

## Chapter 12

# Preparing a Poster

*Poster sessions, pioneered in Europe, made their first appearance at a major U.S. meeting in Minneapolis earlier this month at the Biochemistry/Biophysics 1974 Meeting.*

— THOMAS H. MAUGH II, *Poster Sessions: A New Look at Scientific Meetings* (June 1974)

*Visualizing a poster in its entirety at the planning stage is a must.*

— JOHN D. WOOLSEY, *Combating Poster Fatigue* (1989)

*Calvin: Want to help me make a poster?...*

*Hobbes: Sounds good. What's our winning poster going to say?*

*Calvin: That's where you come in.*

— CALVIN, *Calvin and Hobbes* by Bill Watterson (1994)

*A picture is worth a thousand words.*

— Anonymous

Poster sessions are an increasingly important part of scientific conferences. In this chapter<sup>19</sup> I offer some advice on the preparation and presentation of posters, something in which many of us are rather inexperienced.

### 12.1. 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 organizers.

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.

### 12.2. 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 need not have the same title as a paper on which it based—a more declarative or provocative title may help to grab attention. Thus “Accuracy and Stability of the Null Space Method for Solving the Equality Constrained Least Squares Problem” could be replaced by “The Null Space Method is Stable”. Short section titles such as “Introduction”, “Analysis”,

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<sup>19</sup>This chapter is based on [129].

“Experiments” may be less effective at drawing the reader in and providing an overview of the poster than longer, more informative phrases. For example, the first section might be titled “Three variations of the null space method” (omitting a tempting initial “There are”), and the section reporting experiments might be headed “The bound provides good error estimates in practice.”

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. As when producing slides for a talk, 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.

An abstract should not be necessary, since it may already appear in the conference program and it would (presumably) repeat what is already concisely described on the poster.

For presenting results, graphs—easier to scan than the rows and columns of figures in a table—are even more appropriate than in a paper, but they should be simplified as much as possible. In particular, labels 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, such as any of those by Tufte [275], [276], [277].

Conclusions should be brief and they should leave the reader with a clear message to take away.

### 12.3. Designing Your Poster

A poster is usually formed from separate sheets of letter paper:  $8 \times 11$  inches (US) 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 effective.

It is worth repeating that it is definitely unacceptable to post a copy of a paper.

The typeface should be considerably larger than for a normal document. Not all readers will have perfect eyesight and light levels may be low. Moreover, the crowd of readers around a popular poster may be several people deep, so the type must be easily readable by a person standing a few feet

away. The title of the poster and the author's name should be large and prominent, but should not overwhelm the poster.

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 colour, both to provide a more interesting image and for colour coding of the text. A coloured 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.

The text itself should be composed of short sentences and paragraphs. To transmit the important information effectively, try to put the key terms near the start of each sentence. Thus, instead of writing

In designing or choosing a summation method to achieve high accuracy, the aim should be to minimize the absolute values of the intermediate sums  $T_i$ .

write

For high accuracy, minimize the absolute values of the intermediate sums  $T_i$ .

(That this statement applies to summation is assumed to be clear from context.)

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. Several examples of layout and further discussion are given by Matthews [195]. Woolsey [301] offers many useful suggestions on poster design and gives two informative annotated examples

of posters describing his paper—one good, one bad. Other useful references are Briscoe's *Preparing Scientific Illustrations* [38] and Anholt's *Dazzle 'em with Style* [9]

## 12.4. 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" [9].

## 12.5. 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 behoves 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 worth considering.