

## Research Posters/ Technical Tips

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## Research Posters/ Technical Tips

### Ordering Posters

*Please read completely before you start your poster!*

This document only applies to making poster artwork. These directions do not apply to producing 4-color process offset or digitally printed collateral or web and video graphics.

#### Who Can Receive Posters

Posters are available at no charge to current UTCS students, faculty and staff for department-related work, such as conference presentations and talks. We regret we cannot service other departments or visitors. Posters cannot be produced for personal use.

#### How to Order a Poster

- The [publications request form](#) must be submitted to start your job. No walk-in traffic is accepted.
- Include:
  - *When do you need it?*
  - *Do you want it mounted?*
  - *What is the finished size?*
  - *Do you want glossy or matte paper? Matte is the most common.*
  - *What is the URL of PDF file to be printed?*
- Please include the best contact phone number on your form where you can be reached immediately if problems arise when printing your file.
- **Minimum two business day lead-time** is required to print posters. Various technical, supply difficulties or competing deadlines may prohibit pubs from accommodating last minute requests; there are no guarantees that a last minute job can be done on time.

#### Paper Sizes

Posters are limited to 34" (max poster width) in one direction. Standard poster sizes are 20" x 30" and 30" x 40". Carefully read the instructions provided by the meeting organizers for poster size constraints and information that the poster must include.

#### Horizontal or Vertical Page Orientation

You can make your poster either horizontal or vertical. Horizontal is the most common.

#### Poster Board Sizes

We have two sizes of poster board—30" x 40" and 20" x 30". If your poster will be mounted, please size your artwork to those dimensions. Most programs have some way of setting up dimensions in the document—see the document and page set up windows.

#### Mailing Tubes

We do not supply mailing tubes for rolled posters.

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### Basic Instructions for Making a Poster

#### Choosing Fonts and Font Sizes

We suggest using san serif fonts (e.g. Helvetica and News Gothic) for titles and headings. Use serif (e.g. Times New Roman and Garamond) for body text.

#### **Suggested font sizes:**

- Title: Between 72 and 150 points
- Subtitles: ~60 points
- Body text: ~24 points

#### Creating Vector Images

In general, avoid just "cutting and pasting" graphs, charts and illustrations into your poster. Use vector programs such as Adobe Illustrator or Macromedia's Freehand because both programs can produce images that can be blown up infinitely without loss of clarity. Illustrator has the built-in ability to make several types of graphics the program. It has a spreadsheet option, much like Excel, where you fill in the data and select the type of graph you want to generate. One copy of Illustrator is located in the grad lounge. The program comes with an embedded tutorial program. Two copies of Adobe Illustrator CS Classroom in a Book are available to check out from the grad lounge and one will be with the workstation.

Make your art at 100% scale.

#### Undos and History

Most programs let you specify the number of undos you can make and/or have a history palette in case you make a mistake and need to go revise your file. If you have enough memory, set your undos higher (around 10 steps).

#### Getting Started in Illustrator

1. Sketch out a detailed drawing of your poster before you begin. Assign sizes to the various elements.
2. Choose your elements and their size. These include photos, logos, text blocks, charts, illustrations and graphs. When determining the size of a graph, include in that size the heading and key.
3. Create all elements of the poster separately before you combine them into a larger file for efficiency and manageability. You can do all of this in Illustrator. The elements you can assemble before making the final document include:
  - a. Text;
  - b. Vector charts and graphics;
  - c. Photos and pixelated images;
4. Setting Up Your Poster Page Size in Adobe Illustrator
  - a. File (Menu)> New> New Document dialog box. Type in the poster size (30" x 40" or 20" x 30"). Select "Unit:" inches. "Color mode:" CMYK.
5. Managing Layers — Most graphic programs allow you to work in layers so that you more easily organize things. Putting each group of graphic elements on a different layer while you are working makes it much easier to work with the file, especially when creating complicated charts or other complex graphics.
  - a. Using the layers palette, add a layer for each group of elements. Window (Menu) > Layers. This brings up the Layers palette. Click on the small black arrow at top right to bring up the options. Select "New Layer". In this window type the name for each individual object you will add to the document. E.G.: Background, Graphs, Text, Graphics, etc.
  - b. You can choose whether to view or hide the layer by toggling the "eye" icon. When the "eye" is gone, the layer is invisible, but it still remains in the document.

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- c. To move an item from one layer to another, select the item (or grouped object) with the appropriate selection tool (see Selection Tools below). In the Layers palette (under Windows (Menu) > Layers) you will see a small colored square (the color of that layer) on the right side. Move the little dot to the correct layer and your object will move.
  - d. To change the stacking order of layers, select the name of the layer in the layers object and move it up or down the list. The closer to the top of the layers palette the layer is, the higher it is stacked in the document. Backgrounds will be at the bottom.
  - e. To duplicate a layer, drag it to the bottom of the layers palette onto the icon that looks like a document with a turned down page.
  - f. To delete a layer, you must drag the layer to the trash or choose delete layer to get rid of it from the file.
6. Selection Tools
- a. Main Selection Tool— The black arrow selects all grouped objects. This is good for selecting text.
  - b. Direct Selection Tool— The white arrow selects only a segment of a grouped object. Use it for modifying the shape of an object at anchor points.
  - c. Group Selection Tool— The white arrow (+) selects grouped objects individually without changing the position of the other objects within the group. Use this if you have a graphic made of many grouped objects to move or alter an object within a group without changing the position of the other objects.
7. Using Type.
- a. There are several ways to use type in Illustrator. You can type directly in the program. This is advisable when putting in a headline or labeling a graphic. You can also import type from a text editor.
    - i. To cut and paste type into Illustrator, draw a text box with the text tool. Then cut and paste the text into the box by clicking inside the box.
    - ii. To import from a text file, go to File (Menu) > Place. Navigate to the file and select it. You can do some text editing inside the program, including spell checks.
    - iii. To check spelling: Edit (Menu) > Check Spelling (or Command I—Mac).
    - iv. To change colors, font and size, highlight the actual text with the text tool or click on the text box to select it, and then make changes.
    - v. To add an effect such as a drop shadow, make sure you have loaded your plug-ins. Using the text tool (T) select the type and go to Filter (Menu) > Stylize > Drop shadow. Select the color and specifications for the drop shadow.
    - vi. Converting type to outlines. This is a good idea if you are having trouble with a PDF file, have a lot of fonts already being used, are on a computer without a lot of memory, or plan to send the file to a service bureau for output. It eliminates the risk of improper display of fonts, but it makes the file much harder to edit. If you decide to do this, keep another backup copy of the file where you can edit the text.
8. Making Charts— Adobe Illustrator has a graphing component built into the program.
- a. For detailed instructions, go to Help (Menu) > Illustrator Help.
  - b. To make charts in Illustrator, select the chart icon in the Tools palette. Select the type of graph you want to make. An Excel-like spreadsheet will pop up. Enter your data there. Set up the spreadsheet as shown in the Help menu.
  - c. Use a separate document for each graph before you put them into your main document because the Undo command doesn't work for graph production. Each graph should be on its own layer within the main document.
  - d. Data can be cut and pasted in, brought in from a text-delimited file or typed directly into the spreadsheet. Omit commas in numbers—ex. 125000 instead of 125,000. A few more pointers:
    - i. You can edit the text by changing the font, but editing is greatly reduced in graph mode.
    - ii. You can't add a background color to a graph file. If you want to do that, put a background on another layer or behind your graph in that layer. Then group the elements or layers.
    - iii. When you size the graph with the pointer tool, it does not include the text area. Draw your box smaller or spec it mathematically.
9. Three Essential Tools:

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- a. Rulers— View (Menu) > Show Rulers (Command R). Rulers must be present if you want to pull a guide from them. The 0,0 coordinate can be moved by pulling the small corner square at the intersection of the rulers to a starting point in the document with a selection tool. Select the small square and drag it to the desired location. By releasing the mouse and the 0,0 point changes location.
- b. Guides— View (Menu) > Guides. Guides making lining things up easier. Guides are associated with the layer they are drawn in. Guides may be locked or unlocked, if you need to move them.
- c. Info palette— Windows > Info. Info gives you exact X and Y coordinates and sizes for graphics you are drawing. When drawing a box, circle, star or spiral, clicking first on the document will open up a window and allow you to spec an exact size for the element. You can also click and drag to draw one.

### Saving PowerPoint Graphics Into Illustrator

It is possible to pull a graphic file out of PowerPoint and save it into Illustrator to use it as a vector image without having to redraw an existing graphic.

#### *The Process:*

- Open the PowerPoint presentation and navigate to the slide with the graphic you need.
- Select the graphic by clicking on it.
- Then either cut and paste it into an Illustrator document or click and drag it into Illustrator.
- Check it in Illustrator to make sure you have selected a vector image by using the View (Menu) > Outline or Command Y. If you can see the graphic in outline form, you have a scalable vector image. You can also select type the same way—cut and paste text into Illustrator or drag it in using the Pointer tool in PowerPoint. See Editing Type in the Illustrator Help section “Trouble-shooting Font Problems” in this document.

### Image Formats and Modes for Images

Do not use images in .GIF format in your document because they will not have enough color information for the printer to render them correctly. Image formats used in your documents should be AI, EPS, TIFF or JPEG. JPEG compression method is usually lossy compression. Do not save, change and keep resaving a JPEG file—some visual quality is lost in the process and cannot be restored. When working on an image file, save it in another format (such as AI in Illustrator; TIF or PSD in Photoshop) and convert it to JPEG after it is completed and sized appropriately for the document.

Please do not use a dark or saturated background, which does not print well and uses too much ink. Instead, be creative with fonts and font colors, diagrams, photos, colored boxes and lines.

### Resolution and File Size for Pixel-based Images

Pixel-based graphic programs such as Adobe Photoshop are fine for photographs, but will have to be 150 to 300 dpi at 100% scale to print well. These files are going to be very large, so using the vector program will work better. We don't recommend using 300 DPI files unless you are producing something that has to be very sharp. Extremely large files are difficult to work with and print very slowly. Please do not create your poster in Photoshop. The file will be too large, and we will not be able to print it. For your research poster, only use Photoshop to edit photographs before placing them into your poster file.

### Saving in Illustrator format

([http://help.adobe.com/en\\_US/illustrator/cs/using/](http://help.adobe.com/en_US/illustrator/cs/using/))

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1. Choose File > Save As or File > Save A Copy.
2. Type a filename, and choose a location for the file.
3. Choose Illustrator (\*.AI) as the file format, and click Save.
4. In the Illustrator Options dialog box, set the desired options and click OK:

### Version

Specifies the version of Illustrator with which you want your file to be compatible. Legacy formats don't support all the features in the current version of Illustrator. Therefore, when you select a version other than the current version, some options for saving aren't available, and certain kinds of data will be changed. Be sure to read the warnings at the bottom of the dialog box so that you are aware of how the data will be changed.

### Subset Embedded Fonts When Percent Of Characters Used Is Less Than

Specifies when to embed the entire font (as opposed to just the characters used in the document) based on how many of the font's characters are used in the document. For instance, if a font contains 1,000 characters but the document only uses 10 of those characters, you may decide that embedding the font is not worth the extra file size.

### Create PDF Compatible File

Saves a PDF representation of the document in the Illustrator file. Select this option if you want the Illustrator file to be compatible with other Adobe applications.

### Include Linked Files

Embeds files that are linked to the artwork.

### Embed ICC Profiles

Creates a color-managed document.

### Use Compression

Compresses PDF data in the Illustrator file. Using compression increases the time required to save the document, so deselect this option if you're experiencing very slow (8 to 15 minute) save times.

### Save Each Artboard To A Separate File

Saves each artboard as a separate file. A separate master file that includes all of the artboards is also created. All of the content that touches an artboard is included with the file for that artboard. If artwork needs to be shifted to fit it onto a single artboard, a warning appears to let you know. If you don't select this option, the artboards are combined into a single document and are converted to object guides and (in Illustrator CS3) crop areas. The artboard used for the saved file is based on the size of the default document startup profile.

### Transparency options

Determines what happens to transparent objects when you choose a version of Illustrator format earlier than 9.0. Select Preserve Paths to discard transparency effects and reset transparent artwork to 100% opacity and Normal blending mode. Select Preserve Appearance And Overprints to preserve overprints that don't interact with transparent objects. Overprints that interact with transparent objects are flattened.

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### File Format and Size

Final files must be delivered in PDF (portable document format) at 100% scale with all fonts and graphics embedded.

### Using Colors Properly

Keep contrast high between foreground elements and background. Do not overuse color.

#### Using Gradients

Please do not use large gradations or huge areas of solid color on your posters. Gradations often do not print well at this size and use a lot of ink. If you do choose to use a gradient for small areas of your poster, there are methods for creating better gradients for print.

1. Don't go pure white—A common mistake when applying gradients is to take the blend all the way to pure white. While this will look great on-screen, once printed you'll end up with a noticeable, blotchy step just before the blend fades out completely. The solution is to give the white in your gradient a slight tint; about 2 or 3% is suitable.
2. Use start and end colors—When choosing the colors for your gradient, look for similarities. Blending two completely different colors, especially strong ones, can leave a gray patch in the middle of the gradient. By adding a little of the start color to the end color, and vice versa, you'll get a smoother blend. For example, if you want to blend from black to cyan, set your start color to 40 cyan/100 black, and the end color to 100 cyan/2 black.

#### RGB vs. CMYK

Only CMYK or Pantone Solid to Process color palettes should be used when designing for print, not RGB. RGB refers to the colors of light that mix to create colors. In design, RGB color is only used in website design and other designs that are only meant to be seen on screen (software user interfaces, HTML email, PowerPoint presentations and TV or movie graphics). If you send a design to be printed, or print a design that has been created in the RGB color space, the printout may not match what you see on the screen - RGB colors on the screen tend to be brighter than what is printed on paper.

CMYK color is also known as four-color printing, full-color printing or process color printing. This process is used in projects where printing the full range of color is required—in projects with full-color photography or when more than three colors are used in the design. There are colors that cannot be reproduced using the CMYK process such as metallics and fluorescent colors.

#### Selecting the Right Color Swatches

Many graphic programs include different color swatch libraries. Default colors are in RGB mode in most programs. If you print with these colors, they will be duller on paper than they look on screen. Create your poster in CMYK mode and use CMYK or Pantone Solid to Process Coated color swatches.

#### UT Color Swatch Library

An Adobe Swatch Exchange (ASE) library of the UT color palette can be imported into your Adobe Illustrator or InDesign document from the Poster Help page. This will give you access to the official UT color palette without having to find all these colors in the Pantone palettes. The PMS number for Texas Orange is PMS 159 CVC. The web hexadecimal number for Texas Orange is CC5500 to match it for web.

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To import the ASE library in Illustrator, select Window (Menu)> Swatches. Click on the small black arrow at the top of the default swatch palette to open the options. Select Open Swatch Library and select “Other Library” at the bottom of the list. Navigate to the downloaded file “UTColors\_CMYK.ase” that you have already downloaded from “Poster Help” and select it. A new swatch library will open. Just select the colors and use as you would any other color swatch.

### Trouble-shooting Font Problems

#### Font Substitution

When a file is converted to PDF format, there can be problems with your fonts, especially those inside imported image files. To fix this, replace the font with another font or if using Illustrator or Freehand, you can convert the type to paths or outlines before you import it. See “Converting Type to Paths or Outlines” in this document for instructions.

#### Editing Type in Illustrator

When type is imported into Illustrator, use the text tool (T) from the Tools palette to edit it. Use the Character and Paragraph palettes—Window (Menu) > Type > Character and or Paragraph—to change the size, typeface, alignment, leading and kerning. Use Command I [found under Edit (Menu)] > Check Spelling to check your spelling.

#### Converting Type to Paths or Outlines

Once type has been converted to paths or outlines, it becomes a vector image, which no longer works as type in the file and is difficult to edit. Before you convert your type, save a copy of the file in case you need to edit it later. If you look at the file in Keyline or Outline view mode, the type will look black before conversion. In Illustrator: View (Menu) > View Outline

To convert type to paths or outlines in Illustrator, Type (Menu) > Create Outlines. If it has been converted to paths (or outlines), you will see it with an outline around it.

#### Embedding Fonts in PDFs

Always select the option to embed all fonts and check that all fonts are embedded. Look at your file and printout carefully. If the fonts don't look crisp when enlarged they may not have been embedded properly and will not print right on the final poster. If this happens, try making the PDF again or use another font and try it again.

### Common Problems and Fixes for Files

#### Fuzzy, Low Resolution Graphics

Low resolution files are generated if you use programs like PowerPoint, Excel, Word, Flash, Fireworks or Image Ready that were not designed for high-end print production. If you must use PowerPoint, make sure images are large enough to print properly. Test them at 100% scale before you send them in. Images should be at least 150 dpi (dots per inch), and up to 300 dpi (if using the glossy paper) for photo-sharp resolution. See the next section for directions on setting up a PowerPoint file for poster output.

#### EPS Files Embedded Inside EPS Documents

EPS format does not support transparency; therefore, it is not a good choice for placing transparent artwork from other applications into Illustrator. Instead, use PDF 1.4 format for this purpose.

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You may receive an error message when printing or saving artwork that includes linked EPS files, if those files were saved in binary format (for example, in Photoshop's default EPS format). In this case, resave the EPS files in ASCII format, embed the linked files into the Illustrator artwork, print to a Binary print port instead of an ASCII print port, or save the artwork in AI or PDF format instead of EPS format.

Occasionally you may encounter a warning when opening an Illustrator document containing embedded EPS images. If the application cannot find the original EPS image, you will be prompted to extract the EPS image. Select the Extract option in the dialog box; the image will be extracted into the same directory as the current document. Although the embedded file does not preview in the document, the file will now print correctly.

### Dealing with Dot Gain and Dot Loss

Dot gain occurs when the ink hits the paper and spreads out via osmosis. All printing presses and copiers will show some dot gain (amounts vary drastically due to type and age of press or copier) as well as some loss of a very small dot on light, ghosted images. Files made of colors under about 4% - 7% opacity may drop all the way out to 0%, so proof background colors carefully. Midrange and darker tones will gain—sometimes up to 20% opacity. To avoid having your gray drop shadows look solid black make them about 35% opacity (of black). Screens above about 85% will print very close to the solid color. You will see more dot gain on the uncoated paper than on the glossy paper. Avoid using thin type on very dark areas because dot gain will cause the ink to fill in part of the letters. If you have to do that, you can add a thin outline to the type in Freehand or Illustrator or use a bolder font.

## Making PDF files

### Saving PowerPoint Posters as PDF Files

Produce your original file at 100% scale. **Do not plan to have it enlarged later by Pubs because the resolution of graphics in the file will be too low.**

To set up an oversized PowerPoint file, open a new document. Select “New Presentation.” Select “Blank” slide. Then the program opens. Go to File (Menu) > Page Set up > a dialog box appears called “Slides sized for” as a pull-down menu. Select “Custom”. In the bottom part of the dialog box, enter the height and width of your poster (20” x 30” or 30” x 40”). Select proper orientation of paper (landscape or portrait). Click OK. Do not hit the “fix” option, which would make it smaller. Check to make sure you’ve got it set up correctly by showing the rulers under View (Menu) > Rulers.

When finished with the document, go to File (Menu) > Print > Save as PDF.

### Saving Adobe Illustrator Posters as PDF Files

When saving/exporting to a PDF file, DO NOT link to any graphics or images. Instead be sure that your graphics and images are embedded.

File (Menu) > Save As > Name the file and select PDF as the file format from the pull-down menu.

### Saving Corel Draw Posters as PDF Files

File (Menu) > Save As > Select Adobe Illustrator format (.AI). Open the file in Adobe Illustrator and save out as PDF as noted above.

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### Proofing Your Document in Advance

Proofing is solely your responsibility. Proof your document carefully before you submit it. Because of the amount of resources involved in poster printing, we are only able to print your poster once. It is your responsibility to send a proofed, final, print-ready file.

Proof it first on a letter-size sheet to a desktop inkjet or laser printer in color. If printing to a non-postscript printer such as many inkjets, you may not get an accurate printout, because they do not render postscript files very well. If you are doing that, proof the file in a native format, such as Illustrator's .AI format or the .TIF or .jpg format in Photoshop. EPS files are postscript file formats and may render poorly on non-postscript printers. Most inkjet printers will print a PDF file.

When you have everything proofed and corrected, print it at 100% scale (final size) and tile it on small sheets. Print your PDF file at 100% scale (the size it will be on the final poster) on a regular printer tiled. Tape the tiled pages together to make sure everything is clear and easy to read. ***You, not OEA, will be proofing it for these things:***

1. **Colors.** Make sure that text colors are easy to read. We cannot guarantee exact color. Colors will vary from printer to printer.
2. **Spelling**
3. **Font substitution or other problems with fonts not printing properly**
4. **Line width** on embedded graphics, points on arrows, etc.
5. **Missing or poorly rendered graphic elements**
6. **Resolution** of graphics at 100% scale
7. **Borders and lines**

If you have any of these problems, correct them and check the file again. Sometimes the conversion to PDF doesn't work correctly. In that case, converting the file again may solve the problem. If it still doesn't work, simplify the file by taking out gradations or any very complex graphics. Consider converting fonts to paths/outlines and avoid using the Live Trace tool (in Illustrator). Pixel-generated images from a paint program like Photoshop are much larger files than vector images—use them sparingly.

### Program Guidance

#### Recommended Programs

Adobe PageMaker, Quark Express, Adobe InDesign and LaTeX can be used. We suggest the use of a newer version of Adobe Illustrator. Older versions of Quark require the use of Acrobat Distiller and a virtual or networked laser printer to generate the PDF file. The first three are layout programs.

For information on using LaTeX see <http://www.latex-project.org/>.

#### Programs to Avoid

Do not use Macromedia Flash, Macromedia Fireworks (web only programs), Microsoft Word, Excel or PowerPoint (unless produced as described at 100% scale) or Adobe Photoshop. Photoshop will produce files that are too large to easily print. You can use it to edit photographs, but import them into another program.

#### **Direct link to this document:**

[http://www.cs.utexas.edu/oea/services/communications/poster\\_help/pdf/makingposters.pdf](http://www.cs.utexas.edu/oea/services/communications/poster_help/pdf/makingposters.pdf)

#### **Poster Help page:**

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[http://www.cs.utexas.edu/oea/services/communications/poster\\_help/](http://www.cs.utexas.edu/oea/services/communications/poster_help/)

If you have additional questions, contact Pubs at [pubs@cs.utexas.edu](mailto:pubs@cs.utexas.edu)