

PHYS 590 Class Meeting: Final Deliverables

Alex Wright

March 2 & 6, 2026

Final Reports

- Final reports are due at 5pm on March 26. Please email the report in PDF form to me and your advisor.
- Reports should be no more than 20 pages, including figures but not including bibliography and appendices.
- The style and formatting of the reports should be similar to the mid-year report: journal formatting in either the Physical Review or Astrophysical Journal style
 - See my slides from November for hints and suggestions

Final Report Draft

- Report drafts are due on March 12
 - Please submit a PDF by email to me and your advisor

Written Report Drafts (Midyear and Final)

Report drafts are due about two weeks before each of the major reports. These drafts, in pdf form, should be sent electronically to your supervisor and the course coordinator for comment/feedback. The drafts are meant to be an opportunity for us to provide you with constructive feedback, so the more complete the draft the more useful our feedback can be. The drafts should include at a minimum a properly formatted skeleton of the paper with section headings, an image, and a point form outline of what you plan to say in each section – this will help you get started with your thinking about the draft contents and ensure you have the formatting tools in place. This is intended to be helpful, and will be graded as either 0 or 1/1. Should you receive 0, the mark will be dropped and the weighting assigned to this component in your overall mark will be added to the corresponding written report.

This really is meant to help you!

Final Report Grading

- The grading of the final report will be done similarly to the midyear report, but with less emphasis on specific style elements and more emphasis on your research accomplishments
- Be sure that your report highlights your understanding of the project at all levels, and clearly spells out your personal contributions and accomplishments
 - “a significant innovation in the present work was....”
 - “existing models were extended in the following key ways....”
 - “key new findings of the current work include....”
- Research doesn't always “turn out” like it was supposed to. If your project hit a snag and you didn't get the result you were hoping for, it is still important describe what you did as thoroughly as you can.
 - The structure of the paper can be more-or-less the same, but with the results/conclusion describing the unexpected result and the reason(s) you think they may have occurred.
 - It is important that you help the reviewers to understand that the approach you took was well thought out and well executed, and the unexpected result was because of unexpected physics – not because you didn't think about or execute things carefully
 - Reviewers are told that the majority of the credit can be awarded to good projects that “just didn't work” – but projects that didn't work for preventable reasons should receive a lower score.

Poster Session

- The poster session will be:
 - Wednesday, April 8
 - On Stirling 3rd floor foyer & environs.
 - In conjunction with the poster session for ENPH 455
- There will hopefully be an “open house” for the Department, with food provided – I will send a schedule once details are finalized
- For the evaluation, you will be visited by your two examiners separately
 - I will provide you with your schedule in advance
 - Each examiner will typically be at your poster for 20 minutes or so.
 - I will try to group your examinations together so that you don't have to be there all day.

Poster Printing

- Posters should be 3' x 4' (be sure to set the size correctly in your layout software).
- Poster printing can be done “for free” in the chemistry department.
 - Physics will cover the cost of printing one poster for each of you – reprints are at your expense!
 - Posters must be submitted for printing by 9:00 am on Monday April 6th. No revisions are possible after submitting - see the submission instruction sheet posted on the course web site.
- Printing can also be done commercially (Media Centre, Staples, etc) at your expense (possible closer to the deadline!)
- Please email me a PDF copy of your poster for my records!

Poster Presentation

- You will probably be asked by the examiners to introduce your poster, so I recommend preparing and practicing a 5-10 minute talk. You should be prepared to be interrupted/sidetracked with questions, and that is OK – it is often best if the meeting turns into a discussion.
- The poster + presentation should aim to convey essentially the same information as your report
 - Give the context of your project, describe what you did, and highlight your personal contributions and results
 - The poster necessarily includes a “higher level” view than the detailed report

Poster Tips

- A poster should capture and convey the key points of your project in a clear and visually appealing way
- The amount of content that you can fit on a poster and still have it intelligible is quite limited
 - Some suggest 500-800 word maximum
- Think carefully about what to include (what information/figures/etc do you need to have at hand to explain your project to someone, and what things are “extras” that you can add in discussions)
- Aim to have the ‘key points’ legible from 2-3m away
 - I suggest printing “test fonts” and trying them

Title, formatted in sentence case (Not Title Case and NOT ALL CAPS), that hints at an interesting issue and/or methodology, doesn't spill onto a third line (ideally), and isn't hot pink

Colin Purrington
666 Teipai Street, Posterville, PA 19801, USA

Introduction

Congratulations a reader was mildly intrigued by your title. Now you have 2-3 sentences to hook her/him into reading more by describing what your question was and why the scientific significance of your results. Concise background information will come from the work area (if you're attending sessions at your poster, that will be obvious).

Typography research has shown that body text is easier to read if you use a 10pt font such as Times. The smallest font size for titles, headings, figure legends, etc. Research also shows that fully justified text (the paragraphs) is slightly harder to read even though it looks really neat.




Figure 3. A photograph or your own illustration can help you engage in an otherwise non-philosophical research. If it's not your image, an appropriate permission to use, and cite together.

Materials and methods

If you people, if any, really want to know the granular details of what you have done, or to be able to do a highly-annotated photograph, drawing, or flow chart to visually convey your general experimental approach. In these images, viewers in your poster or video, by attaching actual photos such as hand-drawn diagrams, research plans, photo flip books, or short movies (attach an old smartphone with videos).




Figure 2. Hire an artist to illustrate the important detail in your poster. A photograph of you actually doing something might be nice too. [image by John Snow 1893]

Literature cited

Book 1, J. M. Brown, and R.M. Higgins. 1996. Lane condition influences cross (and forward) heading. *Attention Perception & Psychophysics* 16: 141-147.

Book 2, J.D. 1985. The evolution of neocortical cells. Pages 87-100 in: *The Evolution of the Brain*, edited by R.L. Millard and B. Levin. Science, Sunderland, MA.

Book 3, C.C. 2001. Evolutionary Creativity in Introduction: University of California Press, Berkeley.

Book 4, for the book of Evolution, 2001. Statement on teaching evolution. <<http://www.evolutioneducation.org/statements.html>>. Accessed 2007 Aug 7.

Results

The results figure in this area should be visually compelling, with clear axes and a reader should read through the work clearly and have a reader should read through the work clearly. You might want a large map with most graphs. In some situations, you will want to separate graphs on right to separate figures from other figures by graphics and/or other text. When figures are too complex, viewers get confused about which figures to read first and which legend goes with which figures.

If you can add small drawings or icons to your figures, these visual cues can be predictive about an existing system. And our natural sense or culture to focus attention on separate parts of graphs. You can even get into attention cues to answer to help make what's going on that's interesting in relation to the how the hypothesis is being evaluated. E.g., "This reader you want to help make by communicating what I found in the lab." You don't be afraid of using colored connective lines to show how one part of a figure relates to another figure. These are right to use: gaps for published manuscripts, but posters can be more personal and have more guide viewers.

Figures are prepared but tables are sometimes unavoidable. Use both the pen to great effect to make a look professional. Look in a regional journal and emulate the layout, line types, line thickness, and alignment, etc., exactly. Align the content text or images to draw attention to separate parts of the table.

Paragraph format is fine, but use a bold line of results.

- 9 out of 120 biomedical data surveys
- Biostatistical can use icons
- Cannot use complex icons, but, accuracy, that can without icons

Do the treatments differ in their effects?




Figure 1. Legends can briefly describe the experiment, answer the question, and even include statistics if you've chosen to use a manuscript figure legend.

Do the axes and the legend differently to X?

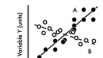


Figure 4. Label elements instead of relying on viewers' knowledge that you default to your software. Add pictures of A and B if there are actually things (e.g., icons of rat tails, without icons).

Are measures of treatment A and B different?




Figure 5. Don't be tempted to reduce font size in figure legends, axes labels, etc. To be legible, viewers are probably most interested in reading your figures and legends.

Conclusions

Conclusions should not be dry statements of your results. You want to guide the reader through what you have concluded from results, and you need to state why those conclusions are interesting (i.e., what's your reader will gain). These first several sentences should refer back to the framing text mentioned in the introduction. If you don't mention a heading name in the introduction, do that.

A good conclusion will also explain how your conclusions fit into the literature on the topic. E.g., how exactly does your research add to what is already published on the topic? It's important to be humble and generous in this section, partly because readers of previous literature may not be able to read everything the conclusion. You can also display your appreciation of others' work by using acknowledgments you have had with you.

Finally, you want to tell readers who have found this interesting what might be their next step and who should be next. You can mention taking the next logical step, or should another person with different skills follow up your existing work? It's OK to give a bit of personality into this ending, because viewers expect papers to be personal and if you're not actually sending them to convey your enthusiasm, your poster must be doing that for you.

If you have a graphical way to express the next step of your problem, by all means include it in this section. For example, you might make a graph with hypothetical data, that shows an expected result in a future experiment. That's not actually sending them to convey your enthusiasm, your poster must be doing that for you.

Acknowledgments

We thank J. Glen for generous assistance, Mary Kay for work, and Beth for proofreading copy. Funding for this project was provided by the Department of Biology. Note that people's titles are omitted (this was TMI).

Further information

More can and improve will be found at "Designing conference posters".
<http://colinpurrington.com/tips/poster-design>

Image from colinpurrington.com/tips/poster-design

Poster Tips

- One of the biggest challenges is preventing your poster from appearing “cluttered”
 - Formatting/layout, limiting text, and careful use of figures is key
- Thinking about fonts, font sizes, colour schemes, etc, can have a big impact in making your poster visually appealing and easy to follow
- Look at examples online to see what style ‘works’ for you!

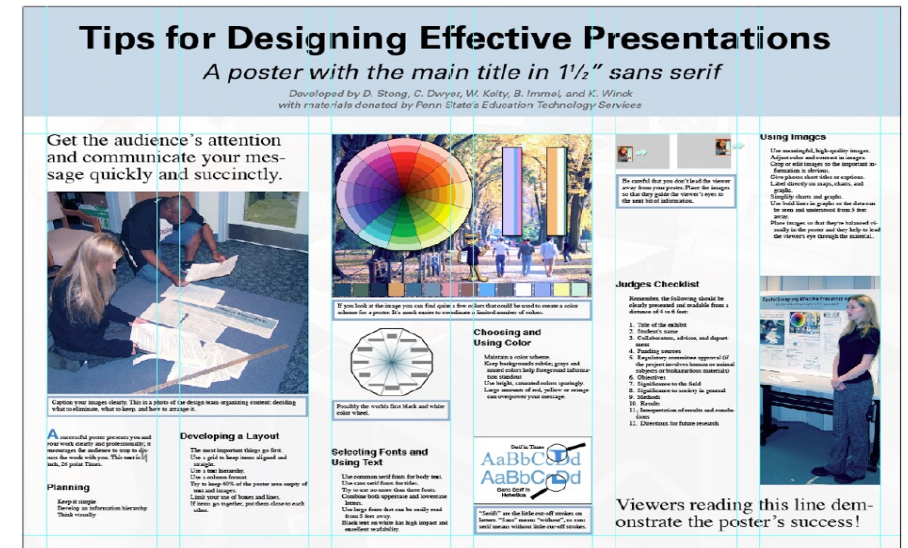


Image from personal.psu.edu/drs18/postershow/

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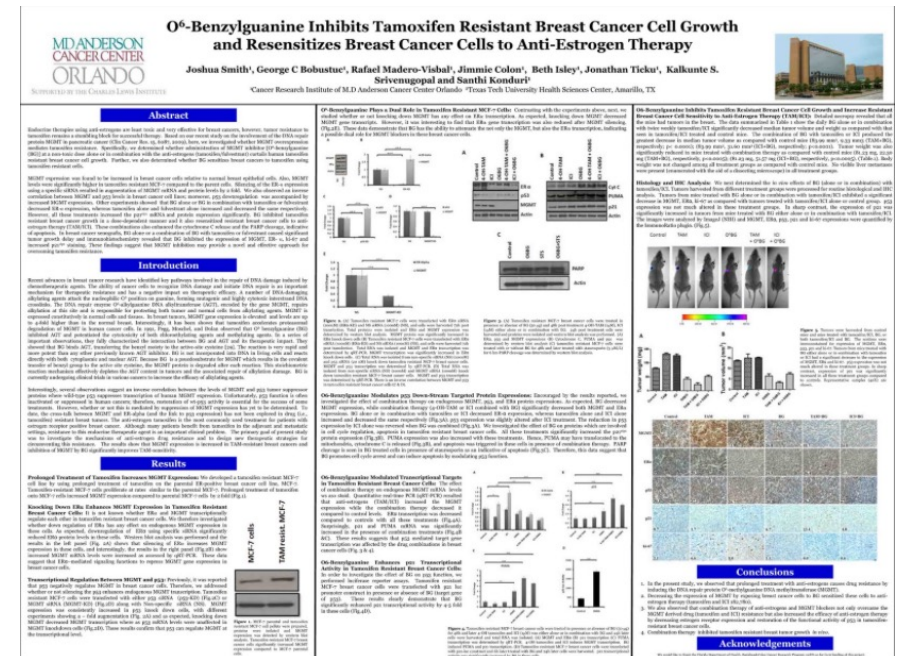


Image from betterposters.blogspot.ca

Some online resources for poster making:

- <https://colinpurrington.com/tips/poster-design> This extensive site includes poster templates
- <http://betterposters.blogspot.ca> Yes, there really is a whole blog about making posters (look back at older posts, though, as it has recently become quite commercial)....
- <https://guides.nyu.edu/posters>