# POSTERS FOR SCIENTIFIC MEETINGS

POSTER SESSIONS have gained increasing acceptance and popularity at scientific meetings. Although most topics are presentable either as talks or as posters, some topics lend themselves best to graphic presentation. Many authors, moreover, prefer person-to-person discussions, with their illustrative material at hand, rather than speaking to a large audience in a formal setting. Authors and attendees alike find the opportunity rewarding to exchange ideas freely and at some length. Many attendees appreciate being able to walk quickly past several presentations, scanning each for its general content, before returning at leisure to the displays they find most interesting.

Most scientific meetings now allow abstracts to be submitted for either an oral presentation or a poster presentation. Abstracts for poster presentations are published in the proceedings of meetings along with those for oral presentations, and they carry the same prestige. At the larger 3- and 4-day meetings, poster sessions commonly run for half a day each, and authors are expected to be present while their posters are on display during a specified period, generally 2 hours. During each of these half-day sessions as many as 30 to 60 posters may be displayed, so competition for attention is keen. At smaller gatherings, a single group of posters may be shown during the whole meeting.

## PLANNING THE POSTER

Good science coupled with uncluttered and colorful design, brief and legible text, and concise organization equals a good poster. As a participant, you should learn specifically where the display area is (by map or number designation) as early as possible and the size and orientation of the display boards. Individual display areas commonly have tack boards mounted long-side horizontally at eye level and measuring about 4 by 8 feet. Three boards of this size commonly are joined to form a booth. Vertically placed display boards should be discouraged. They crowd the available space and cause design problems because much of the display area is well above or below eye level. You need to know the dimensions of your display boards, and whether the long side will be horizontal

or vertical, before you begin to design your poster; a call to the sponsoring society is necessary if this information is not given with notification of acceptance of the abstract. Also knowing in advance the color of the display board may prevent a clash with the colors of the poster. As a rule of thumb, allow 6 weeks of discontinuous work to prepare an attractive exhibit, to allow time to print photographic enlargements, to gather all needed materials, and to actually execute the poster.

New and exciting ideas based on sound research can draw deserved recognition through a well-written abstract and an eye-catching poster design. However important your work, you must recognize that attendees at a scientific meeting most likely have not read your abstract before they walk into the display area. Their attention will invariably be drawn to crisp, clean posters and snappy titles. The title, composed months before, must be directed toward this strolling audience. Think of the title as a newspaper headline vying for attention. Once the viewer's attention has been caught by a display that looks interesting, all aspects of the design and the science will work together to keep or lose that attention.

## SCIENTIFIC CONTENT

The story you tell must be interesting and your research must be sound, but neither need be uncontroversial. Work that encompasses other disciplines and has broad applications or implications is most likely to be accepted for poster presentation and most likely to receive feedback.

Authors commonly try to tell too much. Use restraint and present only enough data to support your conclusions. Modesty here, however, is not a virtue—the significance and originality of your work should be made clear to viewers who may be unaware of the extent of your contribution.

## DESIGN

The subject of design is complex, and rules can be broken creatively and pleasingly if you have an artistic flair. A few guidelines, however, will help you make a poster more accessible, attractive, and interesting.

► From 10 to 15 feet away the viewer should glimpse an easy-to-read title and a neat uncluttered arrangement of illustrations and text. Your name should not be hard to find. Where to start looking and where to go from there should be obvious—generally left to right, top to bottom, like a comic strip. The component parts may be numbered to facilitate reading, or arrows can graphically lead the viewer through the display (fig. 55).

► Leave some open space in the design. When you have finished the design, as when you have packed a suitcase, take out half. Tightly packed space tires the eye and the mind.

► Use elements of different size and proportion. Same-size, same-proportion components make for a boring design. For areas of particular emphasis, try different shapes. Curved shapes or lines attract the eye if most other lines are straight. Straight lines draw attention if others are curved (fig. 56).

► A large or bright center of interest—a bold cross section, a colorful paleogeographic map, a blownup photograph of a new species or of an outcrop—will draw the eye to the most important point of the poster. For a modest price, poster-size color prints can be made from 35-mm slides or negatives at most photographic shops. Computer graphics can be enlarged, reduced, and manipulated in various ways.

► Emphasize simplicity. Make all illustrations bold and simple. Leave out unnecessary detail.

► Convert tabular material to graphics. Try scatter plots, bar graphs, triangular diagrams.

► Actual rock specimens or fossils add a nice touch of authenticity. They can be fastened to poster board with silicone glue or wires. Display large specimens on a table.

► Make a scale drawing of your tentative layout and have a few colleagues criticize its overall design.

## Lettering, Line Weights, and Color

Lettering should be legible 5 feet away; senior scientists should not need a reading glass. Minimum type size should be no less than 18 point and the style should be bold or semibold in clean and simple letters. Title lettering should be about 2 to 3 inches high, subheadings ½ to 1 inch. Office- and art-supply stores have a wide variety of stick-on and rub-on letters in various colors and sizes that are ideal for titles and subheadings. The sponsoring organization may choose to prepare the title, for uniformity, but take along your own in case theirs is too small. For lettering
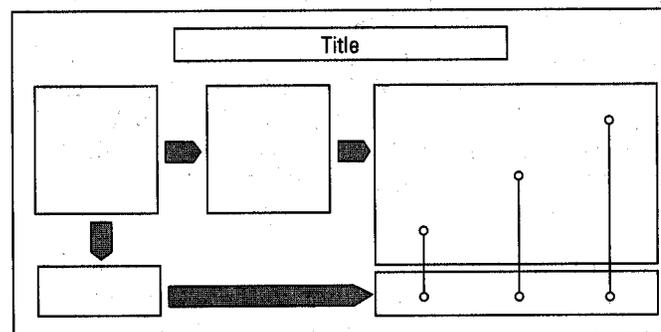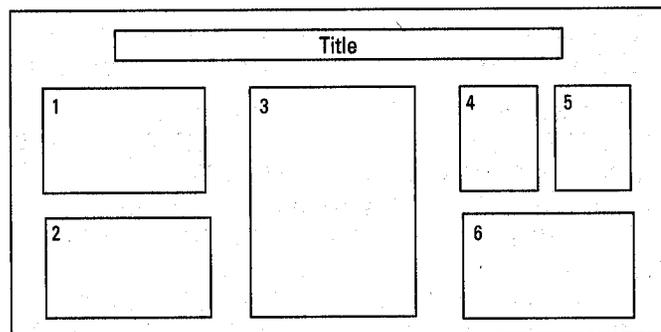


**Figure 55.** Two methods of leading viewers through poster: numbers and arrows.
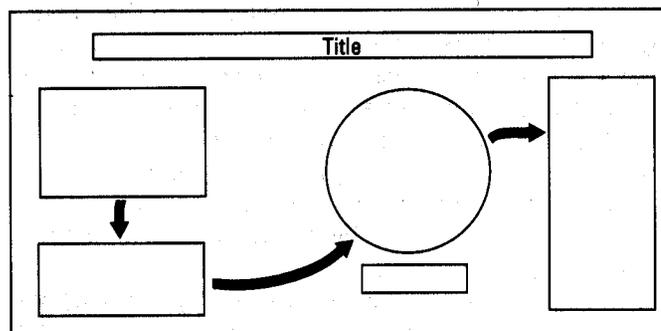


**Figure 56.** Attention-getting combination of curved and straight shapes and lines.

other than titles and subheadings, use uppercase and lowercase letters in combination.

Uppercase type—all in capital letters—is harder to read than lowercase type. If you don't believe it, contrast this paragraph with the one below, which is printed in capital letters only. Words cast in uppercase have less diversity and character than those in lowercase and, therefore, are less quickly caught and recognized by the eye and mind. Slow recognition slows comprehension. All-cap type is fine for short titles but not for sentence content, either in the body

of a report or in the brief captions for a poster session. Do your reader a favor by using lowercase type.

UPPERCASE TYPE—ALL IN CAPITAL LETTERS—IS HARDER TO READ THAN LOWERCASE TYPE. IF YOU DON'T BELIEVE IT, CONTRAST THIS PARAGRAPH WITH THE ONE ABOVE, WHICH USES CAPITALS JUST TO FLAG THE FIRST WORD OF EACH SENTENCE. WORDS CAST IN LOWERCASE HAVE MORE DIVERSITY AND CHARACTER THAN THOSE IN UPPERCASE AND, THEREFORE, ARE MORE QUICKLY CAUGHT AND RECOGNIZED BY THE EYE AND MIND. QUICK RECOGNITION ENHANCES COMPREHENSION. ALL-CAP TYPE IS FINE FOR SHORT TITLES BUT NOT FOR SENTENCE CONTENT, EITHER IN THE BODY OF A REPORT OR IN THE BRIEF CAPTIONS FOR A POSTER SESSION. DO YOUR READER A FAVOR BY USING LOWERCASE TYPE.

Serif typefaces are easier to read than sans serifs. The serifs (feet) add character to the letters and enhance reader recognition, which in turn increase reading speed and comprehension. Sans serif typefaces are appropriate in brief headings or titles, where they can be eyecatching, but they should be used elsewhere with discretion. Contrast this paragraph with the one below:

Sans serifs typefaces are harder to read than serif typefaces, because the serifs add character to the letters and enhance reader recognition, which in turn increase reading speed and comprehension. Sans serif typefaces tend to be dull and tedious. They are appropriate in brief headings or titles, where they can be eyecatching, but they should be used elsewhere with discretion. Contrast this paragraph with the one above.

Text material can be typed (about 12-point size) and then enlarged on a copying machine to as large as 24 point without serious loss of clarity, if a carbon ribbon and a clean type element are used. This method is the least expensive way to produce neat-looking text material (fig. 57). Text may also be enlarged photographically. For a professional appearance, use a lettering machine that produces strips of stick-on text. Apply these lines of text in final size to plain white paper, then photograph them so the glossy tape will not show.

Both the typed lettering and the stick-on lettering can be combined with black-and-white line drawings before the final copy (copy-machine enlargement or photograph) is made. All drawings of maps, diagrams, fossils, cross sections, and other figures should use a line weight that will be no thinner than 0.70 mm

(No. 2 pen) in the final product. Bolder lines are preferable. Keep the drawing simple by omitting extraneous details.

Color is as complex a subject as design and in fact is an element of it, but there are no set rules for its use. Some authors prefer muted colors; others like deep or bright ones. Any color can be attractive, within some constraints. The temptation is to use color everywhere. Don't. The viewer's eye will jump erratically around the poster instead of tracking through it to the crucial points. The less important parts of the poster—the necessary background information and supporting data—will seem to recede into the background, as they should, if done in cool blues, greens, and grays. The featured parts can then be highlighted in warm reds and yellows, black if the background colors are soft, or white if the background colors are bright or deep. In choosing colors, be aware that lighting in the display area may not be optimal.

Color should be applied to the black-and-white drawings after they are photocopied unless the cost of color printing is no object. Transparent or opaque sheets of stick-on color provide the most even shading, preferably with a nonglare matte finish. Colored stick-on tape comes in widths of $\frac{1}{32}$ to 2 inches. Flexible tape can be used for linework. Tape is perfect for bar graphs and histograms, for borders, and for leaders from one element of the poster to another. Colored stick-on dots, squares, and triangles are available in various sizes. Large colored arrows can be cut from stick-on tape or from stick-on color sheets.

Subtropical swamp traversed by la region, the pantanal. Geologic reported. Most related informat geophysical, geomorphic, or hydro

Subtropical swamp travers region, the pantanal. reported. Most related i geophysical, geomorphic,

**Figure 57.** Typed text enlarged on a copying machine to about 24 points.

### Computer Printouts

Computer printouts are poor copy for posters. The standard type size is too small and the line weight is too thin. Computer programs are available, however, to enlarge (or reduce) maps on printers or on digital plotters. If printouts are used, enlarge the tabular material to improve legibility; add color with stick-on tape to enhance lines and enliven graphics.

### Text

The text should be extremely brief, or most of the viewers will walk away without reading it. Some authors like to include their full abstract as part of the poster, but few viewers will read it. Expect more success from a succinct statement of major conclusions at the head of the poster—perhaps as an expanded subtitle. Present the supporting text in brief segments along with the appropriate illustrations, and make the significance of the findings forcefully clear at the end. Aim for "Wow!" from the viewers as they walk away. Handouts of the abstract may be made available for those viewers who are really smitten.

## MOUNTING, PACKAGING, AND DISPLAYING

All poster elements should be mounted with an adhesive on poster board or on ⅛-inch foam-core board so they will lie flat. For a cleaner look, mount the caption on the same board as the illustration. A half inch or so of the colored poster board extending beyond the edge of the illustration makes an attractive frame. Select the mounting color carefully to avoid overpowering the picture. Illustrations mounted on white foam-core board can be edged with colored stick-on tape.

Your poster may have to be taken to a distant convention. To avoid the panic of lost luggage if you are traveling by air, make the poster elements small enough to package within the carry-on dimensions, generally 17×22 inches, but call the airline to be sure.

You may have only a short time to set up your display, so prepare for it in advance, and have the following items in an emergency kit:

► tape measure
► 9-foot length of string
► box of clear push-pins (longer than standard if mounted illustrations are thicker than one-eighth inch)
► box of thumbtacks
► box of dressmakers' round-headed pins
► roll of double-stick tape
► scissors
► glue
► package of tissue paper.

Have a sketch of the poster layout, showing measured positions of a few key components, so you will know where to place them. Set up a level line, if needed, by tying the string between push-pins set a measured distance above the bottom of the display board. The poster elements can be fastened to the board without visible attachments, as shown in figure 58, or can be attached with the push-pins (or dressmaker's pins) or with lots of double-stick tape. When you remove the display, if you've used double-stick tape, you'll need to put sheets of tissue paper between the components when stacking them to keep them from sticking together.
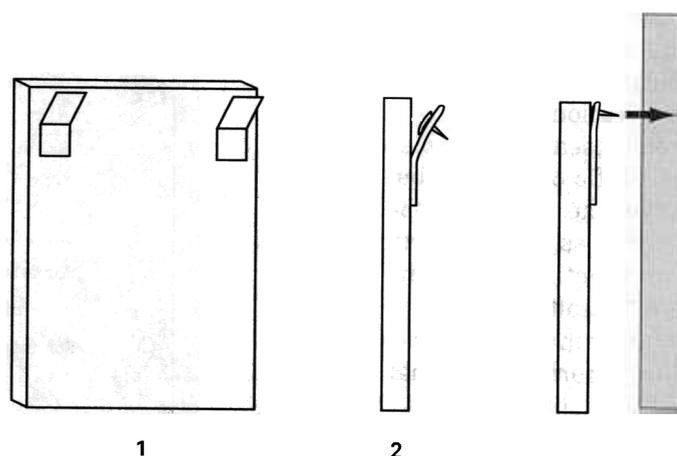


**Figure 58.** A method of using concealed thumbtacks to attach poster elements to the display board. You can also use Velcro.

(1)  Attach tabs to back of mounted illustration. Leave upper half of tabs free.
(2)  Push thumb tacks through upper half of tabs.
(3)  Push illustration against bulletin board.

## THE ALTERNATIVE POSTER

The professional-looking poster just discussed has an attractive counterpart. If artistically inclined, you can sketch a poster entirely by hand. Follow the same science and design guidelines as above, but execute with colored felt-tip markers on poster board of pleasing complementary or neutral color. Text material equivalent to a minimum of 18-point type is easy to do by hand with felt markers over lightly penciled guidelines. The less formal result is fast and inexpensive, and if neatly and imaginatively done can have a very special charm.