Designing an Effective Poster Presentation

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About Amy

Amy Hark, PhD

• Joined UChicagoGRAD in June 2022
• Postdoc Northwestern
• PhD in Neuroscience from Northwestern
• BA in Psychology from Binghamton
  • Double Minor in Biology, Painting

University of Chicago

▪ Support professional development PhD students and postdocs in all STEM disciplines
▪ Central resource for UChicago postdocs, convening the Postdoc Advisory Board and acting as a liaison with the Office of the Provost
▪ myCHOICE program Navigator
UChicagoGRAD Career Development

We provide comprehensive support for careers in academia, industry, nonprofits, and government.

- Skill-building workshops
- Employer engagement events
- Career exploration opportunities
- Pitch-your-own internship program
- 1:1 advising

gradgargoyle.uchicago.edu
Agenda

1. Overview
2. Format & Design
3. Content
4. Example Poster Review
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Why Design a Better Poster?

Your poster represents the caliber of:

- You
- Your research group
- Your science
- Your department and The University of Chicago

- Don’t rely solely on your science to attract an audience
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Don’t rely solely on your science to attract an audience

To effectively communicate your work to your audience
A Poster is Not A Paper

• While you should still provide the appropriate scope and depth of information to the audience, the amount of information in a paper is significantly greater than in a poster

A poster needs to
• Be viewed from a distance
• Distill your science
• Be engaging
Effective Posters

- Convey a single message
- Avoid text saturation
- Use a visual hierarchy
Effective Posters

- Convey a single message
- Clearly and concisely, to a potentially diverse audience, even if you are not present
- Avoid text saturation
- Emphasize important content
Effective Posters

Convey a single message

Avoid text saturation
  Limit your text and tell your story with graphics

Emphasize important content
Effective Posters

- Convey a single message
- Avoid text saturation
- Emphasize important content

Format your poster to prioritize critical information
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Format & Layout

That’s:
- 12ft²
- ~1.1m²
Traditional: All sections are equal
Emphasize High Value Content
# Format to Aid Understanding

## Title Block

<table>
<thead>
<tr>
<th>Introduction</th>
<th>Results</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Methods</strong></td>
<td><strong>Conclusions</strong></td>
<td><strong>Acknowledgements</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Further Information</strong></td>
</tr>
</tbody>
</table>

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</tr>
<tr>
<td></td>
<td></td>
<td><strong>Further Information</strong></td>
</tr>
</tbody>
</table>
Design In Columns, Not Rows

The audience should move through each section in a logical order.

So your audience moves this way.
The Same Rules Apply For Vertical Posters

- Title Block
- Introduction
- Results
- Conclusions
- Acknowledgements, References
- Methods
- Conclusions
- Acknowledgements, References
- Intro
- Results
- Acknowledgements, References
- Methods
- Conclusions
- Acknowledgements, References
Effective Poster Guidelines

1. Leave sufficient white space (~30-40%)
2. High value content gets the most space
3. Too many words = low readability
4. Flows in a logical manner
5. Don’t be constrained by traditional heading titles
Displaying Text: Size and Capitalization

• Follow the 6 foot rule for font size
  • Title block: 65+ pt.
  • Section headers: 48+ pt.
  • Figure titles: 36+ pt.
  • All other text: at least 20 pt.

• To avoid issues with naming conventions, use Sentence case for all titles and headings
  • NEVER USE ALL CAPS
Displaying Text: Fonts

Titles and Headings: San-Serif font
Body text: Serif font

Sans-Serif Fonts
- Arial
- Calibri
- Geneva
- Helvetica
- Lucida Sans
- Tahoma
- Verdana

Serif Fonts
- Book Antiqua
- Cambria
- Courier
- Georgia
- Lucida
- Palatino
- Times
Displaying Text: Font Color

Which can you read easily?

Which can you read easily?

Which can you read easily?
Which can you read easily?
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Content: Introduction

Aim for ~200 words

• Briefly describe your issue or question
• Provide context with field/literature
• Propose hypothesis and how you’ll test it
• Avoid excessive background information and definitions

Do not just copy & paste your abstract here!

Your abstract is already in the program book or online
Content Is Important, But Be Concise

• Summarize the steps and timeline of experiments in a figure or a flowchart

• Figures can transform complex data into a coherent story

• Have a clear message, with an obvious set of conclusions

Content: Results

Aim for ~200 words

• Use descriptive titles, not just “Results”

• Limit text and use graphics when possible

• Each figure or table should include one or two lines that states the concluding message
Displaying Data: Graph Type

Which graph most effectively shows the trend?
Displaying Data: Labeling Your Graphs

The best data ever

These data support my hypothesis!

Figure One. X is inversely correlated with Y

1. Use a descriptive title and figure legends
2. Label your Axes
3. Include appropriate error bars and statistics
Converting a Figure for a Poster

How could this graph be improved?
Cells attach more efficiently when overexpressing tau.

% attachment vs. parent

MCF-7tau1

MCF-7tau2

MCF-7
Converting a Figure for a Poster

How does this design improve understanding?

Cells attach more efficiently when overexpressing tau

% attachment vs. parent
Content: Conclusion

Aim for ~200 words

Make strong conclusions and:

• State whether your data supports your hypothesis
• Discuss how/why your results are conclusive and relevant to published work
• Indicate future directions
Presenting your Poster

1. Be mindful of your demeanor, gestures and appearance
2. Introduce yourself, shake hands!
3. Have a one sentence pitch to potential viewers
4. Be able to explain your poster in full in 3-5 minutes
5. Finish talking to current viewers BEFORE new ones
   OR allow viewers to read and then answer questions if needed
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What Works?

• Use of white space and text
• Clear hierarchy of information
• Figures clearly labelled
• Clear conclusions

What Could be Improved?

• Graphical introduction or illustration would ease understanding
• The two tones of purple do not aid the design
• Title should be black, to be more legible

Introduction

The study of sex differences has become more important as many neurological and psychiatric conditions demonstrate differences in prevalence and manifestations between males and females. For instance, women are more likely to develop both depression and Alzheimer’s Disease compared to men, while men show more severe symptoms in schizophrenia or Parkinson’s Disease.

Most research has been largely focused on sexually dimorphic male subjects due to prior belief that female subjects would exhibit increased variability due to their estrous cycle. Trace eyeblink conditioning (IEBC) is a forebrain-dependent temporal associative memory task that allows for sex differences to be studied independent of estrous cycle. It has been shown that female and male rats acquire IEBC at different rates, similar studies have not been performed in mice. Furthermore, it was recently shown that female mice exhibit exaggerated fear-potentiated startle behaviors, while IEBC was not included in this study. Mice of either sex in acquisition of IEBC at 60% C57BL/12 mice.

To determine if estrogen plays a role in acquisition of associative memory in mice, mice underwent experimentally induced ovariectomy and field castration. Females were then tested for fear-potentiated startle and IEBC. IEBC provides a more complete picture of the mechanisms of learning with implications for future targeted therapies.

Methods

Animals: Female C57BL/12 mice were given ovariectomy at 8 weeks of age. The ovariectomy was performed on day 1, 14 or 21. Animals were tested on day 28 post surgery. On day 29, animals were tested with either 14.4x10^-6 M saline or 0.1 M saline, which was diluted with saline, and injected intraperitoneally.

Learning: Animals were tested either 14 or 21 days post surgery. Animals were tested either with saline or saline with 0.1 M saline. Animals were then tested with either saline or saline with 0.1 M saline, which was diluted with saline, and injected intraperitoneally.

Data Analysis: C57BL/12 mice were tested for both males and females. For both males and females, IEBC was tested on day 29 post surgery. On day 30, animals were tested with either 14.4x10^-6 M saline or 0.1 M saline, which was diluted with saline, and injected intraperitoneally.

Figure 3(4) shows a comparison of conditioned C57BL/12 mice during acquisition training. Figure 3(5) shows a comparison of conditioned C57BL/12 mice during acquisition training. Figure 3(6) shows a comparison of conditioned C57BL/12 mice during acquisition training. Figure 3(7) shows a comparison of conditioned C57BL/12 mice during acquisition training. Figure 3(8) shows a comparison of conditioned C57BL/12 mice during acquisition training.

Conclusions

• Intact female mice learn IEBC at a faster rate than male and ovariectomized mice
• Male and intact female mice reach the same level of learning
• Both females and males should be included in future behavioral work

Future Directions

Differential work focuses on sex differences and local fluid potentials (LFPs) recording of learning-related changes in the lateral prefrontal cortex. Investigating the role of LFPs in the normal brain processes associated with learning and memory is crucial. It is important to note that the lateral prefrontal cortex is a circuit that can be used in future work to derive the circuit changes to conditions like a deficit in learning using an enriched environment has been investigated. Sex differences have been shown in the morphological and electrophysiological properties of hippocampal neurons, but these differences are not known when mice are tested in C57BL/12 mice.

By including both sexes, this work in the LGD, we may also gain better understanding on how sex contribute to the differences in evidence and manifestation of Alzheimer’s Disease.

References

Palladium(II)-catalyzed Mono-selective Fluorination of Benzoic Acids Using a Practical Auxiliary
Kevrin S. L. Chan, Masayuki Wasa, Jin-Guan Yu*
Department of Chemistry, The Scripps Research Institute, 10500 North Torrey Pines Road, La Jolla, CA 92037, USA

What Works?
- Great use of white space and text
- Clear hierarchy of information
- Contrasting figures/data
- Color used for emphasis

What Could be Improved?
- The question is unclear from the title and labels
- The information emphasized by color is not the most critical
Concluding Thoughts

1. Give yourself an adequate timeline

2. Emphasize high value content

3. Font size and style is important

4. Limit you text and tell your story with graphics

5. Your poster and how you present it represents you, your science, and UChicago
Questions?

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References

1. Principae – Jean-luc Doumont
2. Better Posters - Blog by Dr. Zen Faulkes
3. Designing Conference Posters – Colin Purrington
4. Adventures in poster making - Blog post by Robyn Hall
5. Poster presentation - Eastern Kentucky University
6. Designing Effective Posters - University of Kansas Medical Center
7. Poster Session Tips - Pennsylvania State University
8. Design of Scientific Posters - Pennsylvania State University
9. How To Make a Great Poster - American Society of Plant Biologists
10. Creating Effective Poster Presentations - North Carolina State University