score Range
Quality of the oral presentation	1-10
Ability to excite audience	1-10
Background knowledge of the presenter	1-10
Clarity and educational value	1-10