


SPECIAL ISSUE ARTICLE

## Successful design and delivery of a professional poster

Judith Berg,  PhD, RN, WHNP-BC, FAAN, FAANP, FNAP (Clinical Professor)<sup>1</sup> & Rod Hicks, PhD, RN, FNP-BC, FAANP, FAAN (Professor)<sup>2</sup>

<sup>1</sup> College of Nursing, The University of Arizona, Tucson, Arizona

<sup>2</sup> College of Graduate Nursing, Western University of Health Sciences, Pomona, California

### Keywords

Advanced practice nurse (APN); education; leadership; nurse practitioners.

### Correspondence

Judith Berg, PhD, RN, WHNP-BC, FAAN, FAANP, FNAP, 800 The Mark Lane Unit 2901, San Diego, CA 92101. Tel: (619) 795-1800 (home), (520) 990-0275 (cell); Fax: 619-795-1828; E-mail: jberg@email.arizona.edu

Received: 15 February 2017;

revised: 12 April 2017;

accepted: 26 April 2017

doi: 10.1002/2327-6924.12478

### Abstract

**Background and purpose:** Poster presentations are increasingly popular for dissemination of scientific and clinical knowledge at professional meetings; however, this professional skill is generally absent from advanced practice registered nurse (APRN) curricula and acquisition of the skill must occur in other arenas. The purpose of this article is to promote professional development by educating APRNs, students, and faculty on the essentials of poster development and presentation.

**Methods:** To aid in poster presentation skill development, types of posters, advantages and disadvantages, content and design, and tips to enhance these presentations are discussed. What is known on these topics is summarized and emphasis on professional appearance and conduct is highlighted.

**Conclusions:** Content and layout, use of color, imagery, and positive and negative space are crucial design elements. Poster presentation essentials include being prepared, professional appearance, and professional behavior.

**Implications for practice:** Designing and presenting a professional poster is an essential skill for all APRNs as the ability to communicate knowledge is central to the role.

## Background

Poster presentations are increasingly popular for dissemination of scientific and clinical knowledge at professional conferences. Contemporary conference planners tend to schedule more poster sessions than oral sessions, as this is an efficient way to provide more opportunities for professionals to present creative works (American College of Physicians [ACP], 2016). Instructions on how to design and create posters are essential for professional development of advanced practice registered nurses (APRNs), students, and faculty (Bindon & Davenport, 2013). This professional skill is generally absent from APRN curricula; therefore, acquisition of the skill must occur in other arenas. The purpose of this article is to promote professional development by educating APRNs, students, and faculty on the essentials of poster development and presentation, to be achieved by discussing types of posters, advantages and disadvantages, content and design, and some of the dos and don'ts of these presentations. What is known on these topics is summarized but emphasis is placed on professional conduct because many authors and organizations have published information on the actual design and cre-

ation of professional posters (ACP, 2016; phcris.org, 2017; Purrington, 2016). The process of knowledge dissemination at professional meetings generally begins with submission of an abstract describing the work in response to a conference call. The submitted abstract subsequently goes through a competitive review process. See Pearce et al. on page — of this issue for details on creating an abstract. This article emphasizes the steps of poster development and actual presentation once an abstract has been accepted.

## Types of poster formats

Posters can be presented via digital image projection, split site, electronic format, or traditional single sheet. The type of poster presentation is directed by conference planners' instructions and can address issues such as date, time, location, size, format, and other useful information. The presenter must follow the directions put forth in conference poster guidelines. Read the directions; believe the directions; follow the directions (Lentz, 2017). These wise words should be taken to heart by all who are preparing a poster for knowledge dissemination at professional meetings, for to ignore them is to risk having a poster rejected.

## Digital image projection

Some conferences provide an opportunity for a few of the accepted posters to be highlighted by having the presenter give an oral presentation of the poster that is digitally displayed on large-screen, high-resolution monitors. Digital image projection can project the poster on a large surface easily seen by a group. Generally, this is offered in a separate space or side room so that attention can be given to one poster at a time. In this venue, the presenter gives an oral presentation of the poster while it is digitally displayed followed by a short question and answer session. Presenters customarily offer handouts, usually a replica of the poster, as the actual poster most often is not displayed in the general poster area (Bell, Buckley, Evans, & Lloyd-Jones, 2006).

## Split site

In this scenario, all presenters give a short presentation of the poster using one to two overhead projection slides. One of the slides provides the title, author(s), and contact details, while a second slide might give the key reasons why participants should look at the poster (Bell et al., 2006). Following these very brief presentations, the audience can move into the poster display area to view the posters. Presenters attend their posters to answer questions and engage in scholarly discussion of the work with interested parties. Variations of this can be found across professional conferences.

## Electronic

A newer version of a professional poster presentation is based on an electronic format that has a large monitor and computer to display multimedia versions of a poster (International Particle Accelerator Conference 2012, 2012). Such displays, connections to network sites, inclusion of a brief, taped oral presentation, or other media inserts, are not possible with a traditional printed poster. Only a selected number of presenters can be assigned to this modality, as there are generally limited numbers of terminals (because of rental cost) and limited space for these presentations. One advantage of ePosters is they are typically displayed before, during, and after the conference, often a good way to facilitate professional communication (Christenberry & Latham, 2013), but the disadvantage can be the high cost to the conference and/or presenter. Some conferences provide a set time the presenter can stand beside the computer terminal during the display of their poster and engage in scholarly discussion, answer questions, or network with colleagues focused on the work.

## Traditional one-page format

The traditional poster format is a single-page approach that places content on a flat surface in ways that enhance visualization and understanding of the content. This format relies upon visual appeal to encourage viewers to approach and read the content. Presenters traditionally stand by the poster at specified times in the conference schedule and it is during this time that viewers can ask questions and engage the presenter in scholarly discussion. Traditional one-page posters can be made in any number of sizes dictated by the conference instructions. One page posters can be printed on glossy paper, paper with matte finish, or more recently, cloth or vinyl.

## Poster advantages and challenges

Poster presentations have many advantages. Hardicre, Devitt, and Coad (2007) describe posters as storyboards of information. Posters force brevity and encourage emphasis on vital content. Posters can stand alone or be combined with other presentation formats; use of imagery instead of words can be powerful; messages conveyed are continuous and constant, which increase reliability; many view a poster simultaneously; and poster sessions are time and space efficient (Berg, 2005). Poster presentations facilitate collegial networking while fulfilling the stated outcomes of professional meetings and conferences (Bindon & Davenport, 2013). Novice presenters may find developing poster content less intimidating than writing a manuscript. Both posters and manuscripts offer the advantage of sharpening writing skills and promoting careful organization (Halligan, 2008). Poster sessions afford a more relaxed and interactive environment for knowledge dissemination (Ranse & Aitken, 2008) and may promote skills for scholarly discussion of the work. At the same time, posters can add evidence for promotion and tenure in a curriculum vitae (Durkin, 2011).

Poster presentations do have challenges. For example, the format is more passive and relies on visual appeal rather than content to attract a viewer (Duchin & Sherwood, 1990). Some scholars believe poster presentations carry less weight than oral presentations on curriculum vitae (Berg, 2005); however, the current practice of holding more poster than oral sessions at professional meetings may change this long-held view. Posters can be costly and require time for detailed planning and execution. Posters are most often created in an electronic program for that purpose which requires familiarity; alternatively, access to a professional with knowledge and facility for such a program can suffice. Once planned and created, posters must be professionally printed and conveyed to the place of presentation—typically to another city or location. This

requires access to resources, such as financial support, expert advice or supervision, and time.

## Getting started

The abstract must be developed in accordance with carefully followed guidelines for submission. Once the abstract has been selected for presentation, the next steps involve accepting the invitation to present, following detailed instructions about poster size, format, and noting when the poster will be displayed. The poster guidelines should detail what materials the conference will supply, such as poster boards, stick pins, tape, and all that is needed to hang a poster. Developing a timetable and work schedule for poster creation can be extremely useful (Keely, 2004).

## Content and layout

Types of posters (research, clinical, or project) and their content are directed by conference planners' abstract instructions, specific to each type. Specifics include use of headings that help the presenter align content with the final product (Berg, 2005).

Headings for research posters:

- Background and problem
- Purpose, research questions, or specific aims, hypotheses
- Sample description
- Methods (design, instruments, data management, data analyses)
- Results
- Conclusions and implications

Headings for clinical presentations:

- Background and problem
- Purpose
- Summary of what is known (brief literature review and critique)
- Steps involved in development of clinical solution or strategy
- Outcomes and implications

Headings for project posters (Forsyth, Wright, Scherb, & Gaspar, 2010):

- Background and problem
- Specific aim or purpose
- Sample and setting
- Approach (procedures, including proposed practice change(s), strategies for implementation, stakeholders, method for evaluation)
- Results or outcomes
- Significance, implications

Note that each type of poster includes implications. This inclusion is an essential component of the presentation and should be appropriate for the expected audience. For example, if the poster is being presented to a conference attended primarily by APRNs, the implications should be discussed related to that group. See Table 1 for details of content development for poster presentations.

The title is important. An effective title should be short, easily understood, eye-catching, and encourage the reader to examine the poster more closely (Taggart & Arslanian, 2000). Block (1996) suggested the title should be short, snappy, and highlight the subject matter. Effective titles avoid jargon with deference to accepted word choices of the discipline. Subtitles, as designated by colons, are overused and should be avoided.

Posters are a visual medium and rely on attracting a passing audience. The content of a poster, no matter its type, must cover the topic areas without excessive wordiness. Having an excessive number of sentences or words contributes to the busy feel of the poster and conference attendees rarely approach a wordy, busy poster. Content cannot be allowed to detract from a poster's visual appeal. Reason is if the poster does not attract attention, it will not be viewed carefully or closely. Therefore, the entire composition must be visually engaging from a distance (Rowe & Ilic, 2011).

Methods that promote visual appeal of a poster relate to design aspects such as font, layout or organization, use of color, use of imagery, and use of positive and negative space. Wise use of these elements can assist in the creation of a smart, appealing, and therefore, effective poster that transfers knowledge and stimulates further discussion between the viewer and presenter (Rowe & Ilic, 2011).

## Font

For a poster to be easily read, font size should be carefully selected (Keely, 2004). The title should be readable from 15 to 20 ft, most of the text should be readable from 5 to 6 ft (Radel, 2008), and the smallest text on the poster needs to be readable from 2 to 3 ft (Nemcek, Johnson, & Anderson, 2009). To achieve this, title lettering should be 2–3 inches in height (150–225 point), and text for the body of the poster should be at least 1/3 inch (24 point; Keely, 2004). If a font is too small, it can deter participants from viewing the poster more closely. The ACP (2016) advises you use no more than three different font sizes to create better uniformity. Type of font also is important. Sans serif fonts, such as Helvetica or Univers, are said to be good for titles, whereas Times Roman, Garamond, Palatino, or Century Schoolbook are suited for the body text (Block, 1996; Christenbery & Latham, 2013; Keely, 2004; Purrington, 2016). A combination of upper and lower case

**Table 1** Content development for poster presentations

Content dos	Content don'ts
<ul style="list-style-type: none"> <li>■ Start planning and creating your poster early; some say it takes at least 8 weeks</li> <li>■ Attract your audience from a distance—make key information easy to read from a distance</li> <li>■ Provide sufficient content to overview the project</li> <li>■ Include the main headings of the presentation</li> <li>■ Convey information without being wordy</li> <li>■ Keep title to no more than 10 words</li> <li>■ Use bullet points or phrases instead of complete sentences</li> <li>■ Be brief but thorough</li> <li>■ Use action verbs</li> <li>■ Write plainly, simply, briefly but never cryptically</li> <li>■ Follow your abstract headings</li> <li>■ State the implications for the audience expected</li> <li>■ Make sure outcomes and conclusions are supported by the data presented</li> <li>■ Limit your poster to a few main ideas; avoid reporting every aspect of your research or project</li> <li>■ Emphasize the results, findings, conclusions</li> <li>■ Acknowledge funding sources or individuals who have contributed</li> <li>■ Proofread for spelling and grammar errors</li> </ul>	<ul style="list-style-type: none"> <li>■ Include the abstract—convey via a handout</li> <li>■ Include references—provide a handout</li> <li>■ Include extraneous information</li> <li>■ Forget to have a colleague help you with content and proofreading</li> <li>■ Claim no one else has done this work—you could be wrong</li> <li>■ List titles of individuals you acknowledge</li> <li>■ Make the poster too long; avoid densely packed, high word-count content</li> <li>■ Expect anyone will spend more than 3–5 min at your poster</li> <li>■ Leave prospective readers hanging, or assume they are all experts; They are not</li> </ul>

letters is easier to read than all upper case, but if using an acronym and numbers in the body of the text, scale down the font size by one to two points to avoid overpowering the lower case text. Avoid underlining as it draws too much attention to a word or phrase; use italics instead (Purrington, 2016). White print on a dark background is more difficult to read than dark print on a lighter background (Keely, 2004; Nemcek et al., 2009). Use of a consistent font with text that is left justified is the easiest to read, as centered text leaves ragged edges that increase eye fatigue. The combination of font size and type, use of upper and lower case lettering, use of dark font color against a lighter background, and justifying text to the left rather than centering can increase the readability of the poster and boost the intended knowledge transfer.

### Layout/organization

The arrangement of the components of a poster can enhance or detract from its readability. For example, all are more easily read from left to right and top to bottom (ACP, 2016). When possible, use lists of sentences rather than blocks of text. However, if you do use blocks of text, the width of the text box should be approximately 45–65 characters, as longer or shorter are harder to read quickly (Purrington, 2016). Each element presented in text should be restricted to 50 words or less (Bindon & Davenport, 2013). Limit the use of acronyms as the title of the poster is important to viewers and should be

centered at the top and followed by placing author(s) and affiliation(s) directly underneath the title. Remember that each component or section of the poster is distinct, but the poster is also to be viewed as a whole (Christenbery & Latham, 2013). Berg (2005) discussed the “rule of thirds” suggested by Duchin and Sherwood (1990) that creates a  $3 \times 3$  grid pattern similar to a tic-tac-toe figure. Using this technique creates distinct areas to place content and provides a visually pleasing whole. Another variation on the rule of thirds is to imagine the poster’s face in three vertical columns giving a left, middle, and right column. This is more visually appealing than to divide the surface into three horizontal thirds. The poster’s layout does not have to be symmetrical, but it must have balance so that there’s a sense of proportion to the whole. Should you choose to use a large, colorful image or photo on the right, you would need to use a visual or text section of equal size on the left to enhance a sense of proportion (Christenbery & Latham, 2013).

The layout should flow logically from one panel to the next, and the presenter can use a variety of techniques, such as color, arrows, asterisks, lines, or numbering the frames to lead the reader from section to section. However, judicious use of these elements is cautioned, as overuse may give your poster a cluttered appearance. Some suggest arranging the most important sections at eye level, so the main findings or outcomes would need to be in this advantageous position. Key headings for each section are needed to understand and follow content.

## Color

Color is important for a poster presentation (Berg, 2005; Bindon & Davenport, 2013; Purrington, 2016). Colors are powerful tools for communicating hot to cold. Colors are associated with various moods, such as excitement, confidence, playfulness, truth, dignity, and elegance (U.S. Department of Energy, 2016). Warm colors are said to be more inviting (DeSilets, 2010), and contrast is best achieved by using complementary colors such as blue and orange or yellow and violet (Berg, 2005; Christenbery & Latham, 2013). Keep the color scheme simple to increase the visual appeal (Larive & Bulska, 2006) and avoid your attendees trying to figure out what the different colors mean. Dimly lit spaces are not ideal for dark color usage—if you do not know the exhibit space, use a light or pastel background with a contrasting darker complementary color for the greatest readability (Berg, 2005). Remember there are a significant number of potential attendees who happen to be red/green colorblind, so it is best to avoid those colors (Block, 1996; DeSilets, 2010; Nemcek et al., 2009; Purrington, 2016). The British Dyslexia Association (2007) suggests use of a cream or off-white color using good quality matte paper can enhance dyslexic individuals' ability to relate to the presented material. Adjacent colors should have gray value contrasts of at least 30% to be differentiated from a distance, and the most important points or sections should have the most important color with the greatest contrast to the background so that they stand out (U.S. Department of Energy, 2016).

Not everyone is free to choose their own color combinations for their poster, as many institutions and clinical organizations mandate the use of their template with logo and color format. In this situation, the poster creator has little to no ability to vary from the required format. Hopefully, the format with branded logo and color scheme provide sufficient contrast that enhances readability. In any case, the poster creator is freed from the time and energy needed to make color decisions and can concentrate on other aspects of design.

## Imagery

The substitution of imagery for words is appealing, as this can contribute to the enhancement of visual impact for your poster (Berg, 2005; Rowe & Ilic, 2011). Plus, reams of text on a poster deter potential audiences (Roe & Ilic, 2011). Imagery such as photos, bar graphs, pie charts, and other graphics can replace text and provide a picture of the work (Bindon & Davenport, 2013). Market studies show that communication effectiveness is increased 40%–50% when a visual, such as a graphic image, is added as people retain visual images far longer than the written word (U.S. Department of Energy, 2016).

There is no set rule for the number of images to use in a poster, but each image should be limited to making a single point and should support the poster's main message (Christenbery & Latham, 2013). Additionally, images should be carefully defined or labeled; for example, graphs or tables must be titled in a descriptive fashion so that they can stand alone. Do not use the overly detailed, small key that tends to accompany a table-making program—delete those keys. Graphs and table details should be visible from 6 ft away, and you must be sure the resolution of the photos used is sufficient to render them sharp and clear, not fuzzy (DeSilets, 2010).

## Positive and negative space

Positive space is the portion of the poster that has the titles, text, and images—the meat of the poster presentation. Negative space refers to the background or “white space” that frames the positive space. Consider a blank poster surface negative space. As the content is placed on the negative space, it acts as a backdrop to the content, and careful use of this space is essential to the poster's aesthetic appeal, and to the viewers' ability to follow the logical flow (Keely, 2004). Further, increased negative space highlights and draws attention to the poster's message (Berg, 2005).

The elements of poster design are useful tools to enhance your poster's visual appeal, which is fundamental to attracting an audience. Table 2 details essential elements of poster design.

## Poster production

Poster production must be considered to ensure success. Production includes software programs, review, printing, and transport.

## Software programs

Many software programs help to create a poster, including Microsoft PowerPoint, Adobe Design, Inkscape, Scribus, and Quark Express (Christenbery & Latham, 2013; phcris.org, 2017). Most have online tutorials that create a poster by guiding through essential content and design elements. ePoster formats are similar to those utilized for single-page posters, but are likely to become increasingly sophisticated as ePoster usage increases (Masters, Gibbs, & Sanders, 2015). Be familiar with software mandated by the conference, as this is what must be used to present, especially an ePoster. No matter the type of poster, it is wise to complete the entire poster on a single platform to avoid loss of data or difficulty with printing (Purrington, 2016).



Table 2 Poster design elements

Dos	Don'ts
<ul style="list-style-type: none"><li>■ Carefully select font sizes for readability (title from 15 to 20 ft; most text from 5 to 6 ft; smallest text from 2 to 3 ft)</li><li>■ Make titles 10 words or less</li><li>■ Select sans serif fonts like Helvetica or Univers for title</li><li>■ Select Roman, Garamond, Palatino, or Century Schoolbook for body of text</li><li>■ Use dark print on light background and use a combination of upper and lower case lettering as they are easier to read</li><li>■ Arrange content to read from left to right and top to bottom</li><li>■ Remember each section is distinct but poster is read as a whole</li><li>■ Consider the rule of thirds in your placement and organization</li><li>■ Be sure your content flows logically from section to section—use lines and arrows to assist your viewers</li><li>■ Use complementary colors to achieve contrast; this is visually appealing</li><li>■ Keep the color scheme simple to increase visual appeal</li><li>■ Remember adjacent colors should be at least 30% gray value contrasted to be differentiated from a distance</li><li>■ Substitute imagery for words in some places as this provides 50%–60% increased communication effectiveness</li><li>■ Define and label images</li><li>■ Remember to make graph and table details visible from 6 ft away</li><li>■ Use ample negative space to frame the content or positive space, as this highlights and draws attention to the message</li></ul>	<ul style="list-style-type: none"><li>■ Underline as it draws too much attention to a word or phrase; use italics instead</li><li>■ Use all capital letters, it's more difficult to read</li><li>■ Use a lot of acronyms, they are hard to follow</li><li>■ Use red/green combinations as a certain percentage of viewers might be colorblind</li><li>■ Overuse imagery, lines, and arrows as this might look too busy</li><li>■ Use too little negative space as this contributes to a “cluttered” or “busy” appearance</li></ul>

Review

Take advantage of all opportunities to review drafts or copy of the poster to correct errors or make changes to improve accuracy and visual appearance (ACP, 2016). Once the printing is complete, missed errors cannot be corrected, so it is a good idea to ask a colleague to view the copy. Confusing and ambiguous areas might be more obvious to a colleague unfamiliar with the content, so use a variety of readers to assist with proofreading. Early access to proofreading will insure there is time to make corrections or changes before presentation.

**Printing.** Poster printing is offered by many vendors. Be sure the printing service of choice provides opportunity to proofread prior to actual printing early enough to make needed corrections and changes. Often, printing is associated with a particular institution, and the creator may be bound to access this resource. For example, many academic institutions are linked via their graphic arts department to a printing or service bureau (ACP, 2016). Service bureaus connected to an institution or independent vendors can produce posters of any size on paper, or some even on fabric. Know cost of printing upfront to avoid surprises.

**Transport.** Careful transport of a completed poster is necessary to avoid becoming torn, crumpled, or creased, thus arriving in perfect condition. Many printing services supply (for an additional charge) protective tubes that facilitate transport. This is good investment, because the

carrying tube can be reused. However, the carrying tube should not be checked as baggage to avoid its loss. The best scenario is to carry the poster transport tube onboard and store it in an overhead bin. Increasingly, poster creators are engaging online printing services that offer an option to mail directly to the conference. One advantage to online services may be reduced cost because of large volume. Keep in mind that many hotels or conference centers charge to receive packages—including posters, so find out before that option is chosen. Another option is to mail a poster to the conference yourself using a postal service or the U.S. Post Office.

Be prepared. Bring basic equipment to hang your poster, even if conference organizers state they provide tape, Velcro, stickpins, scissors, etc. These items often go missing. Therefore, have your own as backup; they can always be carried back home if not used.

Poster production elements provide important practical tips to producing a professional poster presentation. Table 3 summarizes details of poster production.

Professional poster presentation

Aspects of professional role pertinent to presenting a professional poster include being prepared, professional appearance, and professional conduct. These areas are discussed in more detail below. See Table 4 for details of presenting a professional poster.

**Table 3** Poster production

Dos	Don'ts
<ul style="list-style-type: none"> <li>■ Follow the conference poster guidelines exactly</li> <li>■ Select a software program in which to create your poster; it is best to select the one recommended in your poster instructions to be certain of compatibility</li> <li>■ View the software program's online tutorial; utilize an expert familiar with the software program when possible</li> <li>■ Select a poster printing service early in the process to avoid last-minute glitches</li> <li>■ Understand poster creating, printing, and transport costs upfront; identify funding sources (or lack thereof)</li> <li>■ Review drafts or copy of the poster to correct errors or make changes</li> <li>■ Have colleagues with and without expertise in the substantive area review your poster copy; include someone with English language/grammar skills</li> <li>■ Plan for poster transport; know shipping charges and if mailing to the conference hotel is possible</li> <li>■ Carry your poster onboard the airplane if you are carrying it yourself</li> <li>■ Bring basic equipment to hang your poster: tape, scissors, Velcro, stickpins, etc. even if the conference planners say they will have those items on hand for you</li> <li>■ Bring single-page printed copies of your poster to provide to interested viewers</li> <li>■ Bring printed copies of the poster abstract</li> <li>■ Bring printed copies of your references</li> </ul>	<ul style="list-style-type: none"> <li>■ Wait until the last minute to create and print your poster; editing and error corrections or changes take time</li> <li>■ Forget to have colleagues help with editing and critiquing your poster copy</li> <li>■ Overlook the need for a transport tube or other carrying case if you don't plan to mail the poster to the conference hotel or site</li> <li>■ Check your poster as baggage; airlines sometimes lose checked baggage</li> <li>■ Expect everything you need to hang your poster will be available; bring it with you</li> </ul>

## Be prepared

Come to conference prepared to give a short oral poster summary, which should be no more than 2–3 min and highlight the problem, specific aim(s), sample, methods, main result, and conclusions/significance. These highlighted areas might be different for a clinical scenario, evidence-based practice project, or theory presentation; however, in all types of presentations, the foci are related to who, what, where, why, how, and significance. Be thoroughly familiar with the poster content so as not to fumble with explanations, answering questions, or discussing with colleagues. Before traveling to the conference, prepare to answer potential questions that may be asked; practice with colleagues. Be ready to reference background information and previous contributions to the science. Anticipate the audience of viewers and know other work in the field as well as those who have contributed to the knowledge base. Some of these individuals might even attend.

Presenters who are familiar with useful technology, such as quick response (QR) codes, can create the code before the poster presentation so that viewers have access to the poster, a website, or other materials pertinent to the project being presented. QR is a mobile phone readable barcode that can be thought of as a hypertext link that is print based. Simply encode a URL into the QR code and then point a mobile phone (or other camera-enabled

mobile) at it. If the device has QR code decoding software installed, it will fire up its browser and go straight to that URL (QR Stuff, 2017).

## Professional appearance

Professional appearance is a crucial aspect of professionalism in all situations. Even if a poster session is deemed a casual event, wear professional clothing, be well groomed, and avoid unprofessional behaviors such as gum chewing, giggling, or loud talk. You never know who, when, or where judgments will be made about you. One missed step related to professional appearance could have deleterious effect upon a career. It may even be beneficial to choose professional clothing that matches your poster colors, as this is said to increase poster attendance (Purrington, 2016).

Although there are no specific guidelines to follow about body art, for some, tattoos and piercings are not professional looking. You can remove piercings before a presentation, and it might be best to cover tattoos with clothing. If all tattoos cannot be covered, minimize attention to them by smiling, engaging, and keeping an open posture that encourages dialog, not perusal of personal appearance. The acceptance of body art is probably changing, and this advice may not apply in the future; for now, minimize attention to piercings and tattoos.

**Table 4** Presenting a professional poster

Be prepared dos	Be prepared don'ts
<ul style="list-style-type: none"> <li>■ Come prepared to give a short oral overview of your poster; think of it as an elevator speech or series of sound bytes</li> <li>■ Know the literature related to your research, clinical issue, or project</li> <li>■ Be prepared to answer questions—know your project, its data, the outcomes</li> <li>■ Explain tables and figures simply and succinctly when asked.</li> <li>■ Know your potential viewers and prepare to dialog with them; it is wise to be familiar with the work of the experts in your field</li> <li>■ Keep a black pen and correction fluid in your pocket in case a viewer discovers a mistake or typo</li> <li>■ Encode a URL into a QR code on your poster; this will link to whatever materials are associated with the URL</li> </ul>	<ul style="list-style-type: none"> <li>■ Forget to review your work shortly before the poster viewing—it should be “fresh” in your mind</li> <li>■ Underprepare</li> <li>■ Write or say “data is”; datum is singular; data are plural, so say and write “data are” during your poster session</li> </ul>
Professional appearance dos	Professional appearance don'ts
<ul style="list-style-type: none"> <li>■ Understand you represent your profession and your institution</li> <li>■ Be proud—this gives an air of confidence</li> <li>■ Wear professional clothing</li> <li>■ Wear comfortable but professional looking shoes—no tennis shoes or workboots</li> <li>■ Consider wearing colors that match or blend with your poster—this is known to enhance numbers of viewers</li> <li>■ Have a welcoming, open stance and demeanor</li> <li>■ Smile and make eye contact</li> <li>■ Maintain a positive enthusiasm for your subject</li> <li>■ Minimize visualization of your body art; some are very negative about how it looks in a professional environment</li> <li>■ Wear a name tag</li> </ul>	<ul style="list-style-type: none"> <li>■ Wear jeans and flipflops; this is a professional presentation</li> <li>■ Chew gum or tobacco—no one will interpret that as professional appearance</li> <li>■ Hover over your viewers—allow them to view your poster and indicate you will answer questions if there are any</li> <li>■ Wear sunglasses unless you have a medical condition that warrants it</li> </ul>
Professional behaviors dos	Professional behaviors don'ts
<ul style="list-style-type: none"> <li>■ Stand to the side of your poster</li> <li>■ Recognize an expert when he/she approaches—either from their name tag or from a picture you may have seen online</li> <li>■ Be courteous no matter the questions or behavior of a viewer</li> <li>■ Finish with one viewer before moving on to another</li> <li>■ Thank viewer for their interest</li> <li>■ Hand out business cards, abstracts, reference lists, one-page copy of your poster when appropriate; have your contact information on all handouts</li> </ul>	<ul style="list-style-type: none"> <li>■ Stand in front of your poster or block any of the content</li> <li>■ Leave your poster during the viewing period</li> <li>■ Take over the dialog with colleagues; answer questions and encourage interactive conversation instead</li> <li>■ Expect viewers to remain at your poster for more than a few minutes</li> <li>■ Have personal conversations with friends and colleagues during the session</li> <li>■ Stand with your hands in your pockets</li> <li>■ Use jargon and define acronyms each time you use one</li> <li>■ Read directly from the poster—use your own words</li> </ul>

## Professional behavior

Poster sessions are generally held for a finite time and tend to be well attended (Bindon & Davenport, 2013). Presenters are informed of the time and place to display their poster by conference instructions and should be prompt about hanging and dismantling their poster. View the exhibit space upon arrival at the conference to better prepare to hang the poster quickly and confidently at the designated time. Prompt removal of posters is essential, as several poster sessions may be held each day. Promptness of hanging and removing is the aspect of professional behavior analogous to timekeeping in oral presentation

sessions—talking overtime takes time away from a colleague, and this is very unprofessional. By removing a poster at the time directed, the next presenters have access to the exhibit space for their poster in a timely fashion.

Depending upon the conference poster session format, presenters should plan to attend their poster (stand by the poster) and interact with interested viewers. Sometimes posters are hung for longer time periods, and it is not feasible for the presenter to attend his/her poster during that longer time frame—sometimes the entire conference. In such cases, judiciously select times to attend your poster; the best strategy is to attend the poster when the largest



number of viewers is expected, such as during breaks or lunch periods. It is particularly important to attend your poster during unopposed poster viewing.

Stand beside your poster, rather than blocking it by being in front of it, as the title and visual appeal is what will attract viewers from a distance. Keep an open stance, make eye contact with potential viewers, and assume a friendly, welcoming smile. Do not allow friends and close colleagues to occupy all your time, as this may lead to missed opportunity to network with experts or others interested in your field. Further, many professional relationships have started by encounters at poster presentations; don't miss the chance to meet others interested in your work who might become coresearchers, scholars, or students. To facilitate networking, have business cards available to hand out, have abstracts printed for handout, have reference lists printed for handout, and provide single sheet printouts of your entire poster to interested viewers. Be sure your contact information appears on all handouts.

Some conferences have special apps that provide daily schedules for attendees and highlight various aspects of the meetings. These are generally free to the conference registrant and can be downloaded to a smart phone. There may even be staff at strategic places in the conference venue to help you download the app, and this is extremely helpful. Often, these apps have a section that allows you to post twitter comments; do it. Tweet about your poster, when it will be displayed, and when you will attend it. This is good advertising for your work and may increase your viewer numbers.

This article described the creation and presentation of a professional poster, an essential professional skill for APRNs, academics, and students. Dissemination of knowledge relies on a variety of modalities, and dissemination via poster presentation is increasingly popular. Knowledge of creating and presenting professional posters is absent from most APRN curricula, and this manuscript aims to fill that gap. Beginners at poster presentation should seek out a mentor to augment this knowledge.

## Acknowledgments

Judith Berg and Rod Hicks cowrote the manuscript; Judith Berg took the lead, but both contributed to the content of the report.

## References

- American College of Physicians (ACP). (2016). *Preparing a poster presentation*. Retrieved from <http://www.acponline.org/membership/residents/competitions-awards/abstracts/preparing/>
- Bell, C., Buckley, E., Evans, P., & Lloyd-Jones, G. (2006). An evaluation of digital, split-site and traditional formats in conference poster sessions. *Medical Teacher*, 28(2), 175–179.
- Berg, J. (2005). Fellows column. Creating a professional poster presentation: Focus on nurse practitioners. *Journal of the American Academy of Nurse Practitioners*, 17(7), 245–248.
- Bindon, S., & Davenport, J. (2013). Developing a professional poster. *AACN Advanced Critical Care*, 24(2), 169–176.
- Block, S. (1996). Teaching biophysics. Dos and don'ts of poster presentations. *Biophysical Journal*, 71, 3527–3529.
- British Dyslexia Association. (2007). *BDA dyslexia style guide*. Retrieved from [http://www.bdadyslexia.org.uk/common/ckeditor/filemanager/userfiles/AboutUs/policies/Dyslexia\\_Style\\_Guide.pdf](http://www.bdadyslexia.org.uk/common/ckeditor/filemanager/userfiles/AboutUs/policies/Dyslexia_Style_Guide.pdf)
- Cristenbery, T., & Latham, T. (2013). Creating effective scholarly posters: A guide for DNP students. *Journal of the American Association of Nurse Practitioners*, 25(1), 16–23.
- DeSilets, L. (2010). Administrative angles. Poster presentations. *Journal of Continuing Education in Nursing*, 41, 437–438.
- Duchin, S., & Sherwood, G. (1990). Posters as an educational strategy. *Journal of Continuing Education in Nursing*, 21(5), 205–208.
- Durkin, G. (2011). Promoting professional development through poster presentations. *Journal for Nurses in Staff Development*, 27(3), E1–E3.
- Forsyth, D., Wright, T., Scherb, C., & Gaspar, P. (2010). Disseminating evidence-based practice projects: poster design and evaluation. *Clinical Scholars Review*, 3(1), 14–21.
- Halligan, P. (2008). Poster presentations: Valuing all forms of evidence. *Nurse Education in Practice*, 8(1), 117–120. <https://doi.org/10.1016/j.nepr.2007.02.005>
- Hardice, J., Devitt, P., & Coad, J. (2007). Ten steps to successful poster presentation. *British Journal of Nursing*, 16(7), 398–401.
- International Particle Accelerator Conference 2012. (2012). *Electronic posters. What is an electronic poster or ePoster?* Retrieved from <http://www.ipac12.org/electronicposters.htm>
- Keely, B. (2004). Planning and creating effective scientific posters. *Journal of Continuing Education in Nursing*, 35(4), 182–185.
- Larive, C., & Bulska, E. (2006). Tips for effective poster presentations. *Analytical and Bioanalytical Chemistry*, 385, 1347–1349.
- Lentz, M. (2017). *Writing a WINing abstract*. Retrieved from <https://www.winursing.org/research-conference/2017-win-conference/presenters>.
- Masters, K., Gibbs, T., & Sandars, J. (2015). How to make an effective e-poster. *MedEdPublish Year*, 1, 1–9. Retrieved from <https://doi.org/10.15694/mep.2015.004.0001>
- Nemcek, M., Johnson, D., & Anderson, F. (2009). Poster presentations in the primary care setting: Mary Ann Nemcek and colleagues describe how to prepare a poster for professional and practice use at conferences and in the workplace. *Primary Health Care*, 19(4), 34–39.
- Phcris.org (2017). *How to design posters for maximum impact*. Retrieved from <http://www.phcris.org.au/guides/poster-presentations.php>
- Purrrington, C. (2016). *Designing conference posters*. Retrieved from <http://colinpurrrington.com/tips/poster-design>
- QR Stuff. (2017). *What's a QR code?* Retrieved from <http://www.qrstuff.com/qr-codes.html>
- Radel, J. (2008). *Designing effective posters*. Retrieved from [www.kumc.edu/SAH/OTED/jradel/posterPresentations/PstrStart.html](http://www.kumc.edu/SAH/OTED/jradel/posterPresentations/PstrStart.html)
- Ranse, J., & Aitken, C. (2008). Preparing and presenting a poster at a scientific conference. *Journal of Emergency Primary Health Care*, 6(1), 1–9.
- Rowe, N., & Ilic, D. (2011). Research: From concept to presentation. Poster presentation—a visual medium for academic and scientific meetings. *Paediatric Respiratory Reviews*, 12, 208–213.
- Taggart, H., & Arslanian, C. (2000). Creating an effective poster presentation. *Orthopaedic Nursing*, 19, 47–52.
- U.S. Department of Energy. (2016). *Environmental Management Science Program Workshop. Tips for effective poster presentations*. Retrieved from <http://222.osti.gov/em52/workshop/tips-exhibits.html>