EFFECTIVE POSTER PREPARATION & PRESENTATION

SITARAM DIXIT

Corporate Manager – Fragrances, S. H. Kelkar & Company Pvt. Ltd.

INTRODUCTION

People attend a professional conference for a variety of reasons. It can be to listen and understand newer ideas and concepts discussed at the podium, to share ideas on an informal basis, or simply to get together and catch up on the lives of old friends, and colleagues. It also presents an opportunity to make contact with new colleagues who might share our professional interests, often leading to fruitful new directions. Another important goal of a seminar or conference is also to present our work to the industry at large either through a poster or oral presentation.

WHY POSTERS

The best reason for doing posters should be its contents. If you have to present complicated methods or test results then, it is wise to present the idea in a poster form, where colleagues are able to take their time with the information and ask questions at greater length to the author. Likewise, if one is presenting something a bit arcane and difficult to fathom (SCODET ASIA topics are normally not!), then a poster presentation is ideal as it enables the author to spend time with colleagues more interested in the specific field, rather than speaking to a lecture room full of folks who neither follow the presenter nor their work. In any case, posters and paper presentations are interchangeable, if ever the need be.

Experienced members of the faculty reasonably advice and encourage students to offer a poster presentation, rather than an oral or podium presentation. First time inexperienced students can sometimes become significantly nervous or catatonic during a podium presentation. Posters cause less trepidation and alleviate avoidable stress. Most professional conferences are full with oral papers and even if one is comfortable in giving a talk, organizers actively encourage student authors to do posters instead to accommodate a lot more presenters than possible in the limited time available.

Speakers for oral paper sessions normally have about 20 minutes to present their viewpoint. Allowing time for the session chairperson to introduce the speaker, and for the audience to ask a few questions afterward, the speaker will be lucky to squeeze in 15 minutes for the actual talk. In the course of a two – three day conference, numerous papers and posters are there to present, and a presenter must take utmost effort to make one's material stand out in the crowd.

This paper written on the request of students, participating in their first professional conference **(SCODET ASIA 2007)**, will provide some helpful tips & guidelines on the effective ways to present scientific information through posters. In perspective, other colleagues might also find the information useful. The guideline assumes that the audience comprises of professionals from different disciplines and hopes to help students improve their poster presentation skills in this milieu.

The various tips provided in this paper come from the author's, situational likes and dislikes, personal experience, and study on this subject. Poster presentation tips given are only suggestions and not sacrosanct rules, as this author believes that being innovative and different, occasionally breaking traditions, without being outlandish is right and need of the hour. In any case, there is no single recipe for success as in all creative efforts, content, the way of display, style, format, colour, readability, attractiveness, and showmanship are important.

POSTERS

Posters are neither, simple journal papers pasted on to boards nor mounted visuals. They are well-designed effective presentation tools that convey your thoughts to the viewer. The basic purpose of posters is to present it to an audience walking through the exhibit with the presenter usually standing next to the poster, and permit the visitor to engage in a one-on-one discussion with the presenter if need be.

Posters can also be stand alone presentations for passersby to watch, read and understand all by themselves. Posters have to communicate your work first by orienting the audience who are not comfortable and seated, but standing with distractions due noise and movement of people all around. Given the distractions in an exhibition place, a journal article if tacked onto the board will fail to create any effect because the audience does not have enough time to concentrate and read it and many will not even bother to glance on to the journal article tacked onto a board.

Now how to make an effective poster is the question. The answer is not simple as expectations by the audience will differ significantly based on the discipline and the subject matter discussed. What an audience of a life science poster session expect will differ significantly from what the audience of an engineering or technology poster session will expect. This paper presents some general guidelines that could apply to most situations.

PLANNING CONTENTS

The most important point one has to remember while planning the content of posters is that it should highlight only one single idea or viewpoint, without any ambiguity. In a typical scientific study, one would have tested a number of closely related hypotheses. However when posters are designed the presentation should only lead and revolve around a singular stance. In case the study concludes on a couple of different issues, it is preferable to split the study into two separate poster presentations for better emphasis.

One should define the central message clearly and spend sufficient time thinking about it before putting it in words. Complete clarity in this respect is essential for effectively assembling the thoughts onto the poster and for subsequent discussions with visitors viewing the posters. All presentations should have a summary stated in very simple words without any jargon and in not more than 25 words.

The poster should be extremely concise, as no one wants to read ten pages of text with a lot more posters waiting to see. An effective poster has minimal text in active voice but at the same time complete, enough for the reader to understand the subject. Discuss verbally with colleagues, friends and relatives, and if they understand the outlined contents, then you are right on track.

An important step in developing a poster is selection of crucial points, brutal editing, and repeated proof reading to eliminate all errors. In many cases, even an abstract is not required. The poster is not a publication of records, so excessive detail about methods, or vast tables of data are not necessary. If required this can be individually discussed with interested persons during or after the session, or presented in form of a handout. Once the central message is finalised the supporting information's are decided.

BASIC GUIDELINES

Posters can follow the same guideline as a general paper, but not one with a long, tortuous thread as it is uninteresting to read or digest. Break the poster into sections, much like a scientific article, with titles and sub titles. It should start with an introduction, procedure, results, discussions, conclusions and its significance to the industry or user. However, unlike in an article where one has all the space to write at liberty, posters have to present all the relevant information in very concise manner. To achieve this it is better to curtail every section of the poster to 25 words or less maintaining uniformity.

Use attractive background, maintaining modesty. Make text and figures less intrusive without being casual. Use of several background colours, unrelated to the poster's content will only stimulate the viewer's brains but will not lead them logically through the presentation. Although it is true that the posters contents counts more than its external appearance, it is also equally important to remember that a clumsy poster board will hardly draw attention or attract viewers in droves.

Experts advise presenters to use the all important KISS principle**. (Keep It Simple Stupid!).** Write in simple language never cryptically. In clear, jargon free terms the poster must explain the problem, its significance, strategy to address the problem, the experiments performed, the results obtained, the conclusions, and, optionally, caveats (and reservations) and / or future prospects.

Abstract: It contains the objective followed by other sections describing strategy, methods, and results or conclusions.

Introduction of topic: This section should start with the general objectives, should provide the context of the work done, and indicate clearly the hypotheses or predictions tested.

Methods followed: In any poster presentation the methods followed section should always be brief, unless the topic itself relates to methodology and protocols. (e.g., a new method of testing a cosmetic cream). Being brief does not necessarily mean that one should not be able to decipher the method used, but states that only relevant essential parts about the subject under study are mentioned. Omit all peripheral portions in the methodology used.

Results: This portion will give the study findings as was expected or otherwise. This section will naturally involve little of text and more of graphics. Display all graphs, pictures, photos, illustrations, etc., in context with clear, short legends.

Discussion and conclusion: This is the singular most important section of your poster. Remember this section is really the TAKE HOME MESSAGE. As in earlier sections, curtail your findings to less than 25 words. Let the conclusion be dramatic so that the audience will remember. A short summary or a bulleted list of conclusions and/of questions answered or raised will make it effective. If the audience finds it significant, they will want to know more about what the study is all about, otherwise why should they care? Be prepared to address this issue, briefly in your poster and in greater depth during subsequent oral discussions.

Tutorial: Add a helpful tutorial section if needed. For example, a short account describing some special apparatus or technique, a pictorial glossary describing some jargon terms, e.g., a definition, that would help, teach and make readers understand.

Acknowledgements and reference: Auxiliary sections detailing "Acknowledgements" and "References" should preferably appear in the lower right bottom corner of the poster. Use this section as an opportunity to thank all those who were helpful in conceptualization and preparing your presentation; however do not make it a thanks-giving section naming all friends and relatives.

In "References", list the literatures you cited in your poster. It is good to be judicious in the number of sources to cite, perhaps half-dozen or less, focusing only on those papers that have shaped your presentation and are particularly relevant to your topic discussed. Delete all redundant references and filler phrases.

GENERAL LAYOUT & FORMAT

Organisers of seminars and conferences give instructions on general dimensions for posters. Other wise common dimensions for posters are as indicated below:

| FEET	INCHES	CENTIMETRES	FEET	INCHES	CENTIMETRES
2.5 X 3.5	30 X 42	76 X 107	3.5 X 3.5	42 X 42	107 X 107
3 X 4	36 X 48	91 X 122	3.5 X 4	42 X 48	107 X 122

Firstly, read the instructions supplied by the organizers and based on the details decide on the poster dimensions. Do not make the poster on just one or two large boards, as they are too inconvenient to carry. Large sized boards when used, cause a host of problems. The poster pins and sticking tape tend to often, fall down. Many a times it does not fit into the poster, space provided. Moreover, any re-arrangement, re-alignment, or last-minute modifications may not be possible.

One easy way is to split up the poster into a number of separate sections, all of roughly comparable size for mounting. The section can be in standard A4 size (29.7 cm X 21.0 cm) paper each individually pasted on a coloured board on its own. This frames each poster segment into a versatile poster by itself that you can place anywhere. You can also knock down easily to fit into a briefcase or a carry bag for transport.

Look critically at the poster layout. Posters can be with as many or as few descriptive sections. However, seven or eight number of headings/sections is good enough. Arrange the poster segments in a logical order, to enable reading it in a linear fashion moving sequentially from one segment to the next. Do not make the reader jump all over the poster area to follow your presentation.

Posters should be brief, and to the point. Many will read only the title, some the introduction, some more the objectives and a few of them the results. Persons, having a deep interest in the topic, will read the poster from beginning to end. Given these different approaches to reading posters, it is imperative that specific sections in the poster should be easy to locate to make the poster effective. Poster 'experts' suggest that an effective poster contains about 20 – 25% text, 40 – 45% graphics and 30 – 40% empty space. Readers decide how much time and effort they need to invest in reading. On an average, a reader will spend not more than 3-5 min at a poster. The poster should convey the message pictorially in less time than this.

The best method is to set the poster sections in a columnar format. In this pattern the reader proceeds vertically first, from top to bottom, then left to right. The biggest advantage of this pattern is that several people can be reading the poster at the same time, walking through it from left to right, without having to exchange places or move back and forth. It is best to number the individual poster pieces (1, 2, 3...) to make the reading sequence obvious to all. Let the text, figures, and legends also follow a pattern and not segregated in separate sections. Take care that all figure legends are located immediately adjacent to the relevant figures.
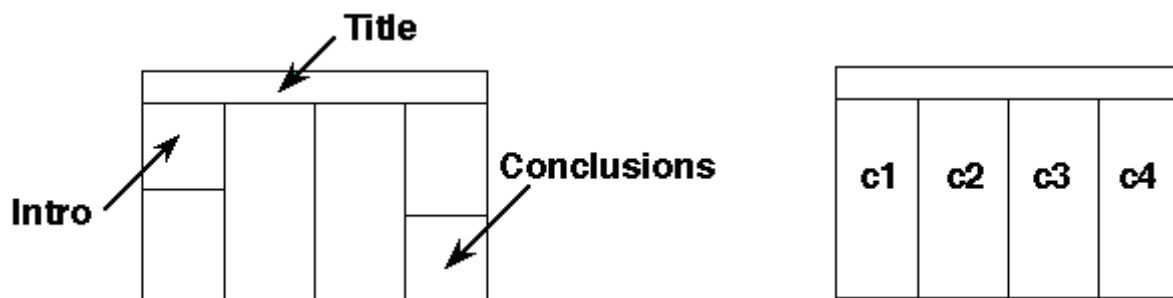
- The title will appear across the top
- Introduction appears at the upper left.
- Conclusions will appear at the lower right.
- Methods & Results will fill the remaining portion of space.

SELECTING A SUITABLE TITLE

Title selected should be crisp, snappy, and on target, highlighting the subject matter, discussed. A simple question can also be a good title. Do not have a long title or use excess jargon. Too short a title is also not advisable. Effectively use small words such as, **and, of, from, with, to, the, a,** and **an,** to separate details in the title.

The poster should quickly orient the audience to the subject and purpose within 20 seconds of seeing the poster. This goal can be accomplished only with a well-crafted title and supporting images. The title type size should be neither too large nor too small. It should be large enough to be read easily from a considerable distance (say, 20 – 25 feet), and should preferably not occupy more than a line. Titles in all capital letters are difficult to read so use sentence case. The title of your exciting poster should be imaginative to lure viewers for a closer look. The final size of letters in the title should be about 1.5 – 2 inches tall, i.e., about a 96 point size (or 48 points enlarged by 200% when printed). In case the title does not fit, in the space earmarked for the title **shorten the title**; do not reduce the type size.

Give the names of all authors and institutional affiliations just below the title. Give first names instead of initials as first names facilitate easy interactions. Use a smaller more discreet type size than the ones used for the title. Middle initials and titles are seldom necessary. Use abbreviations if required. Drop city, state names, from the institutional affiliations. Print author's names in smaller font size, at 72 points (1 – 1.5 inches). Use personal discretion to use titles (Ph.D., M.D.) or omit them altogether. For institutional affiliations use an even smaller, font size at about 36 – 48 points (0.5 – 0.75 inch).

FONT SELECTION

Do not ever use small type on a poster. Use a type size suitable for easy reading at a distance of ~4 feet or more. No one ever complains that posters were too easy to read. If you want a large crowd to develop around the poster, use 14 point type for the fine print and work your way up, (never down) from there. For text, use 20 – point type. In case, there is not enough space to fit all the text in the poster then shorten it!

Use fonts that are very easy to read. No reader wants to struggle through a poster having garish fonts say 𝔒𝔩𝔡 𝔈𝔫𝔤𝔩𝔦𝔰𝔥 𝔗𝔢𝔵𝔱. Monospaced fonts such as `Courier` are also difficult to read. Similarly avoid fonts like **Arial** that have ambiguous letters (e.g., the lowercase 'l' and uppercase 'I' may look alike). Numerous studies show that easy to read fonts `Serifs` help guide the eye along the line improving both readability and comprehension. Select a highly legible font with a large x-height. The x-height of a typeface is a typographer's term for the relative height of the lower-case 'x' or a lowercase letter with ascenders, such as 'b' compared with an uppercase letter, such as 'A'. A poster with a large x-height is easy to read from a distance.

Times Roman and its look – alike clones are the best standard choices. In case you want to have a look different from your neighbour, consider Baskerville, **Century Schoolbook, Palatino**, or fonts with proven legibility. Adjust the kerning (the inter-letter spacing) for improved readability, especially when using large font sizes. Design the poster as if one is designing the layout for a magazine or a newspaper. Select fonts and sizes that work together, are consistent, uniform, and have a clean, readable look. All text used should be double-space justified with even sides or left-aligned jagged right sides large enough to be read easily from at least 6 feet away. Do not use different fonts for every bit of text and graphics or vary the type sizes and/or typefaces excessively throughout the poster. Use a high-quality laser or inkjet printer to print your poster. Do not use dot matrix printers.

COLOUR CONTRAST

Colours attract attention and detract when misused. Fluorescent (neon) colours and rainbow looks are strict NO'S for posters. 2 – 3 different colours are enough for emphasis. Strictly avoid paisley, stripes, polka dots, and batique in technical posters. Coloured background unifies the poster and its choice is up to the presenter. Subdued softer colours (pastels & greys) works best as a background as they are easiest to view for hours at a stretch and offer the best contrast for text, graphic, and photographic elements. Use more intense colours as borders or for emphasis, but be conservative. Overuse of colour is distracting.

In graphics, use colours with care and use them in a way that helps to convey additional meaning. Use colour borders that draws attention without overpowering the section. Colours in artworks should mean something and serve to make useful distinctions. Avoid pseudo colouring and if essential, make sure that the colour scale is tasteful, sensible, and above all, intuitive. Colour contrast is very important as it can enhance the hues or contrast of photographs. Use a light background with darker photos; a dark background with lighter photos.

A neutral background (grey) will emphasize colour in photos; and a white background reduces the impact of coloured photos. Never place isoluminous colours in close proximity e.g., dark red on navy blue, dark blue on dark red, yellow on white or use superfluous colours. Remember visitors can as well happen to be red / green colour blind. If poster sessions are held in halls lit with harsh fluorescent light and if exact colours are important to the data, balance it for use with fluorescent lighting. Most colours become intensified; and bright (saturated) colours may become unpleasant to view.

GRAPHS

Choose the graph type as per the data you are presenting.

Bar – Graphs: If you are comparing 2-3 subject groups or variables, choose bar graphs.

Line – Graphs: They are good for displaying data that change over time (e.g., stability of cream over 12 months). However, line graphs are sometimes confusing, so keep it simple.

Pie – Charts: They are suitable for presenting proportions out of the whole. (e.g., quantity sales figure of hair creams and lotions in the total cosmetic market sales)

In case you have several data's, to accommodate, it is better to show the same in a two or three graphs. This makes the data easy for the audience to understand. It is important to recognise what you want to express and to do it clearly in the simplest possible way. Each graph should have a short heading.

IMAGES

Use beautiful clear photos in your poster. It catches the eye and helps to inform the audience immediately about the subject matter discussed. A photograph clarifies many doubts easily and quickly. It breaks the monotony of texts and graphs and results in a more balanced display pleasing to the eye. A matt finish on photographs gives better visibility. Graphs and photographs should be no smaller than 12cm x 18cm.

HANDOUT

Write up a brief handout to provide a little more detail about your poster. Keep it ready and give it only to interested persons. The ideal handout is just one to three pages long, with all of the important points of your talk in both text and graphics.

SETTING THE POSTER

On arrival at the conference site check in at the registration desk and locate the space allotted to you to put up the poster. This is the time for surprises. You might learn that your vertical poster presentation has to fit in the horizontal space. Be ready with alternatives in case the space available is not as per your liking. Think in advance the best way to arrange the various segments of your poster presentation using all your creative judgement in a timely manner. It is wise to come prepared for all emergencies and you will have no mishaps.

PRESENTATION SKILL

When poster session are on do not stand directly in front of the poster, or get too close to it but off to the side just a bit, so that passers-by can view your poster. Similarly, when discussing the poster with a specific reader do not become so engrossed in conversation that you are oblivious to the environment preventing others from viewing the poster by blocking their vision. Give the audience the full freedom to read, and only if they require, offer to take them through the poster or discuss the subject of mutual interest.

Be enthusiastic but do not get excited and go on at people with your views uncalled. At the same time, do not ignore people who may have questions to ask by pulling on a disappearing act. If you need to leave the spot and circulate around, try to get the co-author or your colleague substitute your place to associate your work with a human face. Come prepared to your poster, armed with relevant papers and extra copies of any supporting material you may wish to share.

Consider using some kind of attention-getting gimmick that makes the poster stands out from the crowd but be sure that it does not backfire. It is important that your hook is legitimate, and that it does not detract or trivialize the poster presentation in any way. Use good judgment here.

Check on the following. It will make the whole process much easier.
- Finalise the one essential concept you would like to highlight to the audience.
- Read and re-read your content again and confirm that the statements made are still relevant and accurate.
- Determine the size of the poster.
- See if you have all the elements you will need for the poster, namely poster board, glue, razor blades, tape, other aids, etc.
- Do you have all the data you will need?
- Determine the time you will need to prepare the data for presentation (tables, photographs, etc)
- Any outside agencies you need help from e.g., photographic services, and materials that need to be sent out and got back.
- While preparing a poster allocate the time wisely or it will take all the time available.
- However well you plan, certain things will go wrong any ways. Do not worry.
- Do not wait until the last moment to do a simple task.
- Be enthusiastic. Do not get irritated. Be ready to answer the same question readers ask repeatedly.
- Remember this is a public presentation; plan carefully, be clear in what and how to say it.
- Have a professional attitude. No short cuts please. Avoid making the effort a public spectacle.
- With little or no experience, making posters, will take longer time. Do not bother. Remember too much lead-time, only encourages endless fussing.
- Do not wander too far away from your poster during the session; be available for discussions!
- Make the poster to the best of your ability, and then go do something else to enjoy the experience.

Lastly follow the philosophy of work as explained by Lord Sri Krishna in the Bhagavad-Gita.

"Your right (is) only to work, never in its fruit; Let not (you) be involved in the cause of the fruits of action; Let not be your attachment to inaction." (Shloka 47 – Chapter 2)

कर्मण्येवाधिकारस्ते मा फलेषु कदाचन ।
मा कर्मफलहेतुर्भुर्मा ते संगोऽस्त्वकर्मणि ।।४७।।
– ।। श्रीमभ्दगवग्दीता ।। २ अ.।।

POSTER STYLE – TYPICAL EXAMPLE (STANDARD SIZE – 3 FEET X 4 FEET)

DESCRIPTIVE TITLE			
Author and Author, Departmental Affiliation			
Abstract	Methodology - in brief	Results e.g. Table 2	Analysis and interpretation of results
		More Results	
Statement of research question	Results e.g. Table 1		Impact of findings
	Illustration	Illustration	Acknowledgements of faculty guidance, technical assistance, funding, etc.

3 ′

4 ″