

Effective posters are well organized and concise, readable and comprehensible. Many posters suffer from easy-to-fix problems that make them ineffective, including:

- * objective and/or main point too hard to find
- * text too small
- * poor use of graphics
- * poor organization/structure

This quick guide has been developed by the Materials Research Institute at Penn State to assist poster designers in creating better, more effective scientific posters.

Disclaimer: This information is intended to help poster designers/presenters avoid common problems that will obscure their messages. Nothing discussed here will make up for poor content.

Getting Started

READ THE INSTRUCTIONS! Read ALL of the instructions supplied by the event planners, having an idea what these details are before you begin will make the whole process much easier.

GATHER YOUR INFORMATION. Determine if you have all the information, data, graphs, charts, photo, and graphics you will need. Having them in one place will make laying out the poster much easier.

SET A SCHEDULE. Define your milestones - this is especially important if the poster is multi-authored. Start with the due date and work backwards, allowing time for peer review and heavy editing.

Example Schedule

Week 0:	Present Poster
Week 1:	Final Print Make changes suggested by peers Distribute draft for peer review (round 2)
Week 2:	Make changes suggested by peers Distribute draft for peer review (round 1)
Week 3:	Edit your draft ruthlessly Create first draft of poster
Week 4:	Plan out poster Define message and write abstract



Creating an Effective Poster

A Quick Guide to Functional and Attractive Scientific Poster Design

Getting Focused

Developing your poster's content may seem like a breeze. After all, you just have to cut and paste parts of your research onto the board, right? Wrong! The final copy on a poster is very different from what most researchers generally write for other contexts. A poster calls for much more attention to visual impact. The restricted space of a poster requires careful condensing of ideas that we would write about at length for other forums. You will need to determine what's central to your topic and concentrate on that narrow focus - and to do that well, you will need to have a clear definition of your audience, message and objective.

Define your:

Audience - Use terminology and phrasing appropriate to the intended audience. To get and keep your audience's attention, consider what information sums up your work or is most important for your viewers to know. Then think about how you can best depict it—through graphics or text.

Message - Remember that your audience has limited time to view your poster. Imagine that there was only one thing you could say on the poster, what would it be? Keep it short and sweet, only show data that adds to your central message.

Objective - The average poster reader will spend less than 10 minutes viewing your work - and you have only 11 seconds to hook your audience before they move on. What do you want to achieve with your poster?

After you've determined audience, message, objective and how much space you'll have (which you know if you read the instructions supplied by the event planners), it's time to think about putting the poster together. Unlike a manuscript, posters can adopt a variety of layouts depending on the form of charts and photographs.

Layout

How you post information greatly affects your audience's comprehension and, ultimately, their interest in your work. An effective poster will maintain sufficient white space, keep column alignments logical, and provide clear cues to your readers how they should "travel" through your poster elements.

A poster that includes only text in a small font will not attract viewers from far away or close up. But a poster that uses large headings to announce topics, with clearly indicated topic areas, that includes graphics and text, that uses color and white space wisely will attract viewers.

Poster Tip: *Since you have only 11 seconds to hook your audience before they move on - try to incorporate a larger, eye-catching image in your poster layout.*



Layout ...continued.

Pieces you will need:

- * Title - make it succinct, and descriptive
- * Introduction - just the necessary information to give readers bearing on your topic
- * Material(s) & Method(s) - often omitting these is fine: try a handout for those who ask for it
- * Result(s) - images & graphs can be very effective, especially if supplemented with a brief text
- * Conclusion(s) - make sure all presented data supports your conclusion(s)

Additional pieces may include:

- * Literature Cited
- * Acknowledgements
- * Further Information Sources
- * Abstract

Note: Unless required, DO NOT include abstract on a poster. If required, aim for 50 words or less.

Consider using handouts that include the full poster in miniature on one face and all the other material on the opposite side. Methods, references, detailed contact information, advertise for a fellowship, or extra data are just a few good options for the flip side.

Poster Tip: *The number of handouts passed out can be a great way to gauge the success of your poster!*

Maintain a Consistent Visual Hierarchy:

Inconsistent styles give the impression of disharmony and can interrupt the fluency and flow of your information.

- * headings should appear in the same size and position on all areas
- * graphs should be of the same size and scale
- * if bold lettering is used for emphasis in one area, do not use italics for emphasis on others
- * captions for graphs, drawings and tables should be consistently positioned
- * if it's important, make it BIG - use image and type size proportional to importance
- * use simple figures and graphs, which should dominate the poster visually
- * do not overwhelm with excessive amounts of data - create a poster that encourages conversation

Poster Tip: *A clearly defined column format will make your poster easier to read in a crowd. (MRI offers downloadable column format PowerPoint poster templates at: www.mri.psu.edu/intranet/res_PPT2.html)*

Remember, your poster should have a good visual balance of figures and text, separated by white space. Balance occurs when images and text are reflected (at least approximately) across a central horizontal, vertical, or diagonal axis. This axis is known as the axis of symmetry.

Graphics

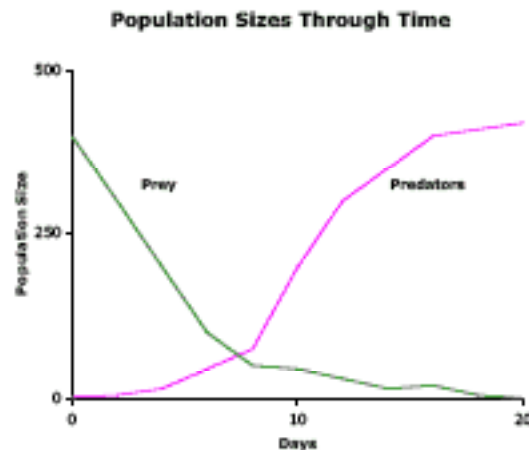
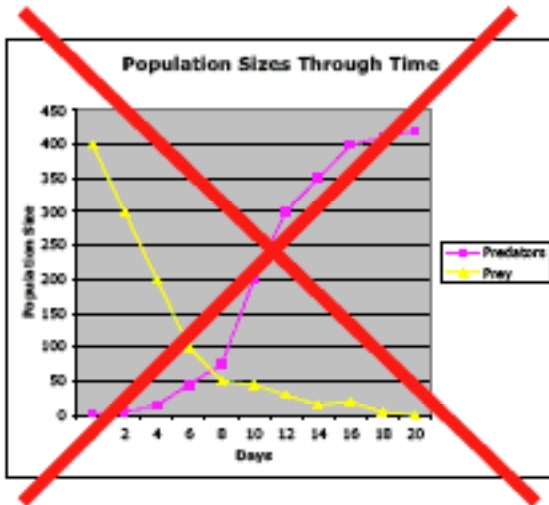
A picture may be worth a thousand words — but only if it is handled appropriately. The success of any poster relies on the clarity of the illustrations, charts and tables.

General

- * Diagrams, drawings, illustrations, tables and graphs should be labelled
- * Images and labels should be legible from a distance - a minimum distance of 6 feet
- * Use ‘arrows’ and ‘callouts’ to label components of a drawing or diagram
- * Self-explanatory graphics should dominate the poster
- * A minimal amount of text materials should supplement the graphic materials
- * Use empty space/margins between poster elements
- * aim for 40% graphic content, try to find ways to show visually what was done
- * graphics should be attractive, clear and specific - no smaller than 4 x 6 inches
- * crop and enlarge photographs to focus attention on significant details
- * use at least 300 dpi (dots per inch) for image resolution

Charts & Graphs (see example below)

- * Focus on relationships - exact values are usually not important.
- * Eliminate “chart junk” to keep focus on data (grid lines, detailed ticks on axes, data markers)
- * Label data directly whenever possible - legends force readers to look back and forth
- * choose graphs types appropriate to the information
- * annotations should be large enough and lines thick enough that they may be seen from a distance
- * NEVER attempt to have more than six line-graphs on a single plot
- * instead varying line thickness, use contrasting coloured lines in multi-line graphs





Text

Title Fonts:

The most important parts of the title banner, the title itself and the poster session number, should be readable from about 20 feet away. Your title will lure viewers closer to see your imaginative and exciting study. Make it easy on your information-saturated audience.

1. Use a simple, easy to read font. A serif style, such as Times is ideal.
2. Use boldface and first-character caps for the title itself.
3. The final size of letters in the title itself should be about 1.5 - 2 inches tall, or between 96-100 point size, when printed.

Content Fonts :

The rest of the copy and the body of the poster, should be readable from about 10 feet away.

1. Use boldface for the authors names - may be printed smaller, between 60-72 points
2. Use plain text, no boldface for affiliations - may be even smaller, between 36-48 points
3. Use boldface for the poster session number (if required)

Poster Tip: Remember posters are not publications, cut back on text....you can always supply handouts.

General:

- * Double-space all text
- * Minimize text - use images and graphs instead
- * Use left-justification; text with even left sides and jagged right sides, this is the easiest to read
- * All text should be large enough to be read easily from at least 6 feet away.
 - General rule of thumb for posters is no text should be less than 28 point if you want it read.
- * For section headings use 36-40 point
- * For supporting text use no less than 28 point
- * If you must include narrative details, keep them brief - no less than 28 point plain text (not bold)
- * Keep text elements to 50 words or fewer
- * Use phrases rather than full sentences - in an active voice
- * Pay attention to text size in graphs, charts, and figures - they must also be large enough to read
- * Avoid long lines of text-- the reader can get lost trying to find the next line.
- * Use left-adjusted format; avoid right-adjusted format
- * Edit all text to simplify verbiage, to reduce sentence complexity, and to delete details

Poster Tip: Summaries merely restate results; conclusions interpret the results and identify their significance. In the conclusion section, do not merely repeat the results; state the interpretations. Also, forego the temptation to classify results by methods alone: a large heading that only states a method says that you care more about techniques than answers.

Color

Approximately 8% of males and 0.5% of females have some degree of color-vision deficiency. They see the world very differently. Because it is sometimes hard to remember which colors and color combinations are “safe”, always test how effective your poster will be to someone with color-blindness by printing your poster on a black & white or greyscale printer.

General:

Use colors sparingly and with taste;

- * Use color conservatively. Color should be used only to emphasise, differentiate and/or to add interest. Do not turn your poster into an Easter egg - overuse of color is distracting!
- * Try to avoid using large swathes of bright garish colours like bright green, pink, or orange
- * Choose background and foreground colour combinations that have high contrast and complement each other - black or dark blue on white or very light grey are excellent combinations.
- * Muted, subtle, light colors, or shades of gray, are best for area backgrounds. Use more intense colors as borders or for emphasis, or as background for the poster as a whole.
- * Limiting colors to two or three complimentary colors will unify the poster.
- * If necessary for emphasis, use a single additional color for outlining an image.

Editing

The number one mistake is to make your poster word-heavy. Densely packed, high word-count posters are basically manuscripts pasted on a wall, and do not attract audiences. Posters with 800 words or less are ideal. Find someone to help you edit. Ask them “What text, figure, or table could I possibly delete or reduce?” (*MRI offers a peer assessment form at: www.mri.psu.edu/intranet/posters/posterAssessment.pdf*)

Poster Tip: To view your word count in Powerpoint, go to the File menu and select Properties.

Edit Ruthlessly! There ALWAYS is too much text in a poster.

- * Use short sentences, simple words, and bullets to illustrate discrete points
- * Avoid using jargon, acronyms, or unusual abbreviations
- * Posters are visual presentations; the text materials serve to support the graphic materials
- * Look critically at the layout - about 20% text, 40% graphics and 40% empty space is great
- * When in doubt - delete it. (Keep chanting this mantra: There always is too much text.)
- * Use the active voice; “It can be demonstrated” becomes “The data demonstrate”.
- * Delete all redundant references and filler phrases, such as “see Figure ...”
- * Remove all material extraneous to the focal point of the poster.
- * Graphs & figures should have explanatory captions - no need to label with Figure 1, Table 2, etc.
- * A poster is not a publication of record, so excessive detail is not necessary.
- * Don't forget the obvious - use spell check!