How to Prepare a Poster

Poster presenters and conference organizers alike should take posters seriously, giving thought to their preparation and display and to their role in a conference.

by Sven Hammarling and Nicholas J. Higham

Poster sessions are an increasingly important part of scientific conferences, and many of us are rather inexperienced in their preparation and presentation. Having been involved in organizing and judging poster sessions, however, we have given some thought to what we consider to be desirable features of a poster. (We do not address here the publication of the poster material in a conference proceedings.)

What Is a Poster?

A poster is very different from a paper or a talk, and so different techniques need to be used in its preparation. In particular, a poster is not a conference paper, and simply pinning a paper to a poster board usually makes a very poor poster. A poster board is typically 4 feet high and 6 feet wide, but the reverse orientation (tall and thin) is also seen. It is advisable to check beforehand on the size of the boards that will be available to you. A poster itself is a visual presentation comprising whatever the contributor wishes to display on the poster board. Usually, a poster is made up entirely of sheets of paper pinned or attached with velcro strips to the board, but there is no reason why other visual aids should not be used. The pins or velcro are usually provided with the board by the conference sponsors.

The purpose of a poster is to outline a piece of work in a form that is easily assimilated and stimulates interest and discussion. The ultimate aim is a fruitful exchange of ideas between the presenter and the people reading the poster, but you should not be disappointed if readers do not stop to chat—a properly prepared poster will at least have given useful information and food for thought.

A Poster Tells a Story

In preparing a poster, simplicity is the key. A typical reader may spend only a few minutes looking at the poster, so there should be a minimum of clutter and a maximum of pithy, informative statements and attractive, enlightening graphics. A poster should tell a story. As always in a scientific presentation, the broad outline includes a statement of the problem, a description of the method of attack, a presentation of results, and then a summary of the work. But within that format, there is much scope for ingenuity. A question-and-answer format, for example, may be appropriate for part of the poster.

A poster should not contain a lot of details—the presenter can always communicate the fine points to interested participants. In particular, it is not a good idea to present proofs, except in brief outline, unless the proofs are the focus of the presentation. Keep in mind that the poster will be one of many in the exhibition area: You need to make sure that it will capture and hold the reader's attention.

The poster should begin with a definition of the problem, together with a concise statement of the motivation for the work. It is not necessary to write in complete sentences; sentence fragments may be easier to comprehend. Bulleted lists are effective. An alternative is to break the text into chunks—small units that are not necessarily paragraphs in the usual sense. For presenting results, graphs

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and figures—easier to scan than the columns of figures in a table—are even more appropriate than in a paper. Legends should be minimal. A brief description of the implications of a graphic, placed just above or below it, is helpful. For ideas on graphic design, a wide selection of books is available; either of the books by Tufte [3, 4] would be an especially good choice. Conclusions, again, should be brief, and they should leave the reader with a clear message to take away.

Designing Your Poster

Suggestions on the physical design of a poster range from the obvious to the not so obvious. First, as we mentioned earlier, it is definitely unacceptable to post a copy of a paper!

A poster is usually formed from separate sheets of letter paper: 8 × 11 inches (U.S.) or A4 (Europe). The number of pages should be minimized—for these sizes a suggested maximum is 15. But larger sheets, or even sheets of differing sizes within one poster, can also be very effective.

Whatever the size of the sheets, the typeface chosen should be considerably larger than standard. Because not all readers will have perfect eyesight, and because the crowd of readers around a popular poster may be several people deep, the type should be easily readable by a person standing a few feet away. In particular, the title of the poster and the author's name should be large and prominent. If it is not convenient to print directly at the desired typesize, pages can be magnified on a photocopier. Good use can be made of color, both to provide a more interesting image and for color coding of the text. A colored backing card for each sheet can be effective. For added interest, try including an appropriate cartoon, photograph, or quotation. There is plenty of scope for creativity.

If the sheets are arranged as a matrix, two layouts are possible: horizontal (reading across the rows) and vertical (reading down the columns). While the horizontal ordering is perhaps more natural, it has the major disadvantage of requiring the reader to move to and fro along the poster; if there are many readers, congestion can result. A vertical ordering is therefore preferable, although other possibilities should be considered as well. If you are comparing three methods, for example, you could display them in parallel form, in three rows or columns, perhaps as a "display within a display." Consider the possibility of arranging the poster to represent some feature of the problem, such as a particular sparsity structure of a matrix. If there is any doubt about the order in which the sheets should be read, guide the reader by numbering the sheets clearly or linking them with arrows. Think carefully about the use of the poster board. One extreme is to spread the sheets out to make full use of the board—taking care to position them at a height at which they can be read by both the short and the tall. If there are only a few sheets, it may be best to concentrate them in a small area, where a reader can proceed from beginning to end while standing in one position. Images of some of the posters presented at the IMA Conference on Linear Algebra and Its Applications, held at the University of Manchester in July 1995, are available on the World Wide Web at the URL http://www.ma.man.ac.uk/MCCM/laa95.html. Several examples of layout and further discussion are given by Matthews [2].

Transportation and the Poster Session

Transporting a poster can be a problem if it contains large sheets of paper. Rolling the paper into a cylinder is the most common system. You will usually be allotted plenty of time to set up the poster, so it may be easiest to bring it in pieces, to be assembled on site (but be sure to work out the layout beforehand

—and bring a diagram!). If the work presented in the poster has been described in more detail in a paper, consider making the paper available as a handout at the poster session.

Once the session starts, stand near the poster but not in a position that obscures it from view. Be prepared to answer the questions that a good poster will inevitably generate. But keep in mind the advice of one expert: “A presenting author at a poster session should behave like a waiter in a first-class restaurant, who is there when needed but does not aggravate the guests by interrupting conversation every ten minutes to inquire whether they are enjoying the food” [1].

A Word to Conference Organizers

If we wish presenters to take poster sessions seriously, and if we want the submission of a poster to be seen as a viable alternative to giving a talk, then it behooves conferences organizers not to treat the presenters as second-class citizens. This means making poster sessions an integral part of the conference program, providing appropriate facilities for the setting up and presentation of posters, and encouraging conference participants to attend the poster sessions. Proper time should be allowed in the program for the poster sessions; adequate boards, fasteners, and space should be provided, and the poster rooms should not be remote from the rest of the conference. If the dining area is large enough, consider having some posters there—a good audience is assured! A poster prize is also worthy of consideration.

Our experience suggests that the effort of encouraging poster presenters is rewarded with posters of sound technical content and pleasing visual effect.

References [1] Robert R.H. Anholt, *Dazzle ’em With Style: The Art of Oral Scientific Presentation*, W.H. Freeman, New York, 1994.
[2] Diane L. Matthews, *The Scientific Poster: Guidelines for Effective Visual Communication*, Technical Communication, 37 (3) 1990, 225–232.
[3] Edward R. Tufte, *The Visual Display of Quantitative Information*, Graphics Press, Cheshire, Connecticut, 1983.
[4] Edward R. Tufte, *Envisioning Information*, Graphics Press, Cheshire, Connecticut, 1990.

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