Preparing a Poster Presentation

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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?
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.
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.

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
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. Gimmicky background information will cause them to walk away (if you’re standing next to your poster, that can be awkward).

Tabletop research has shown that busy users are easier to read if you use a serif font such as Times. But non-serif fonts are alright for 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 her/him.

Results

The overall layout in this area should be visually compelling, with clear cues on how a reader should travel through the components. Do creative. You might start a large map with inset graphs, or have questions on left with answers and supporting graphs on right. Use space to separate figures from other figures by generous use of white space. When figures are too cramped, viewers get confused about which figure 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. Use color schemes to focus attention on important parts of graphs. You can even use post annotations next to arrows to tell readers 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 inoculated it."

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 1852]

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 highly 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 Videos). A photograph of you actually doing something might be nice, too.

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

Do treatments differ in their effects?

Figures 4. Label elements instead of relying on annoying keys that are difficult on most software. Add pictures of A and B if you really need things (e.g., specific icons of rat with, without brain).

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.

Figure 6. Are medians of treatment A and D different?

Acknowledgments

Note that I gave for laboratory assistance, Mary Juan for seeds, and Herb Inside for greenhouse care. Funding for this project was provided by the Department of Biology. Note that people’s titles are omitted (titles are TMs).

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 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.
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?
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/](http://academics.umw.edu/speaking/speaking-center/useful-handouts/)
- [https://speakingcenter.uiowa.edu/resources](https://speakingcenter.uiowa.edu/resources)
- [https://speakingcenter.uncg.edu/resources/tip-sheets/](https://speakingcenter.uncg.edu/resources/tip-sheets/)
Questions?
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.

CONCLUSIONS

- Software is accurate at obtaining axon counts and can replace using trained human experimenters to generate manual counts.
- Determined optimal magnification level for optic nerve cross sections is 40x
- There is now more data that demonstrates that transgenic mice have 9% fewer cells ($p = 0.0004$). Transgenic mice show greatest loss in small-sized axons
- Future work should be directed towards determining if a correlation exists between axon counts and ganglion cell layer thickness acquired from OCT images