# Creating Stunning Scientific Posters

## A Step-By-Step Guide
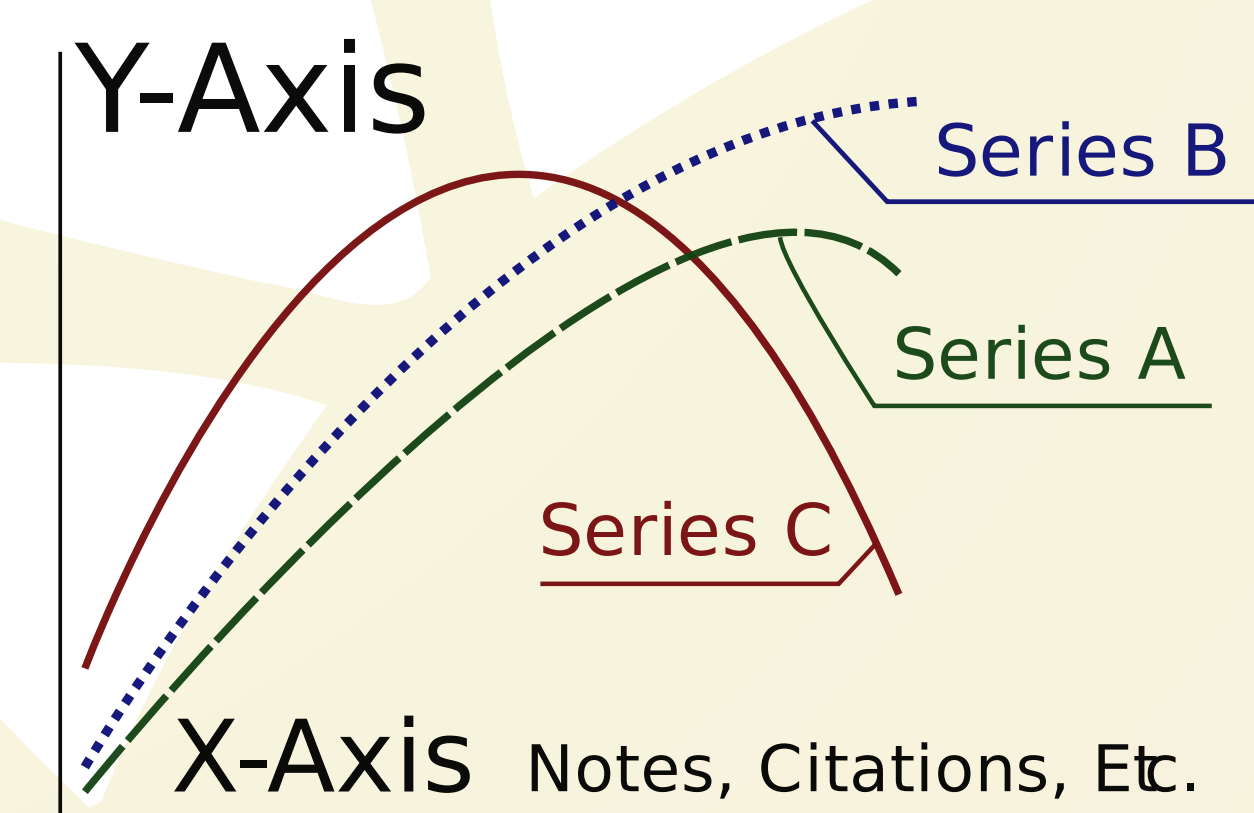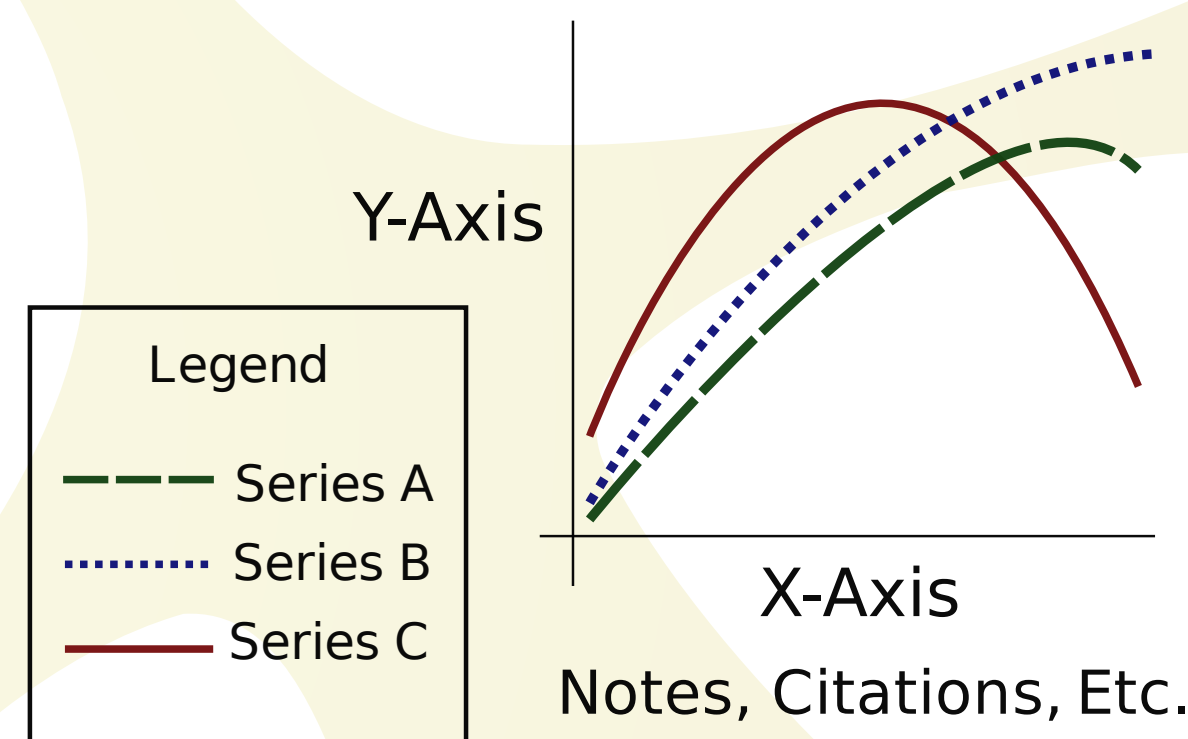
SpokenScience.com, University of Wisconsin, Madison's Materials Research Science and Engineering Center,
The Materials Research Society.

## Summary

The scientific poster offers the opportunity to share research results in a flexible and engaging format. Here, we offer some simple step-by-step tips for designing scientific posters that deliver maximum impact with minimum headache. By leading with the content, choosing the best software tools, picking a simple palette, using text that people can read, laying it out logically, testing your print, and thinking of something to say, you can create a scientific poster that draws and keeps attention, and clearly conveys the results of your work.

## 1. Compose Your Content

The first step in any successful design process is to sit down with the simplest possible tools (ususally a pencil and paper) and decide what you want to make. In the case of a poster, this means choosing the one particualr research area you wish to highlight, selecting and optimizing the relevant figures, and beginning to write the accompanying text. You should have a very good idea of the story you are going to tell before you start thinking about how to lay it out visually. Remember when selecting your figures to maximize the space used to show the data. At left are two identical graphs, one with the legend and label outside the axes, and one with them moved inside. Note how the second graph makes the data nealy double the size, and more clearly identifies the series. This is a simple technique that can result in a far more effective use of space.

*Y-Axis*

Legend
- — Series A
- ⋯ Series B
- — Series C

*X-Axis*

Notes, Citations, Etc.

**NO**

*Y-Axis*

Series B
Series A
Series C

*X-Axis* Notes, Citations, Etc.

**YES**

## 2. Choose Your Software

One of the most important decisions you will make in designing your poster is choosing what software to use. They say a good carpenter doesn't blame her tools; that's partly because she carefully chose the very best tools available. The list to the left compares the available features of some common software available for poster creation. The last entry, Inkscape, was the software used to make this poster. It is freely available for download at www.inkscape.org.

| | Microsoft Powerpoint | Apple Pages | Adobe Illustrator | Inkscape |
|---|---|---|---|---|
| Vector Graphics Support | ● | ● | ● | |
| Bezier Drawing Tools | ● | ● | ● | ● |
| LaTex Equation Editing | | | | ● |
| Layered Image Support | | ● | ● | ● |
| Control of Export Resolution | | ● | ● | ● |
| Free, Open-Source Software | | | | ● |

## 3. Select a Color Palette

Once you have your main ideas and your figures in hand, you should pick the palette of colors you wish to use on your poster. Too many colors will overwhelm the viewer, too few and you are unlikely to get noticed. This poster uses a palette of three colors, which are muted versions of the primary colors. The values for these colors in the RGB and HSL color maps are shown at right. It is important to record these values, so you can obtain consistent color if you switch to a different software program for editing accompanying figures and text. Note that these values are for computer display only, color may change when printed (See Step 6).
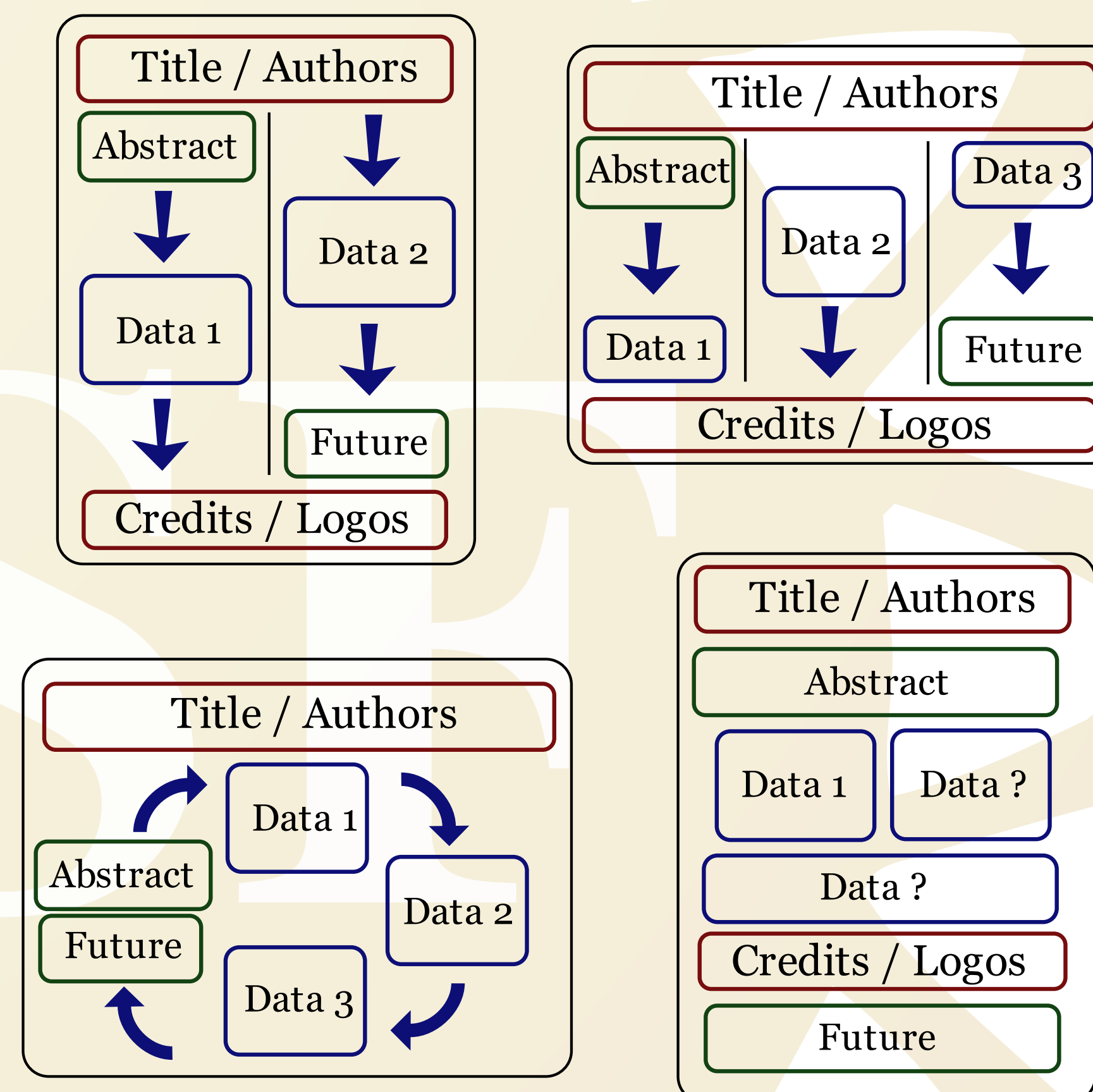
| | | | | | |
|---|---|---|---|---|---|
| Red Value | 77 / 119 | 13 / 19 | 0D / 13 | 00 / 0 | (hex) (dec) |
| Green Value | 0D / 13 | 43 / 67 | 0F / 15 | 00 / 0 | (hex) (dec) |
| Blue Value | 0E / 14 | 13 / 19 | 77 / 119 | 00 / 0 | (hex) (dec) |
| Hue Value | 255 | 85 | 169 | 0 | |
| Saturation Value | 205 | 142 | 208 | 0 | |
| Lightness Value | 66 | 43 | 66 | 0 | |

## 4. Select Fonts and Sizes

It can sometimes be tempting to fill your poster with as many different fonts and sizes of text as your software will spit out; but don't. Flashy fonts and changing sizes only distract the viewer from the content. Pick one font for the text, and one for the titles and headings, and stick to it. As for sizes, you want the text big enough so it can be read from a distance of about two meters, (usually at least 32 pt.) A number of sizes are shown at right. Keep in mind that fonts might scale if you scale the underlying image, another good reason to use a program that measures space in printed dimensions (See Step 2), and to test print the poster in time to make revisions (See Step 6).

12 point
16 point
20 point
28 point
36 point
40 point
48 point
56 point
64 point
72 point
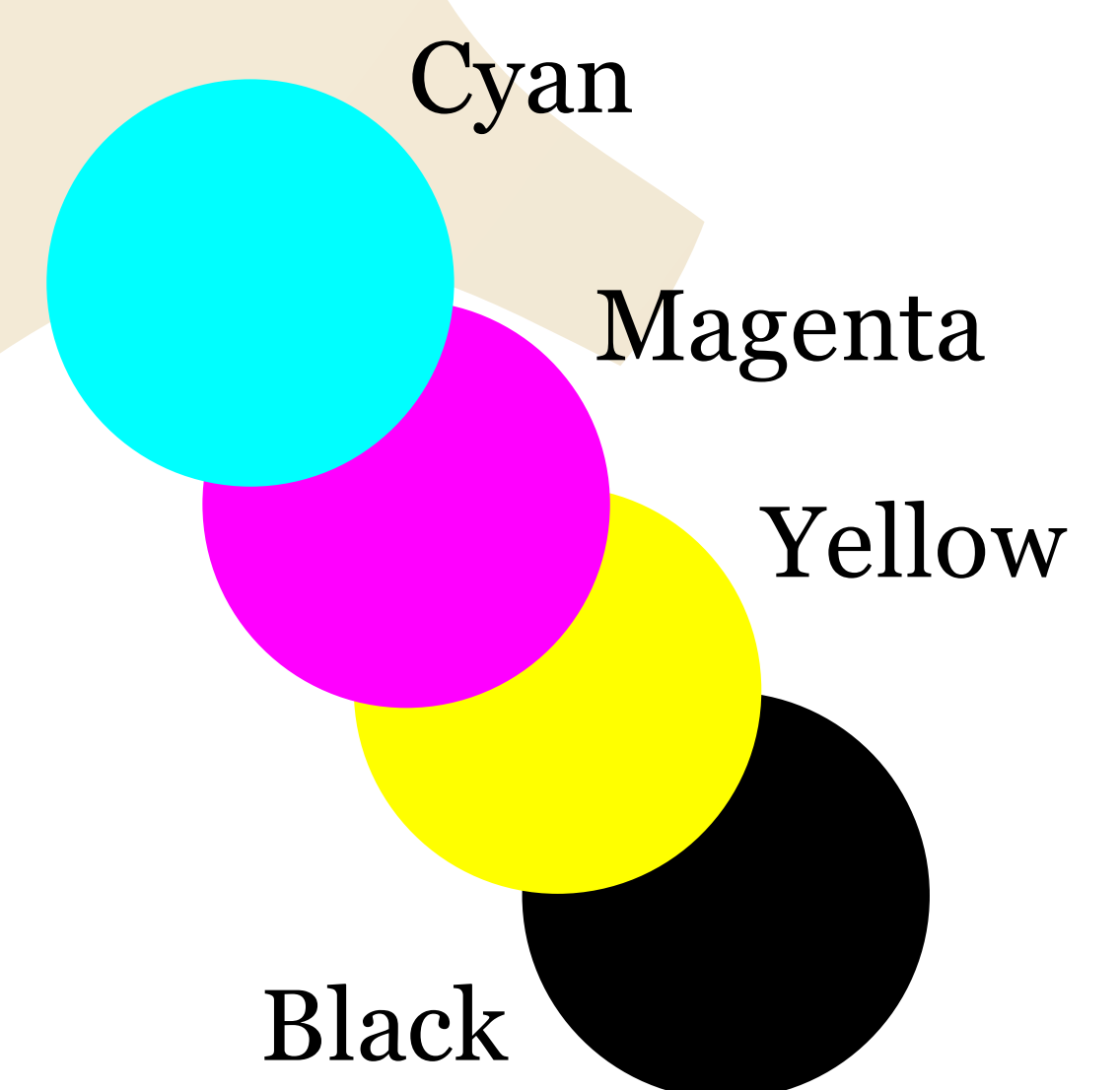86 point
100 point
120 point
144 point

## 5. Layout

The visual layout of your poster should be one of your last steps. The story that you constructed in Step 1 should largely determine the shape that your poster takes. You should always include an abstract or summary as the first piece of information, usually followed by a description of the motivation for your work and the approach or methodology used. Your data should include a discussion of its signifiance, and it is common to close with a recommendations for future work. Shown at left are four possible layout options. Two (above) are divided into clean, legible columns, and guide the eye through the poster. Two (below) leave you wondering where to go next. Note that if you have chosen your material, crafted the story, and selected a color and text palette, it is a straightforward matter to design a poster for any size or orientation.

Title / Authors
Abstract → Data 2 → Future
Data 1 → Credits / Logos

Title / Authors
Abstract, Data 2, Data 3, Data 1, Future
Credits / Logos

Title / Authors
Abstract, Data 1, Future, Data 2, Data 3
Title / Authors
Abstract, Data 1, Data ?, Data ?
Credits / Logos
Future

## 6. Print and Revise

Perhaps the most important thing you can do to make sure you have a great poster is to PRINT IT EARLY. It's impossible to tell accurately whether it works as a poster until you see it full size. Color can also be an issue, since computer graphics display in the RGB color space, but printed materials rely on a four-color process, known as the CMYK space (shown at right). Since the actual color depends on a huge number of factors, there is no well-defined relationship between the RGB and CMYK spaces, so you just have to test. Seeing the poster full-size also makes for easier proofreading, and will give you a chance to solicit feedback from colleagues in time to make changes.

Cyan
Magenta
Yellow
Black

## Recommendations

If you followed these steps, you likely now have a stunning, elegant scientific poster to share at your next research conference. Since you went to the trouble of making the darn thing, why not go ahead and think of some witty, insightful things to say about it too? Let's face it, most people came to the poster session in hopes of scoring a free cocktail or two, and it's going to be an uphill battle to make them care about your poster. You'll have an easier time if you can speak intelligently about what was the most difficult or surprising thing about this work, what other data you collected but didn't show here, or where you are hoping to go with this work if you can only get [fill-in-the-blank]. Think of the poster as an ice-breaker, it is the conversation that follows it that has the potential to open up your next professional opportunity.