

Making Great Posters

Making Great Posters (for 2nd year MESM students)

February 18, 2011

1-3 pm, Bren 1414

Description: An academic poster is a great way to share your work at a conference, but good poster design requires careful planning and use of techniques for effective communication. In this hands-on workshop, we will explore elements of good poster design. A panel of instructors will present techniques for designing great posters and will share examples of well-designed posters, and some that are not as effective. Students will learn what key elements to include on a poster, how to clarify and condense text, and how to integrate graphics and captions to tell a compelling story. Students will bring draft posters to share during the workshop to get feedback from instructors and other students.

Instructors:

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What is a scientific poster?

- Single large document used to communicate results of scientific research

Why present a scientific poster?

- More opportunity to personally interact with people interested in your research
- Opportunity to reach people who may not be in your field of research
- More efficient (can be viewed while you are not there)

Requirements for Bren group project posters

- The posters should be at least 48" wide and 36" high but no larger than 72" wide and 48" high, including borders.
- It is highly recommended that you laminate your posters for future use.

Deadlines for Bren group project posters:

- **March 18, 2011.** A draft of your poster is due to your faculty advisor
- **April 11, 2011.** Your hard copy poster should be printed and ready to post for the poster session. A final draft PDF format of your poster should be submitted to your faculty advisor and the Group Project Coordinator.
- **April 15, 2011.** Group project poster session. After the poster session on the night of final presentations, you should give your poster to the Group Project Coordinator. Posters will be displayed at Bren School (3rd floor, laboratory wing).

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Before you start

- Call your printer to learn about guidelines, constraints and cost. Questions for the printer include:
 - When does he/she need the file to meet your deadline?
 - Discuss the desired size of your poster and find out if the printer has any limitations on printing that size.
 - What is the resolution at which the printer would like your materials at the desired size of your poster?
 - Does the printer offer guidance regarding the color mode: RGB or CMYK?
 - What is the cost of printing a color poster at the desired size?
 - What is the additional cost of laminating the poster?

Iterative poster design process

- Start planning your poster at least a month before you need present your poster at a conference. For the group project poster, begin at least a week or two before the rough draft is due to your faculty advisor.
- Create and print a rough draft (actual size, if possible, or as large as possible up to actual size) or create a PDF version
- Hang the rough draft where some friends, colleagues and/or your advisor can see it (or send the PDF to them) and ask them to read the poster (when you are not there) and invite their comments on word count, prose style, flow of ideas, clarity of figures, font size, spelling, etc.
- Revise your poster with feedback from your friends, colleagues and advisor
- Coordinate with your printer to know exactly when you need to bring in your poster file to be printed in order to meet your deadline

Software

- Common software programs for poster design include InDesign, Adobe Illustrator, and PowerPoint. Some programs are specifically designed for creating posters (PosterGenius). Adobe Photoshop or equivalent software can be used to prepare photos for the poster.
 - When saving a poster from Adobe Illustrator or InDesign, check the option to "subset fonts when percent of characters used is less than 100%" to prevent any distortion to your font.
 - If PowerPoint is used to create the poster, files should be saved as JPG at 300 dpi with the highest image quality.
 - If Photoshop is used to create the poster, use a resolution of 300 dpi at the size desired for printing and save a TIFF or an EPS file. An EPS file can be converted to a Press Quality PDF using Acrobat Distiller.
- Generally, you will need to export your file to PDF, JPG, or TIFF to print a poster
- Poster templates for these programs can be found by searching in Google for "poster template" and adding the application name
 - PowerPoint poster templates:
http://www.posterpresentations.com/html/free_poster_templates.html

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Sections of a scientific poster (like a scientific paper)

- Title and authorship
- Introduction to scientific question(s)
- Methods
- Results
- Discussion and conclusion
- References
- Acknowledgements

Content and Location of Sections

Do not “bullet” or punctuate section headers on your poster

- Title and authorship
 - Convey the issue, approach or system
 - Needs to be catchy
 - Keep the title simple and short, with maximum length 1-2 lines
 - Avoid titles with colons
 - Format title in sentence case (not capitals at the beginning of each word and not all capital letters), unless otherwise directed otherwise
 - Include all primary authors (e.g., group project members) and your affiliations. For group project posters, include an appropriate reference to your faculty advisor and your client (see previous group project posters)
- Abstract
 - Do not include your abstract on a poster, unless it is required. An abstract is not required for Bren group project posters. You may be asked to submit an abstract for scientific meetings, but the abstract is for the meeting catalog and not for your poster. If it is required or there is no abstract book, make the abstract 50 words or less.
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- Methods
 - Strive for 200 words or less to describe your experimental approach and methods
 - If possible, use figures or tables to illustrate your experimental design, use flow charts to summary steps in a process, include a photograph of the subject of your study
 - Mention (not in great detail) analytical methods used and how they allowed you to address the hypothesis
- Results
 - Strive for 200 words or less of text, not counting figure legends and captions
 - First, state whether or not your experiment worked and what you found
 - Briefly describe the qualitative and descriptive results
 - Second, present data analysis to address the hypothesis or question
 - Include figures or other graphics that visually display your results. Figures need to convey the main messages of the poster in case the reader skips the text (which they usually do).

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- Make clear, engaging legends to explain figures without additional text.
- Write clear captions that can be understood without reading additional text.
- Conclusions
 - Strive for 200 words or less for your conclusions
 - Briefly remind the reader of your questions and hypothesis (without restating them)
 - State whether or not your hypothesis was supported by your research
 - Discuss why your results are conclusive and interesting
 - Describe the relevance of your work
- Literature Cited
 - Follow standard professional format
 - Use published journal articles and books as references (not websites and personal communications)
 - Do not cite more than 10 articles for the poster (preferably fewer)
 - Do not cite an article that you have not read completely (you may need to discuss it at the meeting)
- Acknowledgements
 - Strive for 40-50 words for your acknowledgements
 - Thank individuals for *specific* contributions to the project (equipment, statistical advice, laboratory assistance, funds, etc). Do not list titles or affiliations.
- Further Information
 - Strive for 20 words
 - Include your email address, web site address (if relevant), url where the reader can download a PDF of the poster (if relevant)

Some strategies for layout

- Use the center of the poster for the most exciting graphics and photos
- Introduce the poster questions on the upper left side of the poster
- Feature conclusions in the right hand column area of the poster
- Move sections of text that few people will read to the bottom portion of the poster (e.g., literature cited, acknowledgements, further information, logos)

Best practices for poster design

- No matter what the discipline or stage of the research process is being presented, an effective poster fulfills the following:
 - Is attractive
 - Well-organized
 - Self-explanatory
 - Careful in linking text and imagery
 - Appropriate to the audience at hand

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Principles of design

- Balance: Implies stability. It is a universal aim of composition. It is the equal distribution of visual weight.
 - Symmetrical
 - Shapes repeated in the same position on either side of vertical axis.
 - Asymmetrical
 - Dissimilar objects have equal visual weight or equal eye attraction.
 - Attention attracted by value difference: Contrast light and dark, color and black-and-white, bright and dull
 - Radial
 - Elements radiate or circle out of common central point. Can be symmetrical or asymmetrical depending on whether the focus occurs in the middle or off-center
 - Crystallographic
 - Same weight and eye attraction is everywhere
 - Shape and texture
 - Use large and simple shapes and contours
- Rhythm: Leads and directs the eye through the design. It suggests movement. Proper use of rhythm creates expression and excitement, design without rhythm is uninteresting.
- Emphasis: Leads the eye and focuses its attention on a dominant aspect of the design. By accenting and emphasizing various elements, separate parts of the design may be drawn together. Emphasis coordinates the design elements and creates an orderly and simplified arrangement.
- Harmony: Qualifies the unity and completeness of the design. This quality is seldom achieved except by proper planning and organization. It relies principally on scale and proportion, the pleasing relationship of size and shape.

Poster layout

- Flexible to accommodate the information and graphics you want to share
- Experiment with layout and presentation; move elements around to figure out what looks best.
- Use a grid to help with design
- Use columns to organize information, keep column alignments logical, and maintain standard column widths.
- Use white (or neutral) space to help the viewer identify discrete units of information (otherwise the viewer will be confused and overwhelmed), but do not use too much white (or neutral) space because the viewer's eye will wander.
- Use color for emphasis or grouping. Avoid using too many colors or juxtaposing colors that clash or conflict.
- Provide clear cues to readers for how they should "travel" through your poster elements.

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Design of poster elements

- Background (of the poster itself, not your research project)
 - Keep the background color or images simple.
 - Use a light background to simplify your design process. Design of graphics and figures on a dark background takes more time because you either need to invert the figures so they stand out on the dark background or you need to put a white box around your figures. A dark background also takes more ink to print.
 - If you use a dark background or a photograph, try to minimize the number of colors.
- Text
 - The number of words should be as low as possible. Strive for 800 words or less on the poster. If you have too many words, viewers will only read your figures *or they will avoid your poster altogether*.
 - Text boxes: Columns should be about 40 characters wide, or about 12 words per line
 - Do not justify the text
 - Avoid blocks of text longer than 10 sentences
- Font
 - Use no more than two or three text fonts.
 - Sans Serif font (Helvetica, Arial, Gill Sans, etc.)
 - Serif font (Times, Georgia, Palatino, etc.)
 - Font size (depends on font and text element), should be readable from 6 feet away
 - Title: largest (80-96 point)
 - Attribution: also large (48-60 point)
 - Section headers: second largest (44-48 point)
 - Text: third largest (24-28 point)
 - Captions: like text, could distinguish font style (24-28 point)
 - Legends: as large as possible (20 pt or larger)
 - Do not overuse bold and italics; avoid underline
- Photos
 - Resolution should not be less than 150 pixels per inch (ppi), not more than 300 ppi at the size desired for printing
 - Use Adobe Photoshop or equivalent software to prepare photos
 - Consider copyright constraints and request permission from the photographer to use an image, credit the photographer appropriately.
 - Write short, clear captions to explain the relevance of photos.
- Figures, Charts, Maps
 - Use a figure, chart or map that will be readily understood by your audience.
 - Plan the size of the figure, chart or map and determine the appropriate font and symbol sizes.
 - Create a clear legend that explains the symbols on your figure.
 - Use consistent colors for symbols on figures throughout your poster.

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- If you include a map, add a locator map and a scale bar in units that your audience will understand.
- Logos
 - For the group project poster, use the Bren School logo and any other appropriate logos from your clients or funders.
 - Do not change the Bren or other logos in any way, except to resize *proportionally* as needed. Do not add circles, incorporate images, change fonts, etc.
 - Make sure the logo does not overlap with other graphic elements.
 - Like other images, make sure the resolution is sufficient for the desired size of the logo in print.

Printing your poster

- Potential vendors
 - **Instructional Development Print Center**, 1140 Kerr Hall, UCSB, <http://artworks.production.id.ucsb.edu/> Contact: Maura Jess, Digital Imaging Specialist, Email: jess@id.ucsb.edu, Phone: 805-893-4312 Cost: \$8 per square foot
 - **UCSB Institute for Terahertz Science and Technology (ITST)**, Room 1001, Bldg 937, Next to Broida Hall, Hours: 8 am – 5 pm M-F except holidays. <http://www.itst.ucsb.edu/PosterPrinterEsmeralda.html>. First come, first serve. Cost \$40 per poster smaller than 48" x 36". Max paper width 36". Need 1 inch margin all around poster.
 - **FedEx Office**, UCen, Hours: M-F, 8-5, Phone: 805-685-5355, Email: usa0283@fedex.com, Subject: UCSB
 - **FedEx Office Print & Ship Center**, Maximum size for color posters: 60" high x 120" long, Cost: \$7.25 per square foot for printing and \$3 per square foot for lamination.
 - 5749 Calle Real, Goleta, CA 93117, Hours: M-F 7 am – 11 pm Sat & Sun 9 am – 9 pm, Phone: (805) 964-3522
 - S Hope Ave, Santa Barbara, CA 93105, Open 24 hours, Phone: (805) 569-5100
 - 1030 State St, Santa Barbara, CA 93101, Hours: M-F 7 am – 11 pm Sat & Sun 9 am – 9 pm, Phone (805) 966-1114
 - **Alternative Digital Printing**, Maximum height is 60," width can be larger. They have had difficulty printing PowerPoint posters in the past; they recommend Illustrator or Photoshop. If you can give them a PDF, TIFF or JPG, they can print it. Cost: Approx \$6 per square foot for printing and \$4 per square foot for lamination.
 - 6556 Pardall Road, Isla Vista, CA 93117, **Hours:** M-F 8am-7pm, Sat & Sun 10am-4pm, Contact John Hoyne, Phone: (805) 968-1055, Email: jhoyne@alternativecopy.com.
 - 1511 Chapala St., Santa Barbara, CA 93101, Hours: M-F 8am - 7pm Sat & Sun 10am-4pm, Phone: (805) 963-7731, Email: altsb@alternativecopy.com.

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Logistics of poster sessions

- Poster sessions generally are in large rooms that will be crowded with people during the poster session
- Other posters around your poster may attract attention; you need to be able to compete with other interesting topics for viewers' attention
- Practice a quick verbal synopsis of your poster (2-3 minutes) to walk people through your project
- Remember, unlike a talk, presenting your poster is a conversation; your poster is your prop
- Dress appropriately
- Bring your business cards and a handout of poster highlights
- Bring water, NO GUM

Sample posters

- Bren Group Project posters from 2010 are posted in Bren Hall, 3rd floor, laboratory wing. You should look at the posters to see what styles you like.
- <http://phdposters.com/gallery.php>

Additional Resources

UCSB Instructional Development. Website and tutorial: Building posters for output at Instructional Development. <http://artworks.production.id.ucsb.edu/>. Follow link to Poster Tutorial at bottom of webpage.

American Society of Plant Biologists. Website: How to Make a Great Poster. <http://www.aspb.org/education/poster.cfm>

Purrington, Colin. Website: Advice on designing scientific posters. Swarthmore College, Pennsylvania. <http://www.swarthmore.edu/NatSci/cpurrrin1/posteradvice.htm>