

GUIDELINES & TIPS FOR SCIENTIFIC ORAL PRESENTATIONS

IMPORTANT - Read This Section!!

Before you start to prepare your PowerPoint presentation, read this entire document. Then, once you think you're done with assembling the presentation, read this document again. Use the rubric that will be used for evaluating your presentation as a checklist so that you know that all of the essential ingredients have been incorporated into your presentation. Even if you've addressed all of the items in the rubric, it is still important to practice your talk before you give it to the class. If you find, during practice, that it is consistently too short or too long, this is a sign that you should fix something (add or cut material and/or change your speed).

Each group member must deliver an equal portion of the oral presentation, even if one member of your group has taken the lead on other parts of your project (setting up the experiment, taking data, doing analyses, organizing the presentation).

Organization of the Presentation

Title slide:

- Informative, but brief title.
- Group members' names.
- Institution (Biology Department, WWU).
- You may want a nice photo related to your project as a backdrop to all of the above, but keep it visually simple so that it adds rather than detracts from the text.
- You may not need to read the title word for word to the audience (they can read it), but you should at least paraphrase it.

Introduction:

- Put your issue in the context of several already-published articles from the primary literature, using the funnel scheme (as with the introduction of a paper).
- Avoid slides with a lot of text – use bulleted statements (with citations) to develop the context. Limit each slide to 3-4 points, any more than that and you will lose the attention of your audience.
- Show some nice photographs or schematic drawings of your subject to help your audience connect to the "issue" or question. You can also show data from some of your background literature if it is particularly relevant to the questions you are developing.
- Provide a clear statement of the questions and hypotheses
- For a 25-minute talk, shoot for no more than 5 minutes (approx. 4 slides) in this section.

Materials and methods:

- This portion of a presentation is generally less detailed than it would be in a written report. However, it needs to be clear & concise, and complete enough so your audience gets a good sense of what you did and how you did it.
- If you have multiple parts to your experiment, it is more effective to present methods and results for the first part, then do methods and results for the second part, etc. For example, here's our first question, here's what we did to answer that question, here's what we found. That led to the second question. Here's what we did to answer the second question, here's what we found for that, and so on. In a talk, methods don't need to be all grouped together, which is different from a paper.
- Show more visuals of your organism/study sites and justify (if you haven't already done so in the introduction) why your experimental organism or study site is appropriate for addressing your research questions.

- Present your experimental design (including sample sizes) either with text or a schematic diagram (the latter is preferable).
- Show experimental equipment and methods (ideally include a photograph of a person doing something or a photo that illustrates your technique)
- Mention statistical analyses that were used and how they address the hypotheses.
- Avoid slides with a lot of text.
- Approximately 5 minutes for this section (approx. 4 slides).

Results:

- Remind audience of your specific hypotheses.
- Present a figure (graph) that clearly illustrates your main results. If necessary, you can use a table, but a figure is almost always better for oral presentations.
- Walk your audience through each figure: describe the axes, point out patterns, and significant treatment effects.
- When describing results, focus on describing the biological patterns, not the statistics.
- End with brief summary slide of main results.
- Approximately 8 minutes (approx. 5 slides).

Discussion:

- Integrate your results and state your conclusions regarding your original hypotheses.
- Discuss why your results are sound and interesting (convince audience, too).
- Describe the relevance of your findings to published work (how it confirms and/or refutes what others have found) – include relevant citations for the bulleted points in this section.
- Mention any caveats about your results or areas in which your study could be improved or expanded.
- Talk about future directions this research project could take.
- Finish with a statement of your overall conclusions (a conclusions slide is generally effective).
- Approximately 6 minutes (approx. 2 slides).

Acknowledgements:

- List names of people (other than your instructors in this course) who helped you with this project.
- 1 minute max (1 slide).

Parting slide:

- It is nice for the audience to know when the presentation is over and they can begin to ask questions, and a parting slide is a good way to “wrap up” the presentation.
- You could close with a slide showing “for more information” such as suggestions for further reading (journal articles, books, web sites) for those interested.
- Use a nice picture of your site, organism, or a related image for your parting slide. This also gives the audience something to look at during question period. Avoid sunset pictures – is it really relevant?

Layout and Design

- Construct all slides in “landscape” orientation. If an image is inherently vertical, shrink it so that it fits horizontally.
- Try to keep the important information away from the margins of the slide area, especially the bottom 10%. Often, the bottoms of slides cannot be seen by people in the back rows of a room because people’s heads are in the way.

- Use a consistent color scheme for the slide background, which is not overly complicated. Busy graphics tend to detract from the text and even more so from figures/tables.
- If your slide design has background images, you should remove the background image anytime you want the audience to focus on something other than text (i.e. a picture, figure or table). This can be done by right-clicking the slide, choose background, and then click the box that says "omit background image."
- Alternatively if you have a slide with only a photograph or figure (no text), set the background of that slide to black or the color that is the basis for your other slides.
- Choose your fonts carefully -- not all appear "smoothed" when projected. Always avoid fonts with city names (e.g., New York); these fonts are not reliably smoothed in many applications. Non-serif fonts (e.g., Helvetica) are slightly more readable on the screen than serif fonts (e.g., Palatino).
- Do not use more than 2 or 3 typefaces in a presentation.
- Your audience will read 100% of the text on a slide, so delete any text that is not essential (i.e., use short, bulleted phrases, not long complicated sentences)
- Minimize your use of abbreviations, or avoid them altogether. Always define an abbreviation the first time you use it.
- Use italics instead of underlining.
- Avoid using strings of all capital letters in slide titles (or elsewhere). Strings of all capitals are very difficult to read quickly, and are usually interpreted as the print equivalent of YELLING!
- Do not use transition fades, bouncing text, or swooshing noises. Even though most audiences will politely chuckle, rest assured that inside they are cringing with pity and horror. It is ok, though, to have each bulleted item in a list 'appear' via animation, but keep it simple.
- Avoid, if possible, mixing green and red on a figure--members of your audience may be red/green colorblind, the most common type of colorblindness.
- Graph titles are not appropriate for laboratory write-ups and manuscripts, but they are fine for slides.
- Use arrows to direct the audience's attention to particular parts of figures.
- For figures created in Excel or other graphing programs and then exported to PowerPoint, make sure that the output fonts and line widths are legible once the image is scaled within PowerPoint (thin lines and small fonts often don't show up well).
- Never display two-dimensional data in three dimensions.

Delivery of Presentation

- Do not rely on your notes: the room may be too dark, and reading your notes will give the impression that you are unprepared.
- As you speak, look at your audience (not your slides) as much as possible.
- Imagine yourself talking to someone at the back of the room. That will ensure that you are projecting your voice adequately.
- Do not keep "checking" to see whether a slide is still there. It almost invariably is.
- Similarly, do not simply "read" your slides to your audience, because your audience can read them. Use a minimum amount of text on your slides, and expand upon the text that is shown (i.e. explain the bulleted statements). This will also keep the font size large enough so that your audience can see it easily.
- When verbally referring to a specific portion of a slide, use a pointer to briefly orient the audience.
- When you are not actively using the pointer, do not distract the audience by playing with it.
- Do not chew gum, fiddle with your jewelry, or wear a hat, even if these things comfort you.
- Do not put your hands in your pockets. If you are likely to forget, fill your pockets with pushpins beforehand.
- Do not draw more attention to bad slides by apologizing for them!

- Resist puns, obvious jokes, and overly rehearsed humor. Some use of humor is ok, but strive to give a professional talk.
- Minimize your use of crutches, "OK," "like," "um," "er," "sort of," "ya know," and "kind of." Especially "like." It's sort of like, ya know, when you use lots of filler words, it's like, um, people totally don't, like, even listen to you anymore. Bored audience members have been known to actually record the number of "likes" in talks.
- Adjust your speed or ask whether there are any questions, if you notice confused looks.
- If people are falling asleep, it is a sign that you are boring them. Speak up and become more dynamic, without getting carried away.
- When responding to questioners with faint voices, repeat the question loudly for the benefit of all.
- If you are unsure of the answer to a question, say so, but then give it your best try (unless you really have absolutely no guess as to how to answer the question). It's ok to think for a second or two about an answer, and it's also ok to present two sides of a story (e.g., "Some evidence indicates one thing, other evidence indicates another.") It's better to show that you are thinking critically about the science than it is to appear to be taking a one-sided stand for your pet hypothesis.
- Before giving your presentation, ensure that it will run (and that none of the fonts or symbols are changed or images lost) on a Windows machine. Do this before the last minute!

adapted from <http://www.swarthmore.edu/NatSci/cpurrrin1/powerpointadvice.htm>, by Colin Purrington (2005)