RESEARCH POSTER HOW-TO

Formatting

- 1. Common poster-creating software
 - Powerpoint
 - Restructure the size of the slide to be the size of the poster that needs to be created (usually the size of a trifold so 36" height with 48" length) or an easy ratio of that size
 - Then add in your content as needed
 - You can also split up your file creation into 3 parts
 - Ie left, middle and right panel (one for each section of the trifold) and then collate it all into 1 pdf to print
 - Canva
 - Restructure the size of the "page" to be the size you need and then add in content
 - Powerpoint is more "traditional" and can allow for higher quality exports for free
 - Canva includes lots of free graphics that can be put into the poster but high quality is usually an additional fee
- 2. General Outline See details below
 - Introduction/Motivation
 - Procedure
 - Results
 - Conclusion
 - Small acknowledgments/references section
 - Not a full citations list, but to acknowledge the labs, datasets, etc that you used
- 3. Focus on showing NOT writing
 - Nobody likes to look at a poster that is COVERED in text
 - Use pictures, graphs, tables, etc
 - Can also use graphics like test-tube or well-plate images to show a procedure or result (ie not every result has to be a table or graph)
- 4. Make sure that all text is readable
 - Color is good, but if it strains the readers' eyes to read, it probably won't go over well with the viewers
 - Also, consider how things look on the computer vs when printed

Introduction

This is where you are going to introduce the motivation for your research. This includes

- 1. Background
 - Using already published research or facts, explain the work that has already been done in this area
 - Define any key terms or ideas that will be consistent referenced throughout the poster
 - This is in order to reduce the amount of times you need to define/explain a term

- Try to avoid blocks of text and instead find graphics that demonstrate the research (ie a chart that shows the number of people globally who suffer from the disease that you are trying to solve)
 - YOU can also make figures from the papers/resources you are finding
 - Ie making a schematic for the stages of cancer in visual form instead of words like the article might suggest
 - One good resource for this is biorender
- Demonstrate the need for this research what are you going to add to the topic that has not been done before
 - Be prepared to defend *why* this might not have been done before
- 2. Testable Question/Engineering Criteria
 - The crux of what you will be testing and why OR what you are trying to build and how that will be deemed successful
- 3. Hypothesis (not applicable for engineering projects)
 - If you do have a testable question, write out the answer you believe will come about from this research. Be sure to provide a reasoning for this
 - This can be a couple of sentences and be more straightforward

Procedure

- 1. Try to create graphics that represent the steps of the procedure
 - This does not have to be done for every single step, but if you are using a unique technique try to express that through images
- 2. Avoid BLOCKS of text and break it up with bullet points
- 3. Do not go into over-detailing the procedure
 - Avoid statements like "then take a 5mL test tube and pour 4mL of H2O into it"
 - INSTEAD, rewrite it as "Dilute the DNA with water to a 1:10 ratio"; even this statement could be considered as "over detailing" if you have a lengthy procedure
- 4. Use general judgment about the length of this section. Procedure and replicability are important, but that is also discussed in detail in the paper.
 - You only have a short time in front of the judges so use that time WELL

<u>Results</u>

Through the use of charts, tables, and images of the results - show the judges what your research accomplished

- 1. Use statistical tests in figures as these emphasize both your grasp on the "trustworthiness" of your data and save you space in your defense
- 2. Organize your figures properly
 - Instead of having 1 massive figure, break it up into parts a,b,c in order to make it more visually appealing and obvious
- 3. Do not write out the results or analyze them ON the poster. That will be done as you present the work. Instead, just show them the results.

- 4. If compared to the paper, imagine results as everything in your paper WITHOUT the Discussion section
 - That discussion section will be what you orally share to the judges
- 5. Once again, avoid blocks of text. If you **must** explain something, try to break it up with bullet points

Conclusions

- 1. This should be a small portion of the poster where you explicitly write out what the results of your research are. What did you add to the research community with your work?
 - Do not analyze your data in depth here. That is what the results section and your speech is more about. You want to highlight the big takeaways from your research and then leave it at that simply **conclude** at this section
- 2. Also include the next steps in this section, where do you want to take your work next? Why? How will you do so?

Acknowledgments and Sources

- 1. Your entire bibliography/cited sources do not have to be on the poster. But they should be in your paper and should be easily accessible should a judge ask for them
 - But any graphics that you did not create need to be explicitly cited on your poster. Also, clarify which graphics you DID create
 - Essentially every image/graphic on the poster needs to be accounted for in one way or another
- 2. Try to add in acknowledgments at the end of your poster as much as possible
 - This can include mentors, teachers, reviewers, etc. If they were crucial to your work, add them

Imagery

Examples of imagery used in research posters include:

- Tables
- Charts
- Infographics
- Anything else you believe adds depth to your presentation AND DOES NOT DETRACT
 - These images are meant to ADD, not confuse or draw attention away from your work
- **Captions:** You will need to include the source of the image (whether that is you, a mentor, an organization, etc) and a quick one-liner about what the image is detailing out
 - An example is: *This image showcases an osteoblast reproducing through mitosis.* (Source: The National Institute of Health)

LASTLY, please remember this is a guideline and not hard and fast rules. Depending on your project and presentation styles - this outline can easily change. The general rule of thumb is that

your poster needs to be readable and engaging. It should not "tire" out the reader and should provide them with interest about your work.