Creating an Effective Research Presentation -

Specifics for the July 23 "Virtual" Summer Undergraduate Research Symposium and General Tips

Summer 2020

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Abstracts for Booklet: *Submit by 11:59 pm July 12!*

- Preparation instructions. Highlights…..
  - <u>Title (4-13 words):</u> Concise, unique, bold, use keywords, perhaps describe results in title. Not too technical! (Avoid, "Effect of…")

  - <u>Author(s):</u> Include ALL authors who made substantial contributions

  - <u>Author Affiliation (byline):</u> Dept/Institute/University, city, state, zip where research took place (do not include street address)

  - <u>Abstract (150-175 words):</u> Self-contained, single paragraph statement that allows reader to determine nature/scope of poster. Include…
    - Problem statement/purpose of research (***hypothesis/question addressed & motivation/impact)/Broad title sentence***
    - Research ***context*** (demonstrate attempt to make unique contrib.)/Objective
    - Research methodology (***approach***)
    - Summary of principal findings or expected results (***results***)
    - Major ***conclusions***
    - Safety information (if applicable)
    - **<u>Do NOT</u>** include references in your abstract!

Submit abstract at: https://honorswvu.wufoo.com/forms/s6vwchy08iki4i/

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Abstracts for Booklet: *Submit by 11:59 pm July 12!*

- Identify presentation type…..
  - Oral (15 min.)
  - Performing Arts (15 min.)
  - Visual Arts (15 min.)
  - Poster (5 min.)

- Identify broad category choice for presentation…..
  - Biological Sciences, Health Sciences, Agricultural Sciences
  - Environmental Sciences, Physical Sciences, Engineering
  - Neuroscience, Mathematics, Human Engagement, Creative Arts

More advanced researchers with experience in poster presentations are encouraged to give oral presentations.

Submit abstract at: https://honorswvu.wufoo.com/forms/s6vwchy08iki4i/

Symposium Website (check for updates): Click here.

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How should I write the abstract if I do not have results?

- For national/regional discipline-specific research conference, typically submit completed research.

- For our institutional symposium, it is understood that your research may be _in progress_.

- No results yet? Recommended language for abstract:
  - **"Preliminary results indicate that….."**
  - **"We expect our results to confirm….."**
  - Be sure to check with your faculty research mentor.

When is/who presents at the "Virtual" Symposium?

- **Tuesday July 21, 2020**   Upload presentations with embedded audio by noon. VoiceThread (VT) external to ecampus used to host presentations.

- **Tues-Thurs. July 21-23, 2020**   UGR generates VT urls and links to Symp Website.

- **Thursday July 23, 2020**
  - 11:00 AM – 2:00 PM   <u>Presentations</u> – Concurrent with judging. All presentations available for viewing.

  - 2:00 - 4:30 PM   <u>Synchronous Commenting</u> – Online presence of presenters. Presenters monitor VT comments/questions and respond to questions in real-time. Judges ask questions and evaluate responses.

- **Friday July 24, 2020**   SURE Post-questionnaires. Awards by 4 PM. Feedback from attendance at peers' present (8).

- **July 24–30, 2020**   Symposium remains open but monitored by UGR.

UG researchers from different programs throughout West Virginia will present!

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What are the goals of a research presentation?

- Stimulate interest in your research
- Receive feedback on your research
- Network: generate contacts
  - expansion of research
  - job opportunities
    - include your email on your presentation

How do I attract people to my presentation?

- **To get attention & to capture attention…**
  - use visually appealing layout of information, colors, and fonts
  - invite people to view your virtual presentation by emailing them a direct presentation link

- **To keep attention…**
  - give a clear, logical, and interesting presentation of your research
  - include only necessary information, focus on data
  - use abbreviated writing style (i.e., omit non-essential words

Presentation should NOT be enlarged version of written report!!

I will be visible during my pre-recorded presentation. How should I dress? Dress to Impress!! Business casual, at minimum.

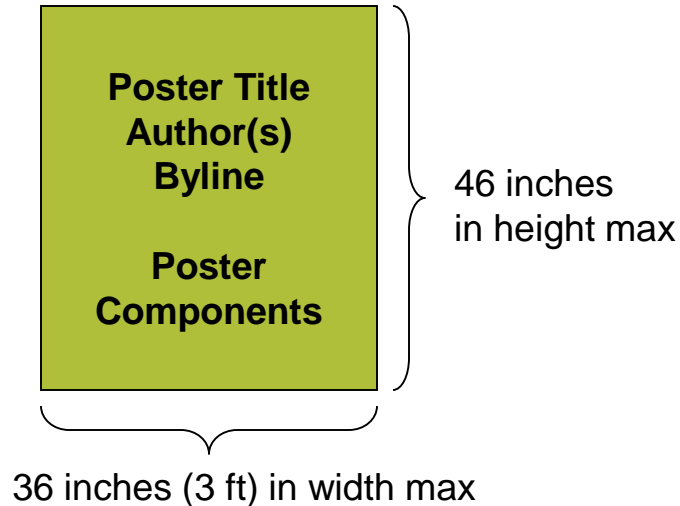*photo by Nicole Barker: obtained from http://www.flickr.com/groups/postersessions/

*obtained from http://www.flickr.com/groups/postersessions/

Poster Presentation - Preparation Guidelines

Poster Size? As this is a virtual event, any size poster can be used. Posters limited to 1-page.

Poster layout should be portrait mode! →

Poster Title Author(s) Byline Poster Components

} 46 inches in height max

} 36 inches (3 ft) in width max

- However, we recommend fashioning a poster that is no larger than 46 inches in height and 36 inches in width as this is the standard size used at WVU-based poster symposia and at West Virginia's Undergraduate Research Day at the Capitol (URDC).

If printing, be aware of ½ in margin on each edge.

How do I prepare my poster?

- Use Microsoft PowerPoint or Publisher (or other presentation software). However, Microsoft products compatible with WVU computers.

  - ## PowerPoint
    - Go to _Design_ and then _Slide Size - Custom_ and change width, height, and orientation of page (e.g. width=36", height=46", & orientation = portrait)
    - Click _View_ followed by _Zoom_ to zoom in (10% gives picture of overall poster on screen) and out (100% gives actual size of text) as you prepare the poster.

  - ## Publisher
    - When first open click on _More Blank Page Sizes_, then _Custom_, _Create New Page Size_ (or just go to _Page Design_ and change page size) and change page size to width=36" and height=46".
    - Zoom in (10% gives picture of overall poster on screen) and out (100% gives actual size of text) as you prepare the poster.

  **Plotter has tough time with gradient and/or busy backgrounds. Avoid!!**

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What components should I include on my poster?

- See poster judging rubric. Include…..
  - <u>Title:</u> from abstract
  - <u>Author(s):</u> from abstract (no Dr./Prof. titles)
  - <u>Byline/Author Affiliation:</u> from abstract
  - <u>Poster Body</u>
    - *Hypothesis/goals/problem statement* **(What's the question?)**
    - *Motivation/purpose of research/broader impacts* **(Why care?)**
    - *Background information* (limited and as needed)
    - *Theoretical or Experimental Plan/Methods* **(Approach?)**
    - *Data/results* **(What did you find?)**
    - *Conclusions* **(What do your results mean? Did they answer the question?)**
    - *Future work/directions* **(Next steps?)**
    - References (if needed, 5 or fewer, shorten, on bottom)

  - <u>Acknowledgements</u> **(Who funded/helped with work?)**

Typically, do NOT include the abstract on your poster!!

Guidelines of Poster DOs…

Colors

- Use light background with dark lettering. Uses less ink and more readable.
- Limit to 3-4 compatible colors **(Not red on black)** **(Not green w/red)**
- Use text colors consistently (e.g., main headers in dark blue, subheadings in tan, rest of text in black)

Text

- Left justify most text except title/author/affiliation
- Use bold, italics, underlining consistently, but sparingly
- Use easy to read fonts…Times New Roman (text) or Arial (headings/title)
- Use large font size
  - Title   72 point (visible 15 ft away)
  - Author/Byline   48 point
  - Headings/Subheadings   44 point (visible 6-7 ft away)
  - Text   32 point (visible 3 ft away)
- Minimize complete sentences
- Make title/headings compelling/attention grabbing similar to a newspaper headline.
- State results explicitly in headings (e.g. Results: Rats ingesting pot live longer!). Attracts attention from far away.

HINT…Print out a "handout" version on an 8 1/2" x 11" piece of paper. If text is unreadable on handout, then text is too small. Increase the font size.

# Guidelines of Poster DOs (cont)…

<u>Layout</u>

- Arrange top to bottom then left to right
- Use bulleted/numbered lists for methods/conclusions
- Include some white space
- Use arrows or numbered headings to direct reader
- Use symmetric arrangement
- Use good balance of graphics and text

<u>Graphics</u>

- Viewable 3 feet away at a minimum
- Use heavier lines to improve viewing
- Text should support graphics (not vice versa)
- Limit rows/columns in tables (> 20 table cells overwhelms)
- Limit bars on graph (6 or fewer) or lines (3 or fewer)
- On separate graphs: use same scale (especially for comparisons)

Make visually appealing!!
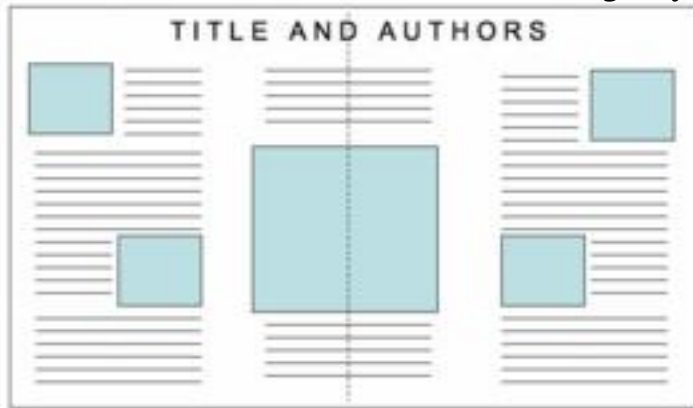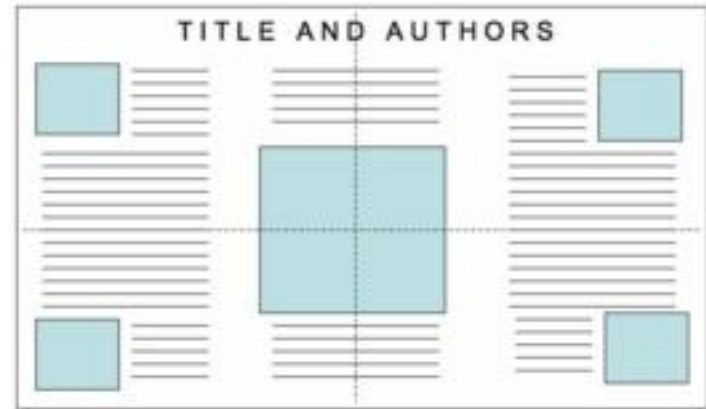
Good Layout: Vertical Symmetry

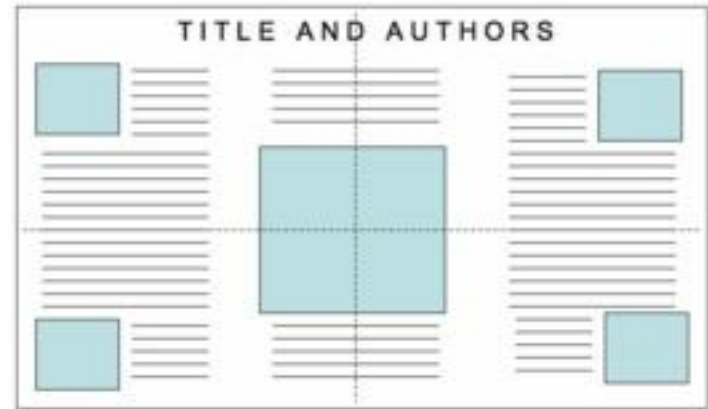**Good Layout: Horizontal & Vertical Symmetry**

Good Layout: Diagonal Symmetry

Poor Layout: No Symmetry & Text Heavy

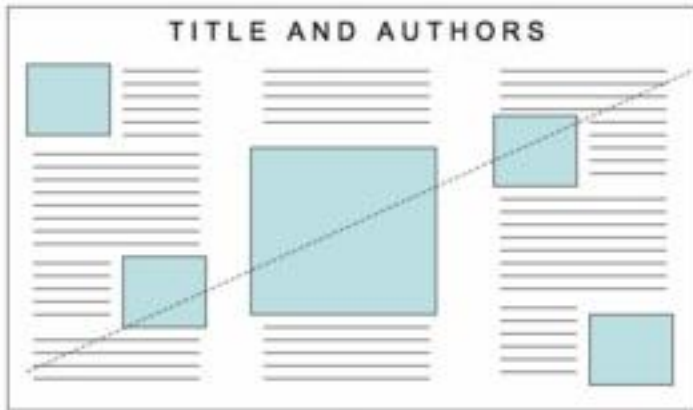West Virginia University

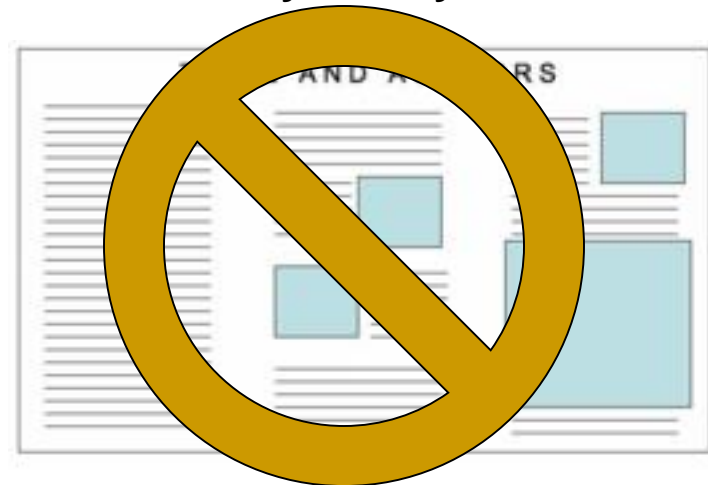# *Make visually appealing!!*

Good Layout: Vertical Symmetry

Good Layout: Horizontal & Vertical Symmetry
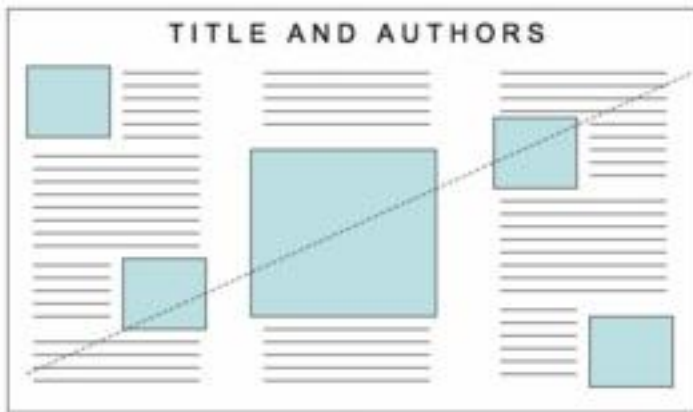
Good Layout: Diagonal Symmetry

Poor Layout: No Symmetry & Text Heavy

*Obtained from : Hess, G., Tosney, K., and Liegel, L. Creating Effective Poster Presentations, http://www.ncsu.edu/project/posters/NewSite/CreatePosterLayout.html.

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Guidelines of Poster DOs (cont)…

Graphics

- Use graphics over text whenever possible
- *Images/graphs > flow charts (e.g., for methods) > tables > bullet lists > text*
- Pictures – use jpeg format instead of tif (smaller size)
- Use white background within graphics
- Label legend directly on graphic. Legend outside of graphic takes up space.
- Simple, polished, and publication quality

Poster Content

- Minimize methods section (unless poster is about new method)
- Throughout, stay focused and keep to message
- Focus message more on results
- Interpret results in conclusion section (don't restate results again!).
- Place results in context within the broader research field.

Try for 40% graphics, 40% empty space, and 20% text.

Guidelines of Poster DON'Ts…..

- Use fluorescent colors…attention grabbing but
  - visually annoying
- Use pastel colors for text
  - like this..hard to read!
- Use text anywhere that is smaller than 24 point
  - like this 10 point font…can you read that 10 point font?
- Clutter with text
- Use complete sentences and wordy paragraphs
  - minimize each word section to < 50 words
- Use cheesy clip art
- Use annoying/busy/distracting background
- Use dark or gradient background
  - Postscript plotting feature has major issues with gradient backgrounds. ***Avoid gradient backgrounds in order to minimize printing time!***

Overall: Simple is better!

Poster Critiques

*Pigs in Space Poster Example
(see http://colinpurrington.com/wp-content/uploads/2012/02/bad-scientific-poster-example.jpg)

Can Suburban Greenways Provide High Quality Bird Habitat?

George R. Hess :: NC State University :: Department of Forestry & Environmental Resources :: Raleigh NC 27695-8002 USA :: george_hess@ncsu.edu
Christopher E. Moorman, Jamie H. Mason, Kristen E. Sinclair, Salina K. Kohut :: NC State University :: Department of Forestry & Environmental Resources
www4.ncsu.edu/~grhess/GreenwaysForWildlife

Birds of Conservation Concern in Decline

- Many bird species of conservation concern – including neotropical migrants, insectivores, and forest-interior specialists – decline with increasing human development
- Greenways might mitigate this effect
- Habitat patch size, vegetation composition & structure, and landscape context are key factors
- Standards are lacking for designing and managing suburban greenways as high quality habitat

Objective: Greenways for the Birds

- Determine how development-sensitive forest birds are affected by
  - forested corridor width
  - adjacent development intensity
  - vegetation composition & structure
- Develop recommendations for greenway designers and planners

Study Design & Independent Variables

- Sampled 34 - 300m corridors in Raleigh & Cary, NC, USA

- Sampled range of
  - Forested corridor widths (20 – 1,200m)
  - Adjacent density (low density residential – office/commercial)

- Additional measures
  - Vegetation composition & structure in corridor
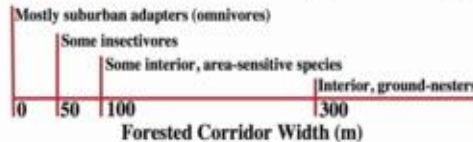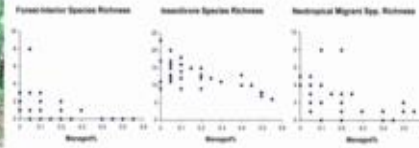 - Land cover in 300m x 300m adjacent to corridor (context)

- Measured richness & abundance of
  - Breeding birds
  - Neotropical migrant birds during stopovers
  - Mammal nest predators

Breeding Birds of Concern More Common in Wider Greenways with Less Managed Area Surrounded by More Forest Canopy

- 8-minute, 50m point counts at center of corridor
- Revisited 4 times during breeding season

Mostly suburban adapters (omnivores)
Some insectivores
Some interior, area-sensitive species
Interior, ground-nesters

Forested Corridor Width (m)

Significant Predictors for Breeder Abundance

Greenway:
(–) Managed Area
(+) Shrub Cover

Adjacent Landscape:
(+) Canopy Cover
(–) Building Density
(–) Bare Earth

Spring Neotropical Migrant Stopovers More Common in Wider Greenways with More, Taller Hardwood Trees

- 200m x 25m transects along one side of greenway path
- Revisited sites for two spring seasons and one fall season
- Width *not* significant, but trend consistent with other findings
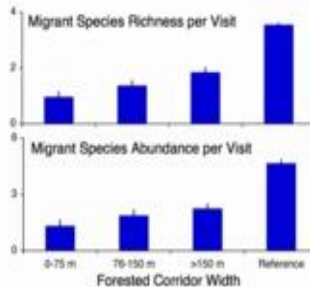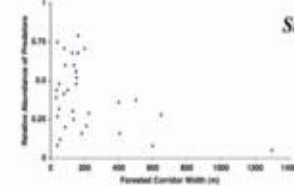

Significant Predictors for Spring Migrant Abundance

Greenway:
(+) % Hardwoods
(+) Canopy Height

Adjacent Landscape:
(–) Bare Earth

Nest Predators Less Common in Wider Greenways with Narrower Paths

- Five baited scent stations along each greenway segment
- Observed for 5 nights each

Significant Predictors for Predator Abundance

Greenway:
(–) Corridor width
(+) Trail width
(+) Mature forest
(+) Ground cover
(–) Vine cover

Adjacent Landscape:
(–) Building density

Greenways for Development-Sensitive Forest Birds Might Conflict with Intense Recreational Use

People & Managers Prefer ...

- Good for walking, running, cycling, strollers, wheelchairs
- Easier to maintain, especially with higher intensity use

Forest Birds Prefer ...

- Narrow path avoids splitting forested corridor
- Discourages heavy human use
- Fewer nest predators

Potential Solution: Wide Corridor, Trail Near Edge

- Make corridors at least 50m wide; wider is better
- Don't split forested corridor
  - Keep trails as narrow as possible
  - Avoid wide grassy areas along trails within forested corridor
  - Locate trails near the edge of forested corridors

Better Research Poster in Less Time – New Poster Design (Poster 2.0) Sweeping the Conference Circuit

- Developed by Mike Morrison (psychology grad student at Michigan State U.)

- Frustration with perceived lack of efficiency of poster events for presenter and attendee prompted him to develop a sleek poster design.

- New Poster Design –
  - Main research finding in center in plain language and large font.
  - QR code below where can find more info.
  - Side panels for title, authors, byline and typical poster info.

- For more information, see:
  - How to create a better research poster in less time [YouTube Video](#)
  - NPR (6/11/19 All Things Considered) "To Save the Science Poster, Researchers Want to Kill it and Start Over" [article](#)
  - Poster 2.0 [Templates](#) and examples on [Twitter](#)
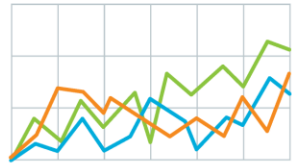
Title

Authors

Intro

H1
H2

Methods

1.
2.
3.
4.

Results

Discussion

More research is needed, but...

Main finding goes here, translated into **plain english**. **Emphasize** the important words.

Extra Tables & Figures

DISCOVERING THE LANGUAGE OF MEANINGFUL WORK

Table 1. Correlations of all variables.

DISCOVERING THE LANGUAGE OF MEANINGFUL WORK

Table 4. The relationship between positive sentiment and meaningfulness.

What should I do for the audio part of my poster presentation?

- Give an overview of your project (5 min. max) using your poster visuals.
    - Start broad (w/impact), then move on to more focused information.
    - Non-expert should be able to understand!
    - Avoid jargon/acronyms!

What should I include in my project overview?

- **In the overview you should display:**
  - <u>Project knowledge</u> (Main focus of research? Importance/impact? Conclusions?)
  - <u>Logical presentation</u> (Clear/coherent? Refer to poster visuals?)
  - <u>Background information/understanding</u> (as evidenced by ability to explain project)
  - <u>Presence</u> (Speak clearly? or Read from poster?)
  - <u>Ability to answer questions about your research</u> (evidence of project knowledge)

Before recording, practice your poster presentation and limit to 5 minutes!!

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Overall Poster Should Be…

- Focused
- Coherent
- Ordered
- Visual
- Graphic

Poster is expanded and visual form of <u>abstract</u>!

Poster should stand alone and tell your research story without you present AND with minimum words!

General Strategy (15 minutes max.)

1. Tell what going to tell them → forecast
   * *simple*
   * *gear to all*

2. Tell them → body
   * *more complicated*
   * *gear to experts*

3. Tell them again → summary/ conclusions
   * *simple*
   * *gear to all*

Oral Presentation DOs…..

- DO KISS

Oral Presentation DOs…..

- DO KISS

Oral Presentation DOs…..

- DO KISS

      No not KISS, the rock band!! But…..

          <u>K</u>eep <u>I</u>t <u>S</u>imple <u>S</u>tupid!!

Oral Presentation DOs…..

- DO KISS

   No not KISS, the rock band!! But…..

   Keep It Simple Stupid!!

- DO know your material.

- DO leave out material you can't explain.

- DO use pictures instead of words.

- DO practice. Practice a lot!

- DO assume 2 minutes/slide.

- DO speak up.

- DO look at audience/camera.

- DO check for erors (or is it errors?).

- DO use ≥ 18 pt font.

- DO act confident.

- DO explain completely charts/graphs & point out titles/units for axes.

Oral Presentation DON'Ts…..

- DON'T use acronyms and jargon. If must use, define and remind.

- DON'T face or block the screen.

- DON'T include an outline slide.

- DON'T be messy.

- DON'T cover w/words. Minimize full paragraphs/sentences.

- DON'T act bored.

- DON'T swear.

- DON'T include extra material.

- DON'T run over time.

What slides should I include in my oral presentation?

- **Title slide (Title, Authors, Affiliation)**

- **Motivation Slide**: Why should we care about this research? What is the "big picture" of why doing this research?

- **Background Info**: Limited and only if needed.

- **Hypothesis/Objectives:** What want to do and why? What's the question? How do objectives attempt to solve outstanding problem/issue in this field of research? (i.e., before we can get to the "big picture" we have to understand _____)

- **Theoretical/Experimental Plan/Methods:** What have you done? What are going to do and how? What is your approach?

- **Data/Results (~3 slides):** What are results up to this point? What did you find? Use graphs to show trends. Pictures are good. Tables of data not good but better than words. Completely explain all results/graphs, etc. Take ownership of your results.

- **Conclusions:** What have you learned? What do your results mean and did you answer the question? What still needs to be addressed? Display in bullet form.

- **Future Work/Directions**: What are you going to do next (future studies)?

- **References:** Include as needed throughout (partial citation at bottom of slides) or include references in one slide at end.

- **Acknowledgements:** Who funded/helped with work?

Do NOT include the abstract !!

Audio Recording

Recording Your Presentation

- *Combine* audio and visual elements. How? Be creative. Use any device with the capacity to capture audio and visual input as long as it is compatible with a file format accepted by VoiceThread (VT) (compatible audio and video files)
  - Record simultaneous audio and video of yourself standing in front of your projected presentation or artwork.
  - Add audio to a poster or presentation within PowerPoint and export the presentation as a video file.
    - Microsoft's instructions on how to record audio within PowerPoint presentation, please click here.
    - Instructions from Microsoft employee on exporting PowerPoint to a video file, please click here.
  - If needed, use video or web conferencing software to record your presentation (e.g., Zoom or Collaborate Ultra)

- Presentation Examples
  - WVU's Virtual Spring Undergraduate Symposium
  - Other examples and resources

Friday July 24th is the last day of summer research for many of you. Before you leave, be sure to thank:

- your faculty research mentor,
- secondary mentors (graduate students, postdocs, etc.) with whom you have worked, and
- any other folks who have helped you in your summer research.

Remember: Faculty who mentor undergraduates in research/creative work consider it an opportunity to train and enable the next generation to carry on the enterprise of scholarly activity in their field.

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Emblems, Acknowledgements, and Financial Support

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Include one type of WVU Emblem (perhaps at bottom and not too large): see http://brand.wvu.edu/brand-guide/identity/logo for more logos and logo no-nos.

Include acknowledgements and emblems: Ask research mentor BUT…place at bottom/end and don't make them too large

Do include financial support: Ask research mentor

Resources

WVU Resources

- See https://undergraduateresearch.wvu.edu/present-and-publish/presentation-opportunities/summer-undergraduate-research-symposium for more details (judging rubrics, etc) about the Summer Symposium.

- How to Prepare for a Poster Session by WVU's Ian Harmon: https://libguides.wvu.edu/c.php?g=903129&p=6500445

- Poster Printing Info at WVU Libraries: https://lib.wvu.edu/services/printing/poster/

- WVU's SpeakWrite Website: http://speakwrite.wvu.edu/

External Resources

- Humorous Advice on Designing Conference Posters by Colin Purrington (Swarthmore College): https://colinpurrington.com/tips/poster-design/

- Impactful Scientific Posters (ACS): ***https://www.youtube.com/watch?time_continue=215&v=J-SRWog-5Is***

- Designing Effective Research Posters by Justin Matthews (California State University, Monterey Bay): *http://graduatestudent.ucmerced.edu/jmatthews/Site/Designing_Effective_Research_Posters.html*

- Creating Effective Poster Presentations by George Hess, Kathryn Tosney and Leon Liegel (NC State University):*http://www.ncsu.edu/project/posters/* & 60-Second Poster Evaluation by George Hess (NCSU): https://projects.ncsu.edu/project/posters/60second.html

- Humanities Poster Tips (from NYU): https://wp.nyu.edu/archivesandpublichistory/2014/05/13/poster-tips-for-humanities-conference-posters/

- Posters for Humanities and Social Sciences by Aimee Roundtree (UHD): https://www.uhd.edu/academics/sciences/scholars/Documents/workshop-poster.pdf

- Giving an Effective Poster Presentation: https://www.youtube.com/watch?time_continue=606&v=vMSaFUrk-FA

- Great collection of Flickr posters, some good and some bad: *http://www.flickr.com/groups/368476@N21/pool/*