First . . .

READ THE INSTRUCTIONS supplied by the meeting organizers!

Having an idea about these details before you begin will make the whole process *much* easier.

General format

1. Determine the one essential concept you would like to get across to the audience.
2. Re-read your abstract once again - are those statements still accurate?
3. Determine the size of the poster (if you had read the instructions, you would already know this!).
4. Determine if you have all the elements you'll need for the poster: **Bits & pieces?** Poster board, glue, razor blades, Bandaids . . . **Data?** Do you have the data you will need? How much time will you need to prepare the data for presentation (tables, photographs, etc.)? **Outside agencies?** Does material need to be sent out & returned (photographic services, collaborators)?

? A **word of advice** (the first of many; pick and choose what works for you). Preparing a poster will take as much time as you let it. Allocate your time wisely.

?? There are always things that go wrong, so do not wait until the last minute to do even a simple task.
?? This is a public presentation; by planning carefully, striving to be clear in what you say and how you say it, and assuming a professional attitude you will avoid making it a public spectacle.
?? If you have little experience making posters, it will take longer (estimate 1 week at the **very** minimum).
?? Too much lead time, however, encourages endless fussing about. Do the poster to the best of your ability, then go do something else

Plan ahead!

? You have probably heard this again and again. That is because it is *IMPORTANT!*
? With an increasing reliance placed upon poster presentations for information transfer at meetings, there comes an increased impatience with poorly presented materials.
? Although the poster preparation will expand to fill whatever time you allow it, don't be caught with an unfinished poster!
? Planning ahead is particularly important if photographs are to be used.

?? Allow time for at least two rounds of photographic processing to take place, just in case.
?? Custom photo processing may be more expensive, but offers rapid turn-around and precise color balancing.
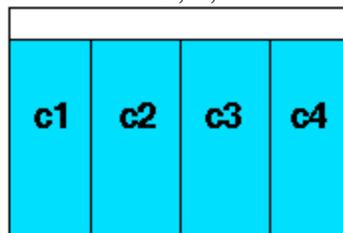
?? Use sufficient enlargement to allow details to be seen at a distance of 6 feet or
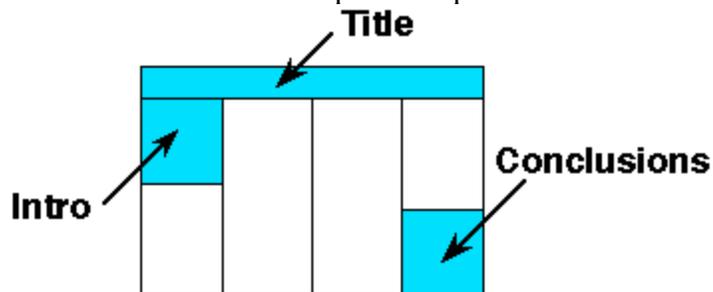   more

Sketch it out!
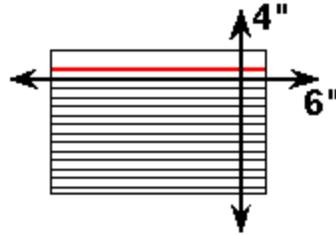
Make a sketch of the poster, using 4 inch x 6 inch cards:

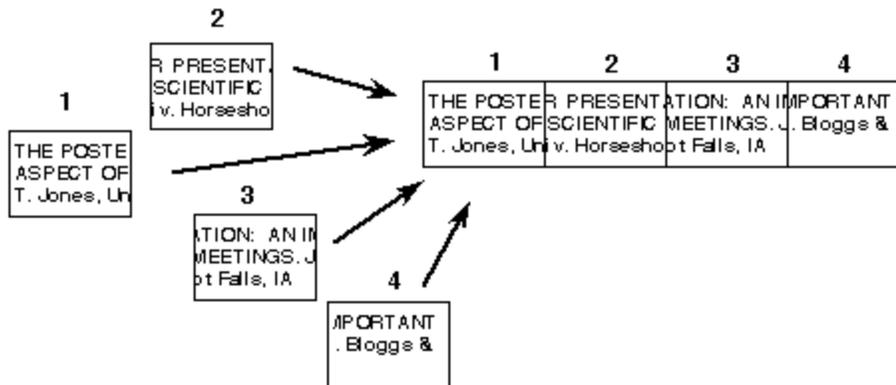Arrange the contents in a series of 3, 4, or 5 columns. This will facilitate the flow of

traffic past the poster:

Place the elements of the poster in position:

?? The title will appear across the top.
?? A brief introduction (3 - 5 sentences) will appear at the upper left.
?? The conclusions will appear at the lower right.
?? Methods and Results will fill the remaining space.

The Title banner

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THE POSTER PRESENTATION: AN IMPORTANT ASPECT OF SCIENTIFIC MEETINGS. J. Bloggs & T. Jones, Univ. Horseshoot Falls, IA			

This part of the poster includes the title of the work, the author's names, and the institutional affiliations.

Think BIG!

1. The title banner should be readable from 15 - 20 feet away.
2. If space permits, use first names for authors to facilitate interactions.
3. Middle initials are seldom necessary, however.
4. Use abbreviations where possible.
5. City names, or even states, often may be dropped from the institutional affiliations.
6. There are seldom rules regarding line justification of the title. Determine if you will use left or center to justify the text of the title banner once it has been formatted, based upon personal preferences and space constraints.
7. Refer to your meeting guidelines for more details specific to the meeting you plan to attend.

Title Fonts:

Make it easy on your information-saturated audience.

1. Use a simple, easy to read font. A *san serif* style, such as Helvetica (Mac) or Arial (IBM), is ideal.
2. Use boldface and all-caps for the title itself.
3. Use boldface and mixed upper/lower case for the authors names.
4. Use plain text, no boldface, and mixed upper/lower case for affiliations.
5. Use boldface for the poster session number (the number you are assigned by the organizing committee).

Title sizes

The most important parts of the title banner, the title itself, should be readable from about 25 feet away. Your title will lure viewers closer to see your imaginative and exciting
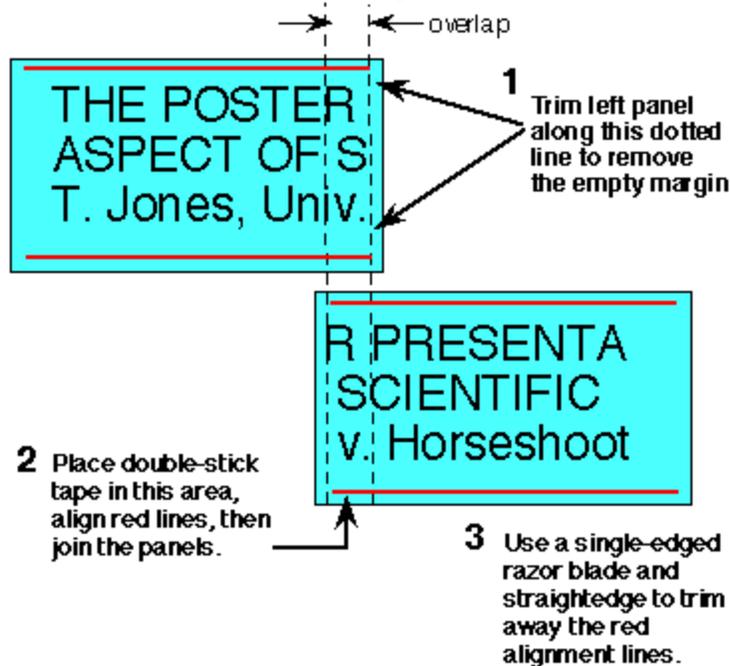
study. The rest of the title, and the body of the poster, should be readable from about 10 feet away.

1. The final size of letters in the title itself should be about 1- 1.5 inches tall. That is about a 72 point size (or 36 points enlarged by 200% when printed.
2. The authors names may be printed smaller, at 48- 60 points (0.75-1 inches)
3. Titles (D.O., FACOP) are requested so that the presenting author, student authors, and society members can be indicated.
4. Affiliations can be even smaller, at about 36 points (0.5 inch)

Banner assembly:

?? A one-piece banner is easiest to carry, and some places have an in-house banner-making service. Commercial firms may also offer this service - try a Kinko's or similar company.

An alternative is to use a laser printer and double-stick tape:

overlap

THE POSTER
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T. Jones, Univ.

1 Trim left panel along this dotted line to remove the empty margin

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2 Place double-stick tape in this area, align red lines, then join the panels.

3 Use a single-edged razor blade and straightedge to trim away the red alignment lines.

1. Set the printer output to landscape (wide) format, using 11 x 14 inch paper (you'll have fewer seams than if you use 8.5 x 11 inch paper).
2. Print the title & lay it out on a table. Proofread it now, rather than after you have assembled it!
3. Successive pages should overlap with only a small margin.

4. Trim the overlap off one side of each page, and place a piece of double-stick tape in that position on the other page, then align the successive pages.
5. This process is easier if you have included 2 thin, parallel lines across all pages of the banner, one above the text & one below. These lines will make it easier to align multiple pages. Once the banner is printed and put together, you can trim away the parallel lines with a straightedge & razor blade.

This method produces a title banner which should be about 4 - 8 inches tall (maybe attached to the top of the poster), and which can be rolled into a compact cylinder for travel.

Before you go any further!

Remember to make a backup copy of your poster

Mount poster materials on colored art, mat, or bristol board:

1. Mat board is available in a large range of colors.
2. Mat board is heavier, making it more difficult to crease the poster while traveling.
3. Mat board has a more durable surface than other art papers.
4. Mat boards is, however, heavier and more difficult to attach to display boards in the poster session.

Use a colored background to unify your poster:

1. Muted colors, or shades of gray, are best for the background. Use more intense colors as borders or for emphasis, but be conservative - overuse of color is distracting.
2. Two to three related background colors (Methods, Data, Interpretation) will unify the poster.
3. If necessary for emphasis, add a single additional color by mounting the figure on thinner poster board, or outlining the figure in colored tape.

Color can enhance the hues or contrast of photographs:

1. Use a light background with darker photos; a dark background with lighter photos.
2. Use a neutral background (gray) to emphasize color in photos; a white background to reduce the impact of colored photos.
3. Most poster sessions are held in halls lit with harsh fluorescent light. If exact colors are important to the data, balance those colors for use with fluorescent lighting. Also, all colors will be intensified; bright (saturated) colors may become unpleasant to view.

Sequencing contents

The poster should use photos, figures, and tables to tell the story of the study. For clarity, it is important to present the information in a sequence which is easy to follow:

1. Determine a logical sequence for the material you will be presenting.
2. Organize that material into sections (Methods, Data/Results, Implications, Conclusions, etc.).
3. Use numbers (Helvetica boldface, 36 - 48 points) to help sequence sections of the poster.
4. Arrange the material into columns.
5. The poster should not rely upon your verbal explanation to link together the various portions.

Edit Ruthlessly!

There ALWAYS is too much text in a poster.

1. Posters primarily are visual presentations; the text materials serve to support the graphic materials.
2. Look critially at the layout. If there is about 20% text, 40% graphics and 40% empty space, you are doing well.
3. When in doubt, rephrase that text or delete it. (Keep chanting this mantra: There *always* is too much text. *Always* too much text.)
4. Use active voice when writing the text; *It can be demonstrated* becomes *The data demonstrates*.
5. Delete all redundant references and filler phrases, such as *see Figure ...*
6. Remove all material extraneous to the focal point of the poster.
7. Since the abstract is usually published, there is no need to repeat it in the poster. The brief introduction should be sufficient to identify the purpose of the study.
8. Since graphs & figures will have explanatory captions, there is no need to label the graphic with *Figure 1, Table 2*, etc.

? The poster is not a publication of record, so excessive detail about methods, or vast tables of data are not necessary. This material can be discussed with interested persons individually during or after the session, or presented in a handout.

Before you go any further, save & back up your work!

Don't say I didn't warn you . .

Illustrations

? The success of a poster directly relates to the clarity of the illustrations and tables.

?? Self-explanatory graphics should dominate the poster.
?? A minimal amount of text materials should supplement the graphic materials.

- ?? Use regions of empty space between poster elements to differentiate and accentuate these elements.
- ?? Graphic materials should be visible easily from a minimum distance of 6 feet.

Show no mercy when editing visual materials!

? Once again, ruthless editing is very important.
? Visual distractions increase fatigue and reduce the probability of viewers giving the poster a thorough read.

- ?? Restrained use of large type and/or colored text is the most effective means of emphasizing particular points.
- ?? Use short sentences, simple words, and bullets to illustrate discrete points.
- ?? Have the left edges of materials in a column aligned; center alignment produces ragged left & right edges. This makes reading the poster more difficult.
- ?? Avoid using jargon, acronyms, or unusual abbreviations.
- ?? Remove all non-essential information from graphs and tables (data curves not discussed by the poster; excess grid lines in tables)
- ?? Label data lines in graphs directly, using large type & color. Eliminate legends and keys.
- ?? Artful illustrations, luminous colors, or exquisite computer-rendered drawings do not substitute for CONTENT.
- ?? Lines in illustrations should be larger than normal. Use contrast and colors for emphasis.
- ?? Use colors to distinguish different data groups in graphs. Avoid using patterns or open bars in histograms.
- ?? Use borders about 0.5 inches all around each figures. Border colors can be used to link related presentations of data.
- ?? Colored transparency overlays are useful in comparing/contrasting graphic results
- ?? Laminated sheets of paper can be a great way to get your poster pieces to the meeting and can be assembled on the poster board once you arrive

Down to the Wire and Beyond

? Those who choose to live on the edge should note that:

- ?? Many larger meetings will have computers available for modifying posters. These facilities are, however, usually crowded.
- ?? There are always photo supply stores near the meeting which will sell you poster materials.
- ?? If you are unfamiliar with the city, ask the hotel concierge for local businesses which might be able to help. Remember to tip!
- ?? Many hotels will have photocopy and Fax machines for guest use, and telecommunication ports in the hotel rooms.

- ?? The world of portable computers and the Internet offers interesting possibilities for a graceful recovery. Leave your poster on a server and you can access it from a remote site.
- ?? Before you leave for the trip, make a final backup copy & leave the disk in an obvious place. That way, you can have someone who has stayed behind print portions of the poster and fax then to you.

Poster text

Double-space all text, using left-justification; text with even left sides and jagged right sides is easiest to read.
The text should be large enough to be read easily from at least 6 feet away.

- ?? Section headings (Introduction, Methods, etc.); use Helvetica, Boldface, 36 point
- ?? Supporting text (Intro text, figure captions, etc.); use Helvetica, 24 point (boldface, if appropriate)
- ?? If you must include narrative details, keep them brief. They should be no smaller than 18 point in size, and printed in plain text. Remember that posters are not publications of record, and you can always come to the session armed with handouts.

One option is to consider using a larger size (36 pt) for the Conclusion text, and a smaller size (18 pt) for Methods text.
Attempt to fit blocks of text onto a single page:

- ?? This simplifies cutting and pasting when you assemble the poster.
- ?? For the same reason, consider using 11 x 14 inch paper in the landscape mode when printing text blocks on laser printers.

Other options for fonts include Helvetica, Arial, Geneva, Times Roman, Palatino, Century Schoolbook, Courier, and Prestige. Note that these fonts represent a range of letter spacing and letter heights. Keep in mind that *san serif* fonts (having characters without curlicues or other embellishments) are easiest to read.
Finally, be consistent. Choose one font and then use it throughout the poster. Add emphasis by using boldface, underlining, or color; italics are difficult to read.

Putting it together

Great - you've got a good story, supported by bunches of data and lots of quality graphics. How do you go about making all this accessible to an audience, most of whom are suffering from information overload already (as well as too little sleep, convention food, and some of the worst coffee in the world)?

The Poster's Background

Two basic rules to keep in mind are that

1) Artistry does not substitute for content

2) The fancier the poster, the greater the time investment.

There are several common approaches.

- ?? Some folks use pieces of mat board (or Bristol board) to make a solid background for the entire poster. They may then choose to use a complementary color as a border for important elements of the poster.
- ?? Others use smaller pieces of board to frame only the elements of the poster, leaving spaces between the elements empty.

    Either approach works; the former gives a unified appearance and is easier to hang straight, while the latter is easier to carry to and from the meeting. It is also possible, but often expensive, to have a commercial house reproduce your completed poster as a single large sheet of paper, which can then be rolled into a cylinder for transport.

    The choice of a background (and complement) color is up to you. The general consensus, however, is that softer colors (pastels, grey) work best as a background - they are easiest to view for hours at a time, and offer the best contrast for text, graphic, and photographic elements. See above the Use of Color page for some hints on choosing colors.

Measure twice, Cut once

An important rule, as any devotee of the 'This Old House' television program knows. Begin by measuring the elements of your first column - these bits are easier to replace if you make a mistake cutting them to size. Use a roller trimmer, sharp paper cutter, or straightedge and razor blade to carefully trim these pieces. Lay them out and move on to the next column.

When you have finished cutting the text elements, adjust all the parts of the poster & step back to take a good look at it. If it appears crooked, it probably is. Trust your eyes and re-trim the offending piece.

Before you trim those elements which are more difficult to replace (photographs, etc.), lay the poster out again and have someone else view it with you. *NOW* **is the time to look for errors in the text and correct them.** If you do make any changes in the text, save those changes!

Almost finished - just Stick to it!

This part is not too much different than [Applying Adhesive](#) when [Assembling the Title Banner](#).

- ?? First, wash your hands to remove any dirt or oils you may have acquired so far. Then, find a secluded and well-ventilated spot in which to work.
- ?? Lay one section of the background out on a clean and dry surface. Place the corresponding poster elements in position. Use a T-square and soft-lead pencil to **lightly** mark the positions of each corner of the poster elements.
- ?? Put some scrap paper down on another surface to protect it, place a one of the poster elements face-down on the scrap paper, and apply adhesive. Place it in position on the background, and then move to the next poster element and repeat. Clean your fingers often, to avoid sticky fingerprints on the poster - dust will stick & the prints will darken with time. Use absolute alcohol to dissolve & clean sticky spots, but be sure to **test it in an inconspicuous spot first!** Like the adhesives, some inks and paper dyes are soluble in alcohol.
- ?? Keep going until you finish, changing the scrap paper often. Use a gum eraser to rub out any obvious pencil marks. Then lay out the entire poster again, stand back (about 15 feet), and look for errors and misaligned bits. Change any problems now, before the adhesive sets!

  ? Even though you may be approaching your limits by this stage, remember to *drink coffee or other beverages somewhere far away from the poster.*

Applying adhesive

Any number of adhesives may be used, including dry mount tissue, pressure-activated adhesive, double-stick tape, or rubber cement. A can of spray adhesive, however, seems to be the most popular choice.

1. Place a large piece of clean scrap paper down on another flat surface, well away from the banner background. Mailing paper or butcher paper works well.
2. Lay the title banner face down onto the scrap paper.
3. Apply adhesive to the back of the title banner.
4. A spray adhesive works well, but be careful to use only a thin coat of adhesive. Avoid spraying the adhesive into the air, as it may settle on things you would rather keep clean.

OK, now CONTINUE on to the final stage, [Positioning the Banner](#). Quickly, before the adhesive dries!

Positioning the Banner & Background

So far, so good. This last step is the part where you will need another pair of hands.

1. Together, carefully lift the banner from the scrap paper. Try to avoid getting adhesive on your fingers (it will turn black, but does wear off in a few days). Sticky fingers leave black finger prints on the paper.
2. Turn the banner face up, keep it taut, and have one person position one end of the banner on the background. Remember to account for the margins.
3. Beginning in one corner, smooth the banner onto the background using diagonal strokes (to avoid air pockets), working from the attached end of the banner to the free end.
4. The adhesive takes a few minutes to set, so step back and evaluate the result. Trust your eyes - if it doesn't look right, it probably isn't straight. If you need to, carefully detach the banner and try again.
5. When you are satisfied, use a straightedge and razor blade to cut through **ONLY** the title banner at each joint, leaving the heavy tape intact to serve as a hinge.

Great! Now, go wash your hands before you leave sticky fingerprints everywhere. Fingernail polish (and most other organic solvents) do a good job removing the adhesive from your skin.

Absolute alcohol (use 100% only!) on a tissue works well if you need to remove excess adhesive from the banner. Test it on a scrap of background, since some colors may fade or run. This is especially a problem with cheap white poster board (the kind often carried by university book stores), where the white surface may rub away entirely

Miscellaneous comments

? This page contains comments applying to presentations and meetings in general, rather than to the details of poster assembly.

- ?? Since a poster is essentially a visual presentation, try to find ways to *show* what was done - use schematic diagrams, arrows, and other strategies to direct the visual attention of the viewer, rather than explaining it all using text alone.
- ?? Design the poster to address one central question. State the question clearly in the poster, then use your discussion time with individuals to expand or expound upon issues surrounding that central theme.
- ?? Provide an explicit take-home message.
- ?? Summarize implications and conclusions briefly, and in user-friendly language.
- ?? Give credit where it is due. Have an acknowledgements section, in smaller size type (14 - 18 point), where you acknowledge contributors and funding organizations.
- ?? Do not use school mascots or logos on the poster; they add a useless visual distraction to the poster, and indicate a degree of jingoism incompatible with scientific endeavors.

<u>Wisdom of the ages:</u>

- ?? Remember to take the poster to the meeting when you leave home. This is a surprisingly stressful mistake, particularly if you plan to be on the job hunt at the meeting. Do not be the last one to leave for the meeting; know who is leaving after you, so they can bring the poster you left behind (my continued thanks to my personal poster savior, Dr. Alan Humphrey!)
- ?? You have seen the Samsonite luggage commercials - do not entrust the poster to the tender mercies of baggage handlers. In addition to unintentional folds & creases, the poster may take a surprise trip around the world while you attend the meeting.
- ?? It is worth repeating here - back up a copy of the poster to disk, and leave the disk in an obvious place. Someone staying behind may be willing to print a missing graphic and fax it to you, or work electronic magic and send you a copy of the poster over the Internet. If all else fails, use a respected overnight courier service.
- ?? Hotel room double beds are a useful size for laying out posters. Do not, however, leave the poster materials on the bed if the hostel has zealous housekeeping staff. You can even use the bed for last minute poster assembly, but be forewarned - the residue of spray adhesive is less fun when sleeping than cracker crumbs.
- ?? Before you leave for the meeting, set the poster up and look at it critically. Is it all there? Are all the words in the title spelled properly?
- ?? While it is set up, use a push pin to make holes in the upper corners of each section of the poster components. Hanging the poster can be one of the more difficult and frustrating aspects of poster sessions, and this will to make hanging the poster a bit easier.
- ?? When you dismantle the poster, turn the introduction section over and make a pencil sketch of the assembled poster, numbering each section. Then write the numbers on the backs of the corresponding poster sections. Now someone else can hang your poster if you can not be there.
- ?? Use brown wrapping paper to bundle together the parts for each poster. This keeps it clean and, if you carry more than one poster with you to the meeting, the parts of different posters will not become mixed together.
- ?? Label the wrapped poster with your name, the hotel address & telephone number, your room number (especially if the room is not registered in your name), and the poster session number. A lost poster with a label like this may find its way back to you more quickly, maybe even in time for your session.
- ?? Take a roll of double-stick tape with you to the meeting, to re-attach any loose parts of the poster.
- ?? Take a travel alarm clock with you. If you will be presenting in a morning session, take special care to set the alarm the night before. It also doesn't hurt to ask for a wake-up call as a backup.