

Writing assignment - PH315 Physics of Contemporary Challenges

Due on Monday March 11, 2019 (12 noon). Upload your assignment via Canvas.

Option 1: Science Writing for a Magazine

The magazine called Scientific American is planning an issue that will feature articles written by undergraduate science majors. The magazine editors want clear and concise articles that raise awareness of the most exciting challenges/opportunities in science and emerging technology. You can submit to the category of physics, or applied physics. The editors are seeking articles that showcase the unique perspective of young scientists, rather than deferring to senior scientists. The target readership is undergraduate science and engineering majors who are choosing their career direction and may be influenced by your article.

The magazine staff will type set your text and figures, therefore, your submission will be in manuscript format. The article should be between 1400 - 2000 words.

Manuscript format: 12 point Times or 11 point Arial. Line spacing 1.5x. Margins 1.25". Figures are presented on separate pages. Figure pages are located directly after the page of text where the figure is first mentioned. Each figure has a caption underneath the figure. The first sentence of the caption is the figure title.

Required structure of the article

- **Introduction:** Explains why the topic is relevant (motivation) and what the reader will get from reading your article.
- **Background:** Answers any questions the reader might have about the background and context of the topic. Explains the key jargon (if you need to use jargon).
- **Analysis**
 - One or more physics equations (mathematical relationship between quantifiable physical variables). Accompanying text should define the variables in the equation, and explain the origin and/or meaning of the mathematical relationship.
 - One or more "original" calculations (using numbers that you think are relevant). You are strongly encouraged to present calculations in the form of a quantitative sketch. This will give the reader clear/concise insight into the overall calculation. Aim for a final answer that is correct within $\pm 30\%$.
- **Conclusion**
 - Relates back to points made in the introduction.
 - Interprets what your analysis means for the reader
 - Calls out any challenges that remain unsolved

Other Criteria

- One or more schematics ([conceptual diagrams](#)), created by you, that illustrate a physics idea
- One or more graphs, created by you, that shows the relationship between two physical variables. I'm looking for graphs that help the reader visualize important feature(s) of the physical relationship. Ideally the graph will show that you have "a taste for interesting physics".

As long as you have 1 original graph and 1 original conceptual diagram, you are welcome to include additional figures that are reproduced from other sources (always cite the source)