



TIPS TO CREATE AN EFFECTIVE POSTER PRESENTATION

A poster is a visual communication tool to translate a journal article into graphic form. Creating an effective poster can be challenging because you have to compress results from a large body of work onto a single sheet of paper. Your goal should be to create a good poster because it represents you and your work to your peers.

The first goal is to sufficiently attract the casual onlooker's attention so that he or she will stop and take a second look. After your poster has captured a viewer's attention, the second goal is for it to concisely communicate the results of your work. People who want more details and information can refer to a section on the poster that provides author contact information and can follow up with you after the conference.

Principles of effective posters

You can present information in a poster in a number of ways. The following principles generally apply to good posters:

A poster should present an overview of your work. It's not a journal article, so do not try to cram all the details onto the poster. A casual viewer should be able to glean your message in 3 to 5 minutes and read all the text in 10 minutes. Think of your poster as an illustrated abstract.

A poster is a visual means of communication. Even if your poster consists entirely of text, a clean and uncluttered presentation will attract readers and help them comprehend your work. So much the better if you can include graphical elements (such as figures, charts, and photographs), which can help reinforce your conclusions.

Determine how you will print your poster before you design it. Because not every printing option offers the same paper dimensions and because larger poster sizes generally cost more to print, first choose the paper size for printing and then design your poster accordingly. Then check with your printing vendor to find out whether you should be aware of any specific limitations or guidelines.

A poster should be organized in sections in a way that's similar to how a scientific article or oral presentation is structured. In your poster, lay out the sections in three or four columns. If the conference does not specify the sections that you must include, consider including the standard sections of a journal article: introduction, methods, results, and conclusions. You may also want to include an abstract, acknowledgments, and references.

A poster should have a main title that's readable from 25 feet away. People will be wandering through the poster session, so you need to catch their eye from a distance. A general rule is to use a 72-point type and a common font such as Times New Roman or Arial for your poster title and to use a smaller size of the same font for the section titles.

A poster should have body text that's readable from 4 to 6 feet away. Your poster may draw a crowd, and viewers will be more interested in your results if they can read about them without straining their eyes. Use 20-point or 24-point type and a common serif font such as Times New Roman for the body text.



A poster should have one or two fonts and a simple colour scheme. You should attempt to grab people's attention through the clarity of your presentation and impress them with the quality of your research. Do not distract viewers or dilute your message by using too many different colours, fonts, and font sizes.

Key points to remember about designing effective posters

The principles listed in the preceding section may seem like a lot to remember, but designing a good poster really comes down to the following three key points:

Make it easy for your readers. Viewers' attention will be in demand, so no matter how interesting your results may be, if they are badly presented, no one will take the time to read them.

The purpose of your poster is to present scientific information. Don't get carried away with using a lot of colours and fonts, which might distract from the presentation of your work.

Your poster is a visual means of information. If you have graphics that will help communicate your research results, you should include them. Additionally, keep the body text short and present only the key points.

The trick to producing a great poster is to embrace the rough draft process. Rough drafts are especially crucial in deciding whether you need to cut or add text or resize figures or fonts.

You should produce a rough draft at least one month before it is due and then ask several people to view it when you are not present. Ask them to leave their suggestions on small sticky notes that you provide for them and to comment on such things word count, prose style, idea flow, figure clarity, font size, and spelling. Note that you can print a miniature version of your poster on letter-sized paper to get a rough sense of layout challenges, but remember that a reduced version is hard to critique. Practice presenting your poster orally allowing time to answer questions.

Tips for designing your poster

Using a PowerPoint template for your poster

Unless you possess artistic ability and plenty of time, it is inadvisable to build a poster by cutting and pasting content onto panels of colored matte board, which was the default method for the most of the last century.

Instead, use a software program to create your poster. Template files for posters can be found on the Internet by conducting a search for "poster template" and then adding the program name (such as Microsoft Office PowerPoint 2003). You can download a PowerPoint template available (located at <http://www.swarthmore.edu/NatSci/cpurrrin1/postertemplate.ppt>) that is designed for a 36" × 56" poster but that can be easily modified for other sizes. To get started, just replace the "dummy" text and graphics with your content, if it is ready. In this template, page dimensions, column number, column width, and font size are all preformatted to produce a poster that is legible from a distance of up to six feet. This template was designed to retain white space, which is critical for a poster's readability.



Invariably, you'll need to change the layout of the poster to accommodate the needs of your topic. Try to keep your word count low to increase the likelihood that viewers will actually read your poster; aim for 1,000 words. This will be difficult if you attempt to fully document everything you have done, but posters with too many words will likely cause viewers to look at only your figures or, worse, to avoid your poster altogether.

Your poster may require different section headings, and you may want some text sections to be larger or smaller. You can create new sections and headings by adding text boxes, resizing the text boxes as necessary, and moving the elements.

When inserting graphical elements, such as graphs or charts created in Microsoft Office Excel 2003, photographs, and drawings keep the following in mind:

Tips for formatting

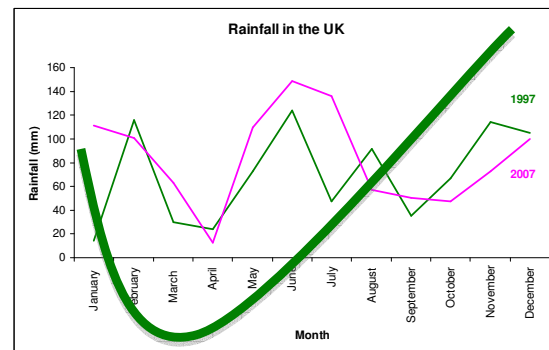
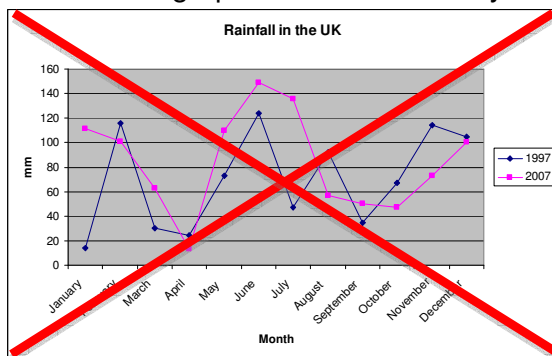
- Use a sans serif font (for example, Helvetica) for title and headings and a serif font (for example, Palatino) for body text (serif fonts are much easier to read at smaller font sizes).
- The width of text boxes should be approximately 40 characters (which is, on average, 11 words per line).
- Wherever possible, use lists of sentences, rather than blocks of text.
- Use italics instead of underlining.
- When using acronyms and numbers within body copy, scale down the font size by a couple of points so that the size of the acronyms and numbers doesn't overpower the lowercase text, which they would do if you left them at the default size.
- Set line spacing of all text to be exactly one, in case you have used superscripted or subscripted text.
- Correct any errors in spacing within and between words, especially before and after italic text. Note that you can use a single space between sentences (the "double space" convention was needed for typewriters, and people are slow to lose the habit). Use the find-and-replace feature to globally replace all double spaces with single spaces and to locate locations where too many spaces occur between words.
- Format your literature-cited contents according to the guidelines for your respective discipline. When asking somebody to proof your poster, specifically ask them to be critical of your citation style. If your reference list becomes too long, you can reduce the font size and make a two-column citation list.
- You can't use PowerPoint to wrap text around inserted figures. If you want to do this for a particular section, create the paragraph or section as a separate Word file (which you can use to wrap text), and then insert the Word file into your PowerPoint poster.

Tips for using graphs

- Graph titles are great for posters. Having short, informative titles helps lead the viewer more effortlessly through your poster.
- Add miniature illustrations to any of your graphs or tables. Visual additions help attract and inform viewers much more effectively than text alone.



- Most graphing software programs automatically add a key. If possible, you should delete the key and directly label the different elements in the graph. Because interpreting keys is sometimes very difficult, you should make your graphs as easy to read as possible.
- Eliminate “chart junk” to keep focus on data.
- Y-axis labels aligned horizontally are much easier to read and should be used wherever space allows.
- All graphs should have axis labels formatted in sentence case. Do not use title case or all caps.
- Never use coloured backgrounds, grid lines, or boxes in your graphs. If your graphing program provides these by default, delete them.
- Never display two-dimensional data in 3-D. Three-dimensional graphs may look good, but they obscure the true difference among bar heights.
- Make sure that details on graphs (and photographs) can be comfortably viewed from a distance of up to six feet away. A common mistake is to assume that figure axis numbers, labels, and figure legends are somehow exempt from font-size guidelines. On the contrary, most viewers will read only your figures.
- Clean graphs show data clearly and get across your desired message.



Tips for using photographs and other graphics

If you include a photograph, add a thin gray or black border to make the photograph more visually appealing. Just remember not to overpower the image with an overly thick line. Choose a line color that is subtly pleasing but barely noticeable to the viewer.

Use caution when incorporating graphics that you found on the Internet. Most Web images have 72 dots per inch of resolution, but printing at that resolution looks terrible, and the graphic will be a huge turnoff to prospective viewers. If you have access to a digital camera, use it to get a high-quality photograph of your study setup.

Institutional logos are great on departmental letterhead and college athletic caps, but the logos are less effective on posters. If you must add a logo, use a small version of the logo at the bottom of the poster in the acknowledgments section.

If you are attaching higher-resolution (for example, 1200-dpi) images or photographs directly onto your 300-dpi poster, choose matte finishes for illustrations whenever possible to minimize glare, because some of your viewers will be standing to the side of your posters at crowded poster sessions.



What sections to include and what to put in them

Title

An effective title conveys to viewers the issue, the approach, and the system (organism). Make the title catchy in order to reel in potential viewers. Maximum length: 1 to 2 lines.

Abstract

Don't include an abstract on a poster. If you are presenting your poster at a meeting, you will probably be asked to submit an abstract; however, this abstract is for inclusion in the "meeting catalogue," not for your poster. If, for some reason, you must include an abstract section on your poster, don't make your abstract long; aim for fewer than 50 words.

Introduction

Get your viewer interested about the issue or question while using the absolute minimum of background information and definitions. Quickly place your issue in the context of published, primary literature. Provide a description and justification of your general experimental approach, and give a hint at why your study is ideal for such research. Be sure to also give a clear hypothesis. Use a photograph in this section to quickly orient your viewers. Maximum length: approximately 200 words.

Materials and methods

Briefly describe experimental equipment and methods. Consider these guidelines:

- Use figures and tables to illustrate experimental design, if possible.
- Use flowcharts to summarize reaction steps or timing of experimental procedures.
- Include photograph or labeled drawing.
- Mention statistical analyses that were used and how they allowed you to address hypothesis.
- Maximum length: approximately 200 words.

Results

In the first paragraph, mention whether the experiment worked; then, in the same paragraph, briefly describe qualitative and descriptive results. In the second paragraph, begin presentation of data analysis that more specifically addresses the hypothesis. Refer to supporting charts or images, and provide engaging figure legends that can stand on their own; provide tables with legends, too, but opt for figures wherever possible. Maximum length: approximately 200 words, not including figure legends.

Conclusions

Remind the viewer of hypothesis and result, and quickly state whether your hypothesis was supported. Be sure to discuss why your results are conclusive and interesting. Point out both the relevance of your findings to other published work and the relevance. And be sure to include the future directions of your resource. Maximum length: approximately 300 words.

Literature cited



Follow standard format for your discipline exactly (don't wing this!). Find a journal article that supports your needed fact. Also, if you haven't read a journal article completely (for example, if you read only the abstract) does not cite it. Maximum length: approximately 10 citations.

Acknowledgments

Thank individuals for their specific contributions to your project (equipment donation, statistical advice, laboratory assistance, comments on earlier versions of the poster). Mention who has provided funding. Show sincerity, but retain formality. Do not list people's titles. Also include in this section explicit disclosures for any conflicts of interest or conflicts of commitment. Maximum length: approximately 40 words.

Further information

Use this section to provide your e-mail address, Web site address, and, if applicable, a URL where readers can download a PDF version of the poster. In PowerPoint, format the URL so that it isn't in colour and underlined. Maximum length: approximately 20 words.

Avoiding common mistakes

Too much information

The number-one mistake is to make your poster too long. Densely packed, high-word-count posters are basically manuscripts pasted onto a wall. Posters with 1,000 words are ideal. **Tip:** To view your word count in PowerPoint, click the **File** menu, select **Properties**, and then click the **Statistics** tab. If you feel that your experiment warrants an exception to this advice, ask someone, "What text, figure, or table can I delete or modify?"

Titles with colons

Titles with colons are clunky. These titles are sometimes used to inject humor into an otherwise boring poster topic, or to provide greater detail. If you absolutely must have a title with a colon, be sure that it's not overly silly and that it doesn't force your title text to spill onto a third line.

Titles with incorrect case

Format the title by using sentence case. Do not use title case or all caps, which both undermine naming conventions that depend on font formatting (for example, Latin binomials, genes, and alleles).

Incorrect formatting

Do not add bullets or otherwise punctuate section headers. The use of a larger font size for headers, coupled with a simple bold format, is sufficient for demarcating sections. Avoid blocks of text longer than 10 sentences.

When using acronyms and numbers within the body copy, scale down the font size by a couple of points so that the size of the acronyms and numbers doesn't overpower the lowercase text, which they would do if you left them at the default font size. Don't trust the TAB key to insert the correct amount of space when you are indenting a paragraph (the default tab space is usually too big). Set the tab space manually by using the ruler in the document.



Incorrect use of colour

Approximately 8% of males and 0.5% of females have some degree of colour-vision deficiency. Because there are so many different kinds of these deficiencies, it is sometimes hard to remember which colours and colour combinations are "safe." To see your poster as people with colour deficiencies would see it, you can upload an image of your poster (as a PDF file or JPG file) onto the Internet and run it through the free Vischeck service, which is located at <http://www.vischeck.com/vischeck/vischeckURL.php>.

In general, avoid using red and green together, and opt to use symbols and patterns instead of colours wherever possible.

Creating the poster in multiple operating environments

Complete the entire poster in a single environment. Switching between a PC and an Apple Macintosh computer can invite disaster down the road, sometimes in the form of lost image files, garbled graph axes, or printing problems.

Printing your poster

When it's time to print your poster, you'll find a number of printing options. To print the poster yourself, you need to use a colour printer that can handle large paper sizes. (If you don't have access to a poster printer, you have several other options:

- A local printing shop may have a suitable printer — to print your poster there, you will need to copy the poster file to a disk or USB flash drive.
- An online printing service can be used. For this option, you need to either upload the poster file to the service's site or send an e-mail message with the file attached. The printing service will print the poster and then ship the hard copy back to you.

Tips for presenting your poster

- Wear a nametag, if possible, so that viewers know that the poster belongs to you.
- Do not refer to your notes when explaining your poster. Prepare a 3-5 minute verbal explanation. Some people will ask you to "walk me through your poster". In making such a presentation don't read the poster. Instead give the big picture, explain why the problem is important and use the graphics on your poster to illustrate and support your findings and recommendations.
- Speak to your viewers as you explain your poster.
- Point to specific parts of your poster whenever possible so that viewers are aware of your progression.
- Avoid excessive focus on methods; it's the results and implications that count!
- Keep a black pen and correction fluid in your pocket in case a viewer discovers an embarrassing typo.
- If more viewers arrive halfway into your discussion of the poster, finish the walk-through before beginning discussion for the latecomers.
- Exhibit professionalism at all times when displaying (or standing by) your poster. Imagine that a viewer will be considering your application for a job ten years into the future or will be considering your graduate school application next week.
- Bring a small manila envelope of business cards to attach to your poster. Glue one of the cards to the outside of the envelope so that viewers will know its contents,



and write "please take one." (Note that your institutional logo will be on your cards, so having the logo on your cards will reduce the compulsion to place a logo on the actual poster.)

- If you must leave your poster, affix a note stating the expected time of return or where you can be found.
- Have on hand, but do not aggressively peddle, manuscripts and reprints of your work.
- Also have on hand full-colour, "shrunk" versions of your poster on 8.5" × 11" paper.
- Thank your viewers for visiting. If they have stayed more than four minutes, you have succeeded.