Preparing a Poster Presentation

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Overview of Workshop:

Workshop description:

"In addition to helping you visually represent your research project, this workshop provides a wealth of advice for communicating with clarity and insight."

In other words, this presentation will:

- Provide direction on the visual layout on the poster.
- Provide guidance for the oral communication of the poster.

Audience Poll

How many of you:

- participate in undergraduate research?
- are presenting at an upcoming poster session?
- have presented your work before?

Benefits of Presentations

Poster presentations give the speaker the opportunity to:

- Organize knowledge for the benefit of others.
- Motivate audiences to ask questions.
- Build credibility as a subject matter expert.

Purpose of Poster Presentation

A large-format poster is a piece of paper (or monitor) that:

- Communicates your research.
- Introduces your question.
- Provides an overview of your novel approach.
- Summarizes your results in a graph, table, figure, or other visual means.
- Includes discussion of results.
- Lists previously published articles that are important to your research.
- Acknowledges assistance and financial support from others.

If text is kept to a minimum, a person could read your entire poster in under 5 minutes.

Source: Purrington, C. (2017). Designing Conference Posters [Blog post]. Retrieved from https://colinpurrington.com/tips/poster-design.

Included on Poster

1. Miscellany: title bar, authorship, affiliations, logos, acknowledgements
2. Abstract (not always required)
3. Introduction/Background
4. Methods/Materials
5. Results
6. Conclusions/Discussion
7. References

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

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Introduction

Congratulations: a reader was mildly intrigued by your title. Now you have 2-3 sentences to hook him/her into reading more by describing what your question was and why the answer might be of general interest. Gratuitous background information will cause them to walk away (if you're standing next to your poster, that can be awkward).

Typography research has shown that body text is easier to read if you use a serif font such as Times. But non-serif fonts are great for title, headings, figure legends, etc. Research also shows that fully justified text (this paragraph) is slightly harder to read even though it looks really cool.

Figure 1. A photograph in your introduction can help lure people to your otherwise non-photogenic research. If it's not your image, ask photographer for permission to use, and cite him/her.

Materials and methods

Few people, if any, really want to know the gruesome details of what you've been up to, so be brief. Use lightly-annotated photographs, drawings, or flow charts to visually convey your *general* experimental approach. To better engage viewers in your protocol or system, try attaching actual objects such as study organism (dead specimen), research gizmo, photo flip book, or a short movie (attach an old smartphone with Velcro).

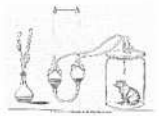

Figure 2. Hire an artist to illustrate the important step in your protocol. A photograph of you actually doing something might be nice, too. [image by John Snow 1853]

Results

The overall layout in this arena should be visually compelling, with clear cues on how a reader should travel through the components. Be creative. You might want a large map with inset graphs, or have questions on left with answers and supporting graphs on right. Be sure to separate figures from other figures by generous use of white space. When figures are too cramped, viewers get confused about which figures to read first and which legend goes with which figure.

If you can add small drawings or icons to your figures, those visual cues can be priceless aids in orienting viewers. And use colored arrows or callouts to focus attention on important parts of graphs. You can even put text annotations next to arrows to tell reader what's going on that's interesting in relation to the how the hypothesis is being evaluated. E.g., "This outlier was most likely caused by contamination when I sneezed into tube." Also, don't be afraid of using colored connector lines to show how one part of a figure relates to another figure. These tips might induce gasps for published manuscript, but posters can be more personal and thus better guide viewers.

Figures are preferred but tables are sometimes unavoidable, like death. But go to great efforts to make it look professional. Look in a respected journal and emulate the layout, line types, line thickness, text alignment, etc., exactly. Again, use colored text or arrows to draw attention to important parts of the table.

Paragraph format is fine, but so are bullet lists of results:

- 9 out of 12 brainectomized rats survived
- Brainectomized rats ate less
- Control rats completed maze faster, on average, than rats without brains

Do treatments differ in their effects?

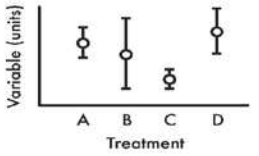

Figure 3. Legends can briefly describe the experiment, answer the question, and even include statistics if you so choose (unlike a manuscript figure legend).

Do As and Bs respond differently to X?

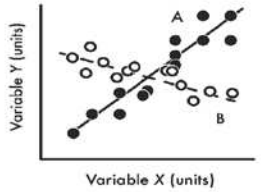

Figure 4. Label elements instead of relying on annoying keys that are default on most software. Add pictures of A and B if they are actually things (e.g., icons of rat with, without brain).

Are medians of treatment A and D different?

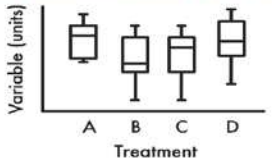

Figure 5. Don't be tempted to reduce font size in figure legends, axes labels, etc. This is because viewers are probably *most* interested in reading your figures and legends.

Conclusions

Conclusions should not be dry restatements 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., don't assume reader will guess). These first several sentences should refer back to the burning issue mentioned in the introduction. If you didn't mention a burning issue in the introduction, go back and fix 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 authors of previous literature may still be alive and even attending the conference. You can also display your appreciation of others' input by citing conversations you have had (with pers comms).

Finally, you want to tell readers who have lasted this long what might be done next and who should do it. E.g., are you currently taking the next logical step, or should another person with different skills follow up on your amazing result? It's OK to put a bit of personality into this ending because viewers expect posters to be personal (and if you're not actually standing there to convey your enthusiasm, your poster text should be doing that *for* you).

If you have a graphical way to express the next step of your hypothesis, 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 something you normally don't show in a traditional manuscript, but it's totally fine for a poster.

If you're curious, this poster has 683 words. Aim for 500 words. If you are above 1000 words, your poster will be annoyingly long to everyone except your mentor or colleague.

A well designed poster retains plenty of white space separating edges of text boxes, graphics, and tables. You also want space between your text and edge of box. Without white space a poster will looked cramped and uninviting.

Literature cited

Bender, D.J., E.M Bayne, and R.M. Brigham. 1996. Lunar condition influences coyote (*Canis latrans*) howling. *American Midland Naturalist* 136:413-417.

Brooks, L.D. 1988. The evolution of recombination rates. Pages 87-105 in *The Evolution of Sex*, edited by R.E. Michod and B.R. Levin. Sinauer, Sunderland, MA.

Scott, E.C. 2005. *Evolution vs. Creationism: an Introduction*. University of California Press, Berkeley.

Society for the Study of Evolution. 2005. Statement on teaching evolution. < http://www.evolutionsociety.org/statements.html >. Accessed 2005 Aug 9.

Acknowledgments

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Further information

More tips (and templates) can be found at "Designing conference posters":

http://colinpurrington.com/tips/poster-design

Tips for Preparing a Poster

- Limit the amount of words on your poster (but save them for a journal article).
- Revise several times.
- Ensure that it is readable from a few yards away.
- Do not use first person.
- Tell a story about your research.

Poster Talk

The Spoken Presentation

Oral Presentation Guidelines

- Introduce your subject with an attention-getting question, statistic, or image.
- Tell your audience what they can expect to learn.
- Clarify/support what they should remember.
- Conclude with a strong take-away message.

The struggle with Audiences

- Listening requires work.
- Too much or disorganized information hinders their comprehension.
- Listeners think faster than you can speak, so their minds wander while they listen.

Strategies:

- Before introducing new material, stop to remind your audience what they have learned so far.
- Highlight important terms and repeat them often.

Understanding Your Audience

- Speaking to colleagues and experts gives you more freedom to use specialized terms without providing definitions or context.
- Speaking to a more general audience allows you to convince those outside your field of the importance of your project.
- The ability to shift gears for different audiences (sometimes all listening at the same time) is a quality of a successful communicator.

Delivery

- Practice
- Practice
- Practice

Practice Presenting

Practice your speech with someone who is familiar with your work (such as a co-worker or mentor) and someone who is not familiar with your work (such as a non-engineering roommate).

Know your audience. You do not need to dumb down your work. Rather, tailor your work to your audience so that you present an overview of the project without eliminating technicalities.

Develop a hook that will lead right from your introduction into your background.

Describe your methods in the order you performed them.

Verbally tie your results back to your background section. Your audience will appreciate the oral call back to your introductory material.

Feel free to postulate about the future direction of your work.

Delivering Your Introduction

Does the introduction:

1. Prompt interest in the project?
2. Forecast your objectives (what your listeners can expect to learn)?
3. Adopt a tone appropriate to the audience?

Delivering your Presentation

Does the body of your talk:

1. Give your audience a map and help them understand the relationship of one topic with another?
2. Define key terms and concepts?
3. Visualize your subject from multiple perspectives?
4. Employ analogies to help audiences grasp unfamiliar materials?
    a) Example: Watson and Crick described the structure of DNA as a zipper.

Resources

- http://academics.umw.edu/speaking/speaking-center/useful-handouts/
- https://speakingcenter.uiowa.edu/resources
- https://speakingcenter.uncg.edu/resources/tip-sheets/

Questions?

Poster Text

The Written Presentation

Crafting your Title

- Write a list of keywords and key points that have been demonstrated by the study.
- Preserve the technicalities of your work, but do not over-explain.
- Draft a few titles and have a co-worker or a mentor review them before deciding on a final version.
- Save writing the title until the end of the poster-drafting process.

Introduction

- Start with the problem that your study addresses.
  - Describe the current research in this area.
  - Mention any established models that you are using,
  - Narrow in on your specific research question, hypothesis, and the purpose of your study.
- Describe previous research studies, shortcomings in your research question, and other possible results of a literature search.

Methods

- Describe the techniques used.
- Include information about sample sizes used for data analysis.
- Utilize a Data Flow Diagram.
- Be as concise as possible while still including all elements necessary to allow interpretation and replication of the results.

Results

- Present your results as figures and additional statistics.
- Do not interpret your results, because any discussion should be saved for the conclusions section.

Conclusions

- Keep your discussion focused on what you demonstrated in your study.
- Re-iterate the major statistics from your data analysis.