**Design of Scientific Posters**

(modified after Alley, online supplement to *The Craft of Scientific Writing*)

Posters are a special type of presentation. When well designed, they are not simply journal papers pasted onto boards. Nor are they mounted sets of presentation visuals. Rather, posters, when effectively designed, are something in between.

The purpose of scientific posters is to present work to an audience who is walking through a hallway or exhibit. In poster presentations at conferences, the presenter usually stands next to the poster, thus allowing for passers-by to engage in one-on-one discussions with the presenter. In other situations such as the hallways of laboratories, universities, and corporations, posters are stand-alone presentations for passers-by. For a poster to communicate the work, the poster first has to orient an audience that is not seated, but that is standing. Often the audience has distractions of noise and movement from other people. Given those distractions, a journal article tacked onto a board fails as an effective poster because the audience cannot concentrate for a time long enough to read through the paper. In fact, given the distractions that the audience faces, many in the audience will not even bother trying to read a journal article tacked onto a board.

**So, what then makes for an effective poster?** This question is not easy to address because the expectations by the audience vary significantly from discipline to discipline. For instance, what an audience of a medical poster session expects differs significantly from what the audience of an American Geophysical Union poster session expects. Nonetheless, we will talk about some general guidelines that would apply to most situations in science and engineering.

**Web resources:**

Alley, The Craft of Scientific Writing

 http://www.writing.engr.psu.edu/posters.html

Eastern Kentucky

http://people.eku.edu/ritchisong/posterpres.html

North Carolina State http://www.ncsu.edu/project/posters/NewSite/CreatePosterText.html

Swarthmore

 http://www.swarthmore.edu/NatSci/cpurrin1/posteradvice.htm

**First, the title of an effective poster should quickly orient the audience.**  1. Make the title the most prominent block of text on the poster (either center or left justify at the top). 2. Do *not* typeset the title in all capital letters (such text is difficult to read). 3. Use words such as *of, from, with, to, the, a, an,* and *and* to separate details in the title. While phrase titles are most common, some scientists effectively use sentence titles for posters that present one main result. In such titles, state the result in the title and capitalize the words as you would in a sentence. Because the sentence title is a stand-alone, as opposed to being part of a paragraph, the period is generally dropped.

**Second, the poster should quickly orient the audience to the subject and purpose.** One good test is whether the audience recognizes the subject and purpose within 20 seconds of seeing the poster. Usually, a poster accomplishes this goal with a well-crafted title and with supporting images. Also, make sure that the type is large enough to be read and that enough contrast exists between the color of the type and poster's background. Typography recommendations can be found in the attached following PowerPoint poster templates.

**Third, the specific sections such as the results should be easy to locate on the poster.** Once readers recognize what the work is, they decide how much energy to invest into the poster. For instance, many will read only the motivation for the work, the objectives (or goals) of the work, and then the final results. Others, who have a deep interest in the topic, will try to read the poster from beginning to end. Given these different approaches to reading posters, another characteristic of an effective poster is that specific sections are easy to locate.

**Fourth, you should design the individual sections of a poster so that they can be quickly read.** Given the distractions that occur while reading posters in a symposium, the poster should not contain large blocks of text. Neither should the poster contain long sentences. If possible, the sections should rely on images: photographs, drawings, and graphs.

**References**

Alley, Michael, [*The Craft of Scientific Presentations*](http://www.writing.engr.psu.edu/csp.html) (New York: Springer-Verlag, 2003), pp. 211-217.

Alley, Michael, Jenny Lo, and Whitney Edmister, "In this study, we promoted and fostered undergraduate research through a special option in a required technical communication course," *2006 National ASEE Conference* (Chicago: ASEE, June 2006).

Bakker, Vickie, "Movement Behavior of Red Squirrels (Tamiasciurus hudsonicus) in Fragmented Forests," *EPA STAR Conference* (Washington, D.C.: EPA, July 16, 2001).

Cho, Daniel, "Particles in Microdischarge Plasama: Coulombic Interactions and Optical Effects" (Blacksburg, VA: Virginia Tech, October 2005).

Couch, Eric, Jesse Christophel, Eric Hohlfeld, and Karen Thole, "Cooling Effects of Dirst Purge Holes on the Tips of Gas Turbine Blades" (Blacksburg, VA: Virginia Tech, April 2003).

Kaeli, Jeffrey W., Hanumant Singh, and Roy Armstrong, "Morphological Image Recognition of Deep Water Reef Corals" (Blacksburg, VA: Virginia Tech, October 2005).

Lamancusa, John, Jens E. Jorgensen, Lueny Morell, Allen L. Soyster, and Jose Zayas-Castro, "The Learning Factory: Industry-Partnered Active Learning since 1994," 2006 Bernard M. Gordon Prize for Innovation in Engineering and Technology (Washington, D.C.: National Academy of Engineering, November 2006).

Thole, Karen, "Improving the Cooling of Turbine Blades and Vanes in a Gas Turbine Engine" (Blacksburg, VA: Virginia Tech, November 2004).

Wynn, Tess, "Proposal to Study the Effects of Woody and Herbaceous Vegetation on Streambank Erosion," *EPA STAR Conference* (Washington, D.C.: EPA, July 16, 2001).

NAME:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Poster Rubric (use this to record comments and ratings individually for poster #1)

**Poster #1 title and location:**

**1) Title quickly orients the audience:**

Location and typeset

Easily understandable

Effectively communicates context

Effectively communicates main message or result

**2) Poster quickly orients the audience to the subject and purpose.**

Audience recognizes the subject and purpose within 20 seconds

Images support and elucidate subject and purpose

Type is large enough to read

Enough contrast between color of type and color of background

**3) Specific sections such as the results are easy to locate on the poster.**

Easy to read from beginning to end

Easy to find individual sections like introduction, methods, results

**4) Individual sections of the poster can be read quickly.**

Poster is free from large blocks of text

Sentences are short

Images (photographs, drawings, graphs) anchor the sections

Poster Rubric (use this to record comments and ratings individually for poster #2)

**Poster #2 title and location:**

**1) Title quickly orients the audience:**

Location and typeset

Easily understandable

Effectively communicates context

Effectively communicates main message or result

**2) Poster quickly orients the audience to the subject and purpose.**

Audience recognizes the subject and purpose within 20 seconds

Images support and elucidate subject and purpose

Type is large enough to read

Enough contrast between color of type and color of background

**3) Specific sections such as the results are easy to locate on the poster.**

Easy to read from beginning to end

Easy to find individual sections like introduction, methods, results

**4) Individual sections of the poster can be read quickly.**

Poster is free from large blocks of text

Sentences are short

Images (photographs, drawings, graphs) anchor the sections

Group poster critique #1. Turn in only ONE per group.

**List the first and last names of each group member:**

**Poster #1 title and location:**

**Rate the poster in each of the following categories. Base your ratings on the guidelines presented in the Design of Scientific Posters handout, and justify your rating with specific examples and evidence from the poster.**

**1) Title quickly orients the audience.**

Excellent Very Good Good Fair Poor

**2) Poster quickly orients the audience to the subject and purpose.**

Excellent Very Good Good Fair Poor

**3) Specific sections such as the results are easy to locate on the poster.**

Excellent Very Good Good Fair Poor

**4) Individual sections of the poster can be read quickly.**

Excellent Very Good Good Fair Poor

**5) Summary statement – comment on poster’s overall organization, logic, and format.**

Excellent Very Good Good Fair Poor

Group poster critique #2. Turn in only ONE per group.

**List the first and last names of each group member:**

**Poster #2 title and location:**

**Rate the poster in each of the following categories. Base your ratings on the guidelines presented in the Design of Scientific Posters handout. This time, offer one or more specific suggestions of how the author might improve the rating.**

**1) Title quickly orients the audience.**

Excellent Very Good Good Fair Poor

**2) Poster quickly orients the audience to the subject and purpose.**

Excellent Very Good Good Fair Poor

**3) Specific sections such as the results are easy to locate on the poster.**

Excellent Very Good Good Fair Poor

**4) Individual sections of the poster can be read quickly.**

Excellent Very Good Good Fair Poor

**5) Summary statement – comment on poster’s overall organization, logic, and format.**

Excellent Very Good Good Fair Poor