POSTER PRESENTATION
DEVELOPMENT WORKSHOP

UCR Student Success Programs

Office of Undergraduate Education
Characteristics of a Poster

- How is a poster presentation different from an oral presentation?
Overview

1. Advance Preparation
2. Design Guidelines
3. Dialogue about Research
4. Symposium/Conference Etiquette
5. Evaluation and Feedback
6. Final Tips
Advance Preparation
Advance Preparation

- You **must** prepare your poster ahead of time
- Give yourself at least **three business days** for the poster to be printed
Advance Preparation

- You should prepare a two-minute “elevator speech” about your research project
- Be prepared to have one-on-one and small group conversations
Advance Preparation

A Good Poster Will Have:

- Minimal paragraphs of text.
- The poster should read from top left to bottom right, like you are reading a paper.
- Bullet points should be optimized.
- Photos, graphs and other illustrations should be used to help visualize outcomes. Make sure to have high quality resolution on the images. Try to use JPEG images.
- Should summarize the importance of the topic, how it is being examined, and what has been learned.
- A two-minute talk should represent the poster.
Design Guidelines
Design Guidelines

- Size: 3’ x 4’ (36” x 48”) or 4’ x 4’ (48” x 48”)
- Tip: Design your poster on a PowerPoint slide and resize when printing
Creating a poster in PowerPoint

- Start with a blank slide and set the slide dimensions in PowerPoint
- In the Design Tab – Select Slide Size – Custom Slide Size
Design Guidelines

Templates are also available online.

36” Tall x 48” Wide
POWERPOINT POSTER TEMPLATE

These free PowerPoint poster templates are designed for a standard 3x4 foot poster presentation.

This research poster template can be printed at the following sizes:
36x48 (Standard), 42x56, 48x64, 30x40

This scientific poster template is the smallest of the templates and is very suitable for scientific posters with low to moderate amount of text and graphics. Excellent for limited presentation spaces.

Modern - Windows and Mac PowerPoint
DOWNLOAD 36x48 POSTER TEMPLATE-2013

Classic - Windows and Mac PowerPoint
DOWNLOAD 36x48 POSTER TEMPLATE-2003
Design Guidelines

Poster Presentation Title

- The title should be approximately the entire width of the poster with the main text broken into multiple columns, usually three or four depending on the size of the poster.
- You may also want to use section headings within the columns at the start of each section.
Design Guidelines

- **Title (Font Size 72-120)**
  - Use fonts such as Times New Roman or Arial
  - Placed at the top center of the poster
  - Below the title, in smaller font, include the following (Font Size 48-80):
    - Your name, major
    - Your faculty mentor, department
    - University of California, Riverside
    - Names of other co-authors
Design Guidelines

Introduction (Header Font Size 36-72)
  - What is the problem and why is it important? (Body Font Size 24-48)
  - Hypothesis? What are you investigating?
  - Define the problem, question, or topic

Research Methods (Header Font Size 36-72)
  - Surveys, experiments, interviews, data analysis, etc... (Body Font Size 24-48)

Results and Discussion (Header Font Size 36-72):
  - What have you discovered or what do preliminary results show? (Body Font Size 24-48)

References (Header Font Size 36-72)

Acknowledgements (Header Font Size 36-72)
Design Guidelines

- Include and label all graphics, charts, tables, figures, and photos
- Information should be brief
- Posters should be readable from 3 feet away
- For examples, walk the halls of Pierce, Geology, Science Labs, or other “science” buildings.
Design Guidelines

- Edit, review and spell-check all elements of your poster display
- Maintain a logical flow of information
Design Guidelines

- Posters should be colorful and eye-catching
- Pay attention to contrast when selecting text colors
- Try not to put text over images
TREM2 deficiency decreases hemispheric swelling following traumatic brain injury without affecting astrogliosis or microgliosis

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Introduction and Hypothesis

- Every year, 1.7 million people report traumatic brain injuries (TBIs) in the United States. The consequences of TBI vary by individual, but include increased risk of Alzheimer’s disease.
- Microglia are brain-specific macrophages with a primary function of continually monitoring neuronal function. They are distinguished from other macrophages populations by their ~10-fold higher levels of the Triggering Receptor Expressed on Myeloid Cells 2 (TREM2).
- Following TBI, microglial expression of TREM2 increases ~10-fold. Three observations highlight the importance of TREM2-dependent microglial functions:
  2. Humans carrying a heterozygous mutation in the ligand-binding pocket of TREM2 have a 3-fold higher risk of developing Alzheimer’s disease.
  3. TREM2 promotes phagocytosis of cellular debris and sequesters inflammatory cytokines, suggesting it acts as an anti-inflammatory receptor.

- Original Hypothesis: Following TBI, lesion volume and edema would be exacerbated in either an induced pro-inflammatory state (intraperitoneal injection of lipopolysaccharide (LPS)) or in mice lacking TREM2 (TREM2KO).

- Here, we have found:
  - Contrary to our hypothesis, neither lesion volume nor edema changed.
  - Furthermore, hemorrhagic swelling was reduced both 3 and 7 days following TBI in TREM2KO mice.
  - Histological analysis revealed no significant change in area of astrogliosis or microgliosis between TREM2KO and wild-type (WT) mice.

- RT-qPCR expression of pro-inflammatory cytokines remains unchanged between WT and TREM2KO mice, but purinergic receptor PY222 dually and aquaporin 4 decreased by 50% in TREM2KO mice.

Method

Traumatic Brain Injury Model

- All TBIs performed are controlled cortical impacts (CCI) delivered by an automated piston driven impactor:
  - 8 mm diameter craniotomy – right side, adjacent to bregma
  - Impactor tip size = 3 mm
  - Speed = 5 m/s
  - Impactor = 1 mm
  - Duration time = 200 ms

Quantification of gliosis

- In a subdural study, regions of interest (ROIs) were traced for all areas with immunoreactive glial cell in both impacted and contralateral hemispheres, respectively.
- Astrocytes — immunoreactive astrocytes expressing glial fibrillary acidic protein (GFAP)
- Microglia — immunoreactive microglia expressing ionized calcium-binding adapter molecule 1 (Iba1)
- Area of gliosis was normalized to total hemispheric area for each respective hemisphere. Thalamus area of gliosis is represented as a percentage of the total hemispheric area.

Methods

Figure 2 — Volume of impacted hemisphere decreases in TREM2KO mice, yet volume and composition of lesion remains unchanged between TREM2KO and WT mice.

Discussion

- Although we did not measure any deleterious differences in gliosis using immunohistochemical staining, this method lacks the resolution to definitively state whether there is any change in microglial activation.
- We see large variation in gliosis for TREM2KO mice in both hemispheres, suggesting that TREM2 deficiency results in less tightly controlled gliosis.
- Further, RT-qPCR expression of classic pro-inflammatory markers is consistent with global data, indicating that TREM2 is not necessary for regulation of a pro-inflammatory response following TBI.

- With these findings, we note no change in lesion volume or composition, the decrease in hemispheric swelling obtained consistent with a decrease in mRNA expression of aquaporin 4 in TREM2KO mice. Indeed, this expression level of aquaporin 4 in the impacted hemisphere of TREM2KO mice is the same as the baseline expression in the contralateral hemisphere of WT littermates.

Implications

- If indeed aquaporin 4-mediated swelling is reduced in TREM2KO mice, this may present a potential target for therapeutic intervention to reduce brain swelling. As intracranial pressure following brain swelling is the leading cause of brain damage following TBI, this presents an effective target to ameliorate TBI outcome in human patients.
- While the pro-inflammatory signaling in the brain is not significantly altered between WT and TREM2KO mice, the diminished expression of purinergic receptor PY222 allows microglia to be more sensitive to cell death in the brain milieu. Further studies must be conducted to assess if TREM2OKO microglia have changes in mobility, their ability to survey the environment, and their levels of toxicity in both naïve and TBI-treated mice.

Acknowledgments

UC LEADS (University of California’s Leadership Excellence through Advanced Degrees) and Chancellor’s Research Fellowship (UC Riverside).
Design Guidelines

- Consistent use of space
- Leave space around images and blocks of text
- Avoid creating a crowded slide or poster

**Good Spacing**

**Bad Spacing**
Design Guidelines

- **Use of color**
  - Select colors that complement and contrast with each other
  - Avoid extremely bright colors
  - Text color should contrast with background color
    - Easiest to read: black text on a white background
      - Include color as design elements (borders, shapes, etc.)
    - Also ok: dark background with light colored text
Bad Use of Color

- Yellow is difficult to read
- So is red
- Not to mention, these are pretty bright
- Dark blue isn’t so bad
Good Use of Color

- Black on white
- Dark blue on white
- Brown on white
Design Guidelines

- Use of text
  - Select no more than 2 different fonts
    - Too many
    - Gets distracting
    - And difficult to read
  - AVOID USING ALL CAPITAL LETTERS
    - People read shapes of words
    - Using all capitals distorts those shapes slowing our processing time
Dialogue about Research
Dialogue about Research

- Be prepared to speak to a broad audience
- Prepare and rehearse a two-minute overview of your research
- How to get the dialogue started:
  - “Do you have a few minutes to hear about my research?”
  - Be prepared for someone to ask you “Tell me about your research...”
Dialogue about Research

- Be prepared for informal dialogue
- Anticipate questions
- Your poster is an advertisement for your research
  - Provide a hook to draw them in
  - Present the highlights of your research
  - Handouts are optional
Dialogue about Research

- Assume your audience is not a part of your discipline
- Define important concepts
- Simplify the language and avoid jargon, especially in your verbal explanation
- Use visual aids to explain processes, theories, and outcomes
- Be sure to speak slowly and clearly
Dialogue about Research

- Rehearse your two-minute presentation to ensure:
  - You are able to present in the time allotted (2 minutes)
  - Your nerves won’t get the best of you
  - You present clearly and smoothly
  - You know what you want to say
  - You appear competent and knowledgeable

- Practice one-on-one or small group discussions
Dialogue about Research

- You cannot cover every detail of your research, so anticipate questions.
- Audience members may ask about:
  - More detail about the research methods
  - How findings relate to other phenomena
  - Where your research will go from here
- Most questions come from people interested in your research that want to know more.
- If you don’t know the answer, say so.
Dialogue about Research

- **Credit sources**
  - This varies by discipline check with your faculty mentor on the appropriate format to use.
  - Citations are important to support your work.

- **Be truthful**
  - Present trials and tribulations
  - Ensure you are presenting your research honestly
  - Do not exaggerate conclusion or implications.
Symposium Etiquette
Symposium Etiquette

- Have your poster ready to hang on the first day of the Symposium (between 7:30 am – 8:30 am)
- Arrive early for your session.
- Stay for the entire session (60 minutes)
- Do not leave your poster unattended
- Get to know the research of your nearby posters
- Invite your faculty mentor!
Symposium Etiquette

- Be friendly and willing to talk with strangers
- Work with your faculty mentor or research team to practice your two-minute presentation
- Dress professionally
- Be prepared to pick up your poster before 5pm on the 2nd day of the symposium.
Evaluation and Feedback
Evaluation and Feedback

- Each poster will be evaluated by a trained staff member using a rubric (in the next slide)
- This is an opportunity to give you constructive comments
- The information is confidential and will only be shared with you
- These evaluations will be used to rank poster presentations and determine awards for the best overall presentation and honorable mentions
Rubric for feedback

<table>
<thead>
<tr>
<th>Professionalism</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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</thead>
<tbody>
<tr>
<td>Student engages with audience through their poster talk in a professional manner.</td>
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<tr>
<td>If asked, student is able to answer questions in a knowledgeable and professional manner.</td>
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<thead>
<tr>
<th>Organization and Flow</th>
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<th>1</th>
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<tbody>
<tr>
<td>Poster contains major elements of research paper, as marked by logical headings.</td>
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<td>Poster uses color, text and images effectively.</td>
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<thead>
<tr>
<th>Clarity of Context</th>
<th>0</th>
<th>1</th>
<th>2</th>
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</thead>
<tbody>
<tr>
<td>Student explains context and background in way that creates interest in research topic.</td>
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<td>Poster can be easily understood by people outside of the topic/field (i.e.: concepts are simplified).</td>
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<tr>
<th>Overall Impression</th>
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<th>3</th>
<th>4</th>
<th>5</th>
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<tr>
<td>Impressive example of important and well-presented research or creative activity.</td>
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Final Tips

- **Printing & Reprographics**
  - Cost approximately $87 – be sure to submit 2-3 days before the Symposium.
  - Hours 8-12, 1-5 M-F
  - Phone: 951-827-4444

- **Library Copy Center**
  - Cost $5 – be sure to submit 2-3 days before the Symposium. Make sure to include a map of California.
Final Tips

- **Kinko’s**
  - Hours: M-F 7am - 11pm; Sat-Sun 9am-9pm
  - 6095 Magnolia Ave., Riverside, CA 92506
  - 951-682-4200
  - Call for Pricing
  - Poster submissions are need at least **24 hours** in advance
Final Tips

- UCR Undergraduate Research Symposium guidelines:

- General overview with tips and references
  - http://colinpurrington.com/tips/academic/posterdesign

- Example posters with critique

- Templates

- Stylizing your poster
  - https://science.nichd.nih.gov/confluence/display/~jonasnic/Elements+of+Style

- UCR Logos
  - http://creativedesign.ucr.edu/standards.html
Final Tips

- Your presentation or poster is an advertisement for your research
  - Provide a hook to draw people in
  - Present the highlights of your research
  - Engage in dialogue
  - Have fun and good luck!