Posters with PowerPoint

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What is a Scientific Poster?

- It is a visual aid that supports your oral communication of your research during a poster session
- It should be clear, concise, and accessible
- You must squeeze a lot of information into a small space in a way that doesn't appear cluttered or wordy
- Your challenge is to present as much information as possible in as few words as possible using a visual aid designed to complement you, yet that can be understood without your presence

General Design Tips - Layout

Use a grid layout. Order material top to bottom, left to right. Don't force the viewer to move their eyes back and forth over long distances. Layout the major sections in a logical order.

Leave plenty of white space. Keep it simple. Leave a good margin.

Sketch several designs on paper first or SNOP (sticky notes on paper)

Figures must be uncluttered and illustrate the important points. Use short, clear labels for all of your figures.

Use the minimum amount of text to get your points across. Most people will only spend 3 to 5 minutes reading a poster.

General Design Tips - Color

A white background is often a good choice for large format posters. If you want a background color use a light color to avoid banding, uneven color, or over-wetting the paper.

Images can make interesting backgrounds. You may want to desaturate, lighten, or blur if the content distracts from your text and graphics.

Use color to define sections or add emphasis. Use a limited number of colors and always try to use them in a way that helps to convey additional meaning. For color borders, select something that draws attention but doesn't overwhelm.

General Design Tips - Text

Text size can vary depending on the size of your poster. Keep the text elements in proportion to each other and the total size of the poster.

To be easily readable the smallest font size, in points, should be at least 4 times the viewing distance in feet.

For example for viewing at 6 feet   [4 x 6 = 24]   the smallest font size you should use is 24 point. (this formula assumes good eyesight so use larger sizes if possible)

It is often recommended to use a san-serif font; Arial, Verdana, for titles and serif fonts; Times, Palatino, for body text. But the bottom line is readbility.
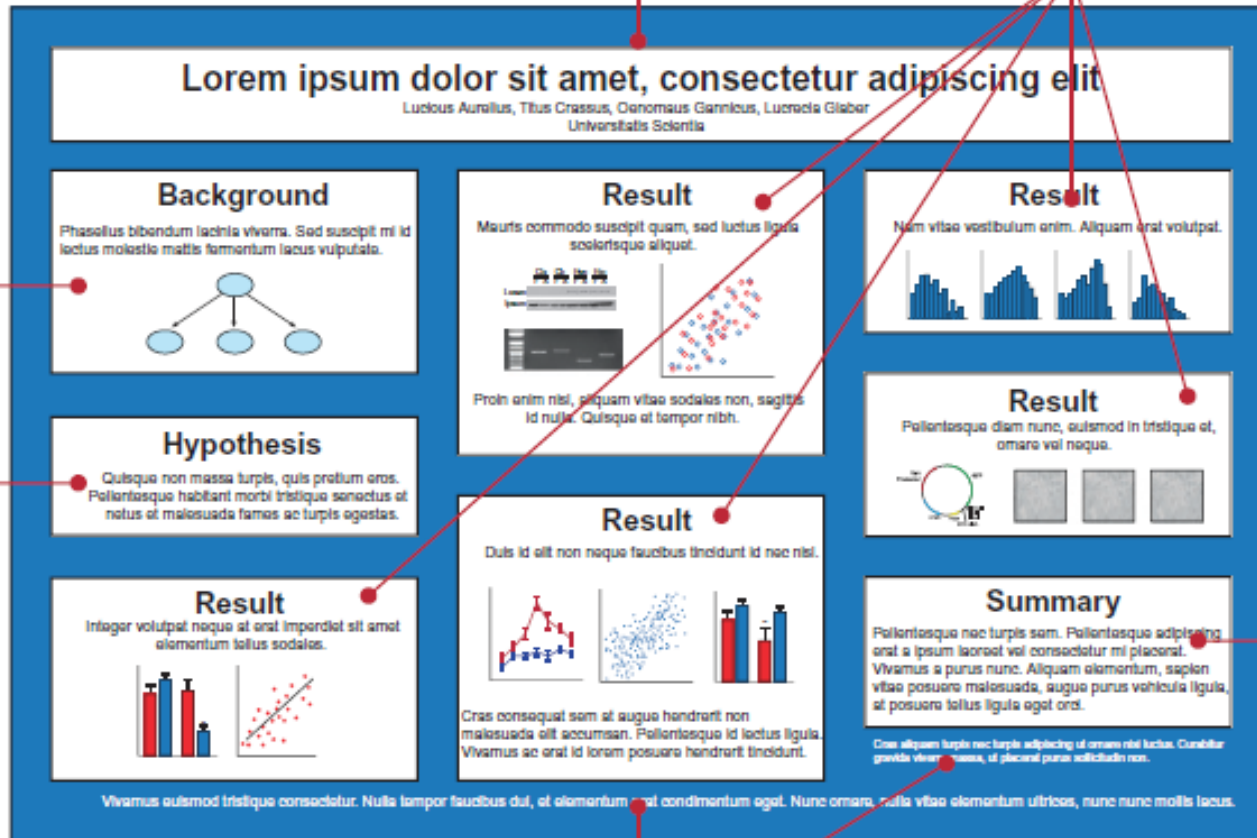
Use bold and italic for emphasis, not underlines or different typefaces.

Sections of a Poster

Title of the Research Project

Your name, advisors' name, names of any other collaborators
Name of department, Dartmouth College
source (you can either put this info here or down towards the bottom in an "acknowledgements" section)

Background/Introduction: Your background should provide just enough information for another scientist to be able to understand your poster. Four to eight sentences. Use figures instead of words to communicate ideas whenever possible.

INTRODUCTION

These boxes are about PowerPoints features and tools.

The content areas of the template are Rectangle Shapes not Text Boxes. Click in each content area to enter text.

Settings: Font; 28 point Times, Margins; 0.2, Alignment; Top left. Change as needed.

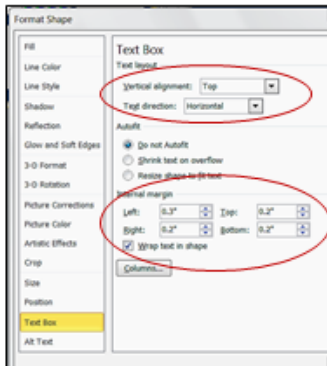Resize each box as needed. Delete boxes as needed. Duplicate a box to add more.

If you use Text Boxes you may have to set their Fill Color if you place them over a colored background, their default is No Fill.

DIAGRAM OR EXAMPLE OF STIMULI

Modify charts in Excel or within PPT to eliminate excess detail, axis lines, legend, grids, etc. Highlight the data that supports the conclusions Paste Charts as Drawing Objects, Paste text as Unformatted or Using Destination Theme.

CONCLUSIONS

Summary/Conclusion. Briefly re-state the major results of your experiments. Visitors will appreciate seeing all of your major results summarized together. At the end of your summary, you might include one or two sentences about whether your hypothesis was supported or disproved, or whether you sufficiently answered your research question.

Results. Your poster will probably contain four to eight individual results sections. Write a specific, informative title for each section, as opposed to "Result 1," "Result 2," etc. Each section may contain several figures that each lead to the same conclusion. To reduce text, write only one or two sentences that state the results of your figures, and let the figures themselves be the most prominent aspect of each results section.

PURPOSE - METHOD

Hypothesis/Question/Purpose/Goal. To highlight your scientific goal, place the question or purpose that drives your science in its own section and not just at the end of your introduction. Ideally, this section will be composed of a single sentence, perhaps accompanied by a diagram.

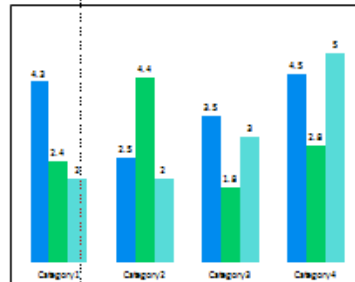**Methods** (optional). A methods section is crucial for a scientific paper, but may not be necessary for a scientific poster. Sometimes a statement on methods can be written immediately following your hypothesis/question (e.g., "To address this question, we…"). For multiple methods refer to each method in the results (e.g., "To determine result X, we used method Y").

RESULTS

figure 1
figure 2
figure 3
figure 4

Photographs should be selected or sized to be no less than 100 pixels per inch (ppi). This microphotograph of rock crystals is 1650 pixels high and sized to be 11 inches high so it is displayed at 150 ppi. Resolutions above 250 ppi don't usually add any detail but will increase file size. Zoom in to 100% to verify your images are not pixelated.

Figures should be clearly labeled and described.

FUTURE DIRECTIONS...

Powerpoint shapes can be resized and retain sharpness. Grouped objects retain their relative positions when resized or moved.
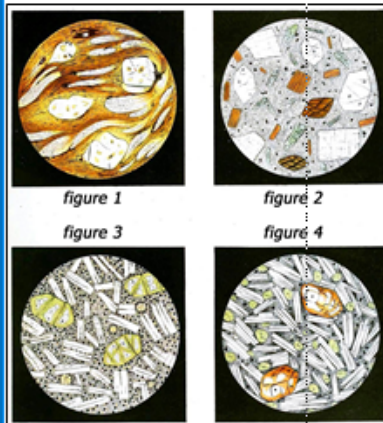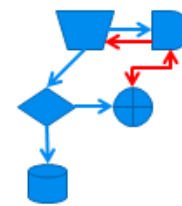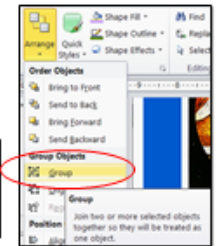
Shapes do not default to Autofit text like Text Boxes do. Their default vertical alignment is set to the Center, and paragraphs are Centered which you must change in the Text Box settings and in the Paragraph settings. For posters it is also good to adjust the margins.

Content information source - Designing Science Presentations: A Visual Guide to Figures, Papers, Slides, Posters, and More; Matt Carter

ACKNOWLEDGEMENTS

References and Acknowledgments. References, acknowledgments, and other details. Try to limit yourself to only three to five key references that are absolutely crucial to the background of your study and/or that visitors might like to consult for further information. Mention specific contributions to the poster, including funding sources, shared reagents, and insightful advice. To de-emphasize the references and acknowledgments and save room for more important items, shrink the font.

Final Thoughts

As with all communication, poster design is an art form, there is no single recipe for success.

Review, proofread, spell check, print letter size drafts on a regular printer using the "fit to paper" option.

Leave plenty of time for printing. Large formats take a long time to print, and your first print may reveal problems you did not see on screen. A one half size test print will save money and reveal any problems, before the final size print. Allow time to make a second print.

Consult with the person(s) doing the printing about paper choices, file size, printer page orientation and size, font and color issues , and getting the file to the printer (email, CD, memory stick and potential Mac/ Windows file type issues).

Ways We Use Graphs and Charts

- Recording Information
  - From an instrument or manually
- Processing Information
  - Analyze, Extrapolate or Group
- Communicating Information

Using Graphs and Charts Effectively on Posters

- Communicating Information
  - Show trends or conclusions
  - Highlight key information
  - Not necessary to show all the raw data
- Keys to creating a good graphic
  - Clearly defining what you want your audience to understand
  - Add enough information to make your graphic meaningful
  - Subtract anything that is not necessary

JOEY DONUT'S YEAR IN REVIEW

2011

ANNUAL SALES

$292,200.00

ANNUAL REVENUE BY DONUT TYPE

MAPLE BAR
$93,504

SPRINKLES
$70,128

JAM-FILLED
$58,440

BEAR CLAW
$46,752

OLD-FASHIONED
$23,376

MONTHLY DONUT SALES

30,000
22,500
15,000
0

JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

DONUT SALES BY TYPE

HIGHEST PERFORMER

MAPLE BAR — $93,504

0     $50,000 $100,000

LOWEST PERFORMER

OLD-FASHIONED — $23,376

0     $50,000 $100,000

LEGEND

🟧	32%	MAPLE BAR
🟦	24%	SPRINKLES
🟨	20%	JAM-FILLED
🟩	16%	BEAR CLAW
🟫	8%	OLD-FASHIONED

BEST DAYS FOR DONUT SALES
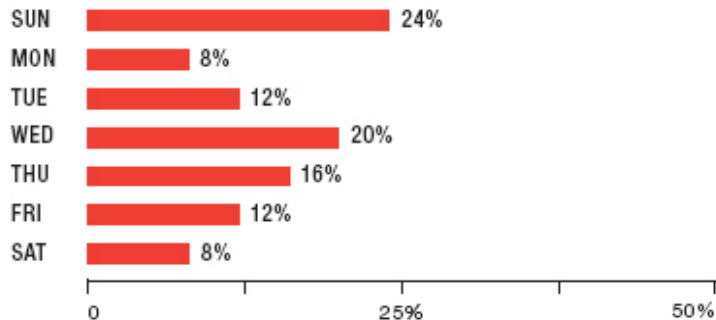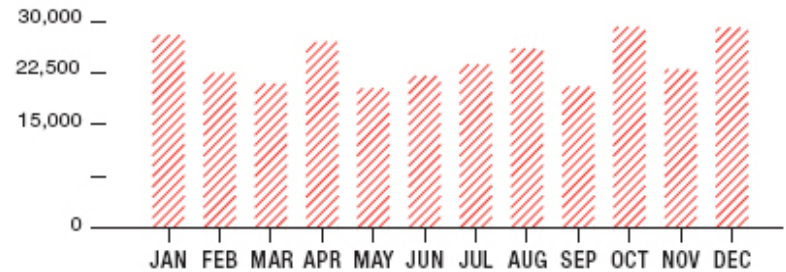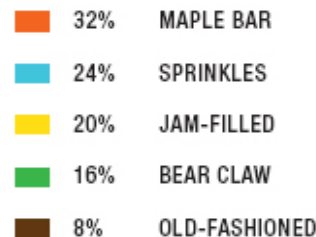
SUN	24%
MON	8%
TUE	12%
WED	20%
THU	16%
FRI	12%
SAT	8%

0   25%   50%
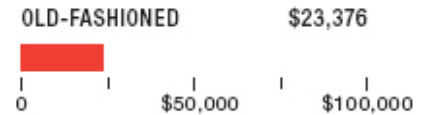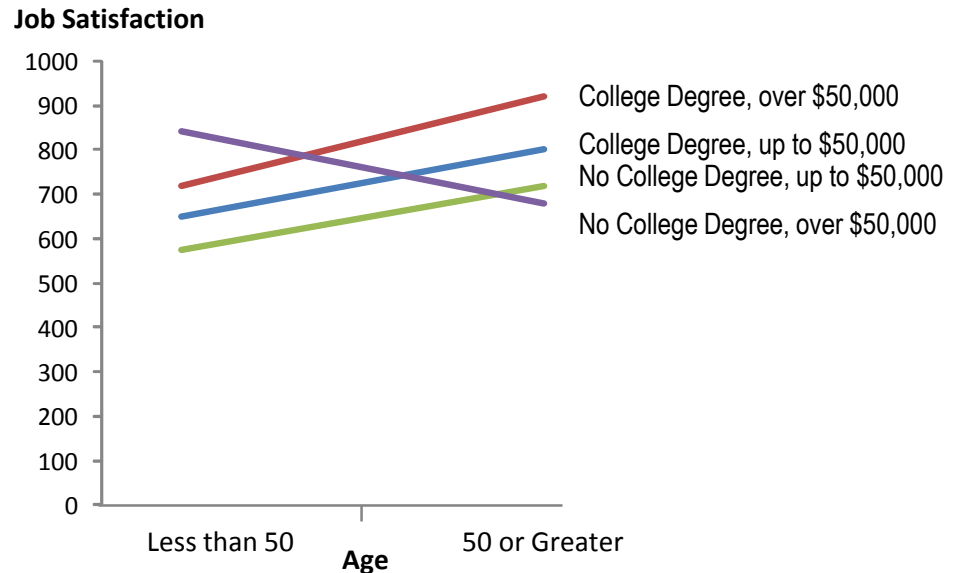
Which Chart Type to Use

The type of graph that is selected and the way it's designed also have great impact on the message that is communicated.

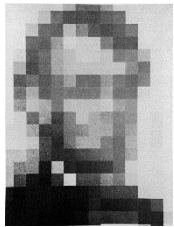## Job Satisfaction Related to Education and Salary

Job Satisfaction

- College Degree, up to $50,000
- College Degree, over $50,000
- No College, Degree up to $50,000
- No College Degree, over $50,000

Age
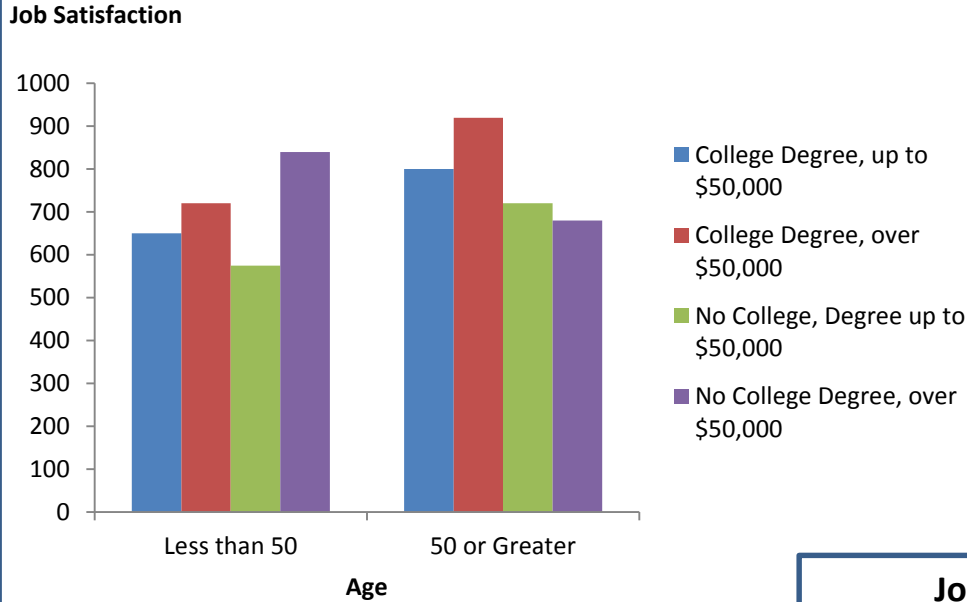
By switching from a bar graph to a line graph, the decrease in job satisfaction among those without college degrees in their later years is clearly illustrated.

Job Satisfaction Related to Education and Salary

Job Satisfaction

College Degree, over $50,000
College Degree, up to $50,000
No College Degree, up to $50,000
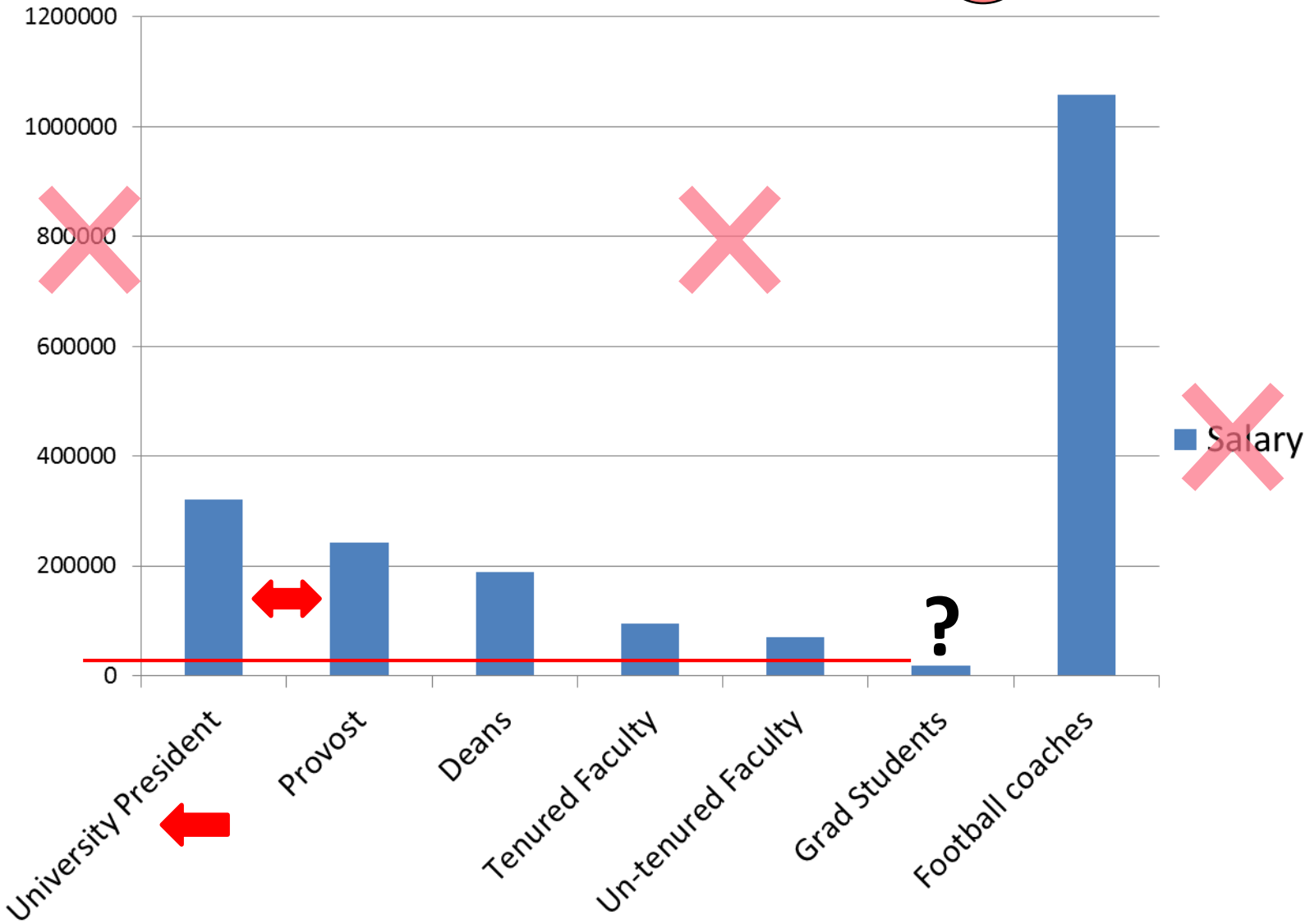No College Degree, over $50,000

Age

How much information do you need?

Pare down to the most important elements
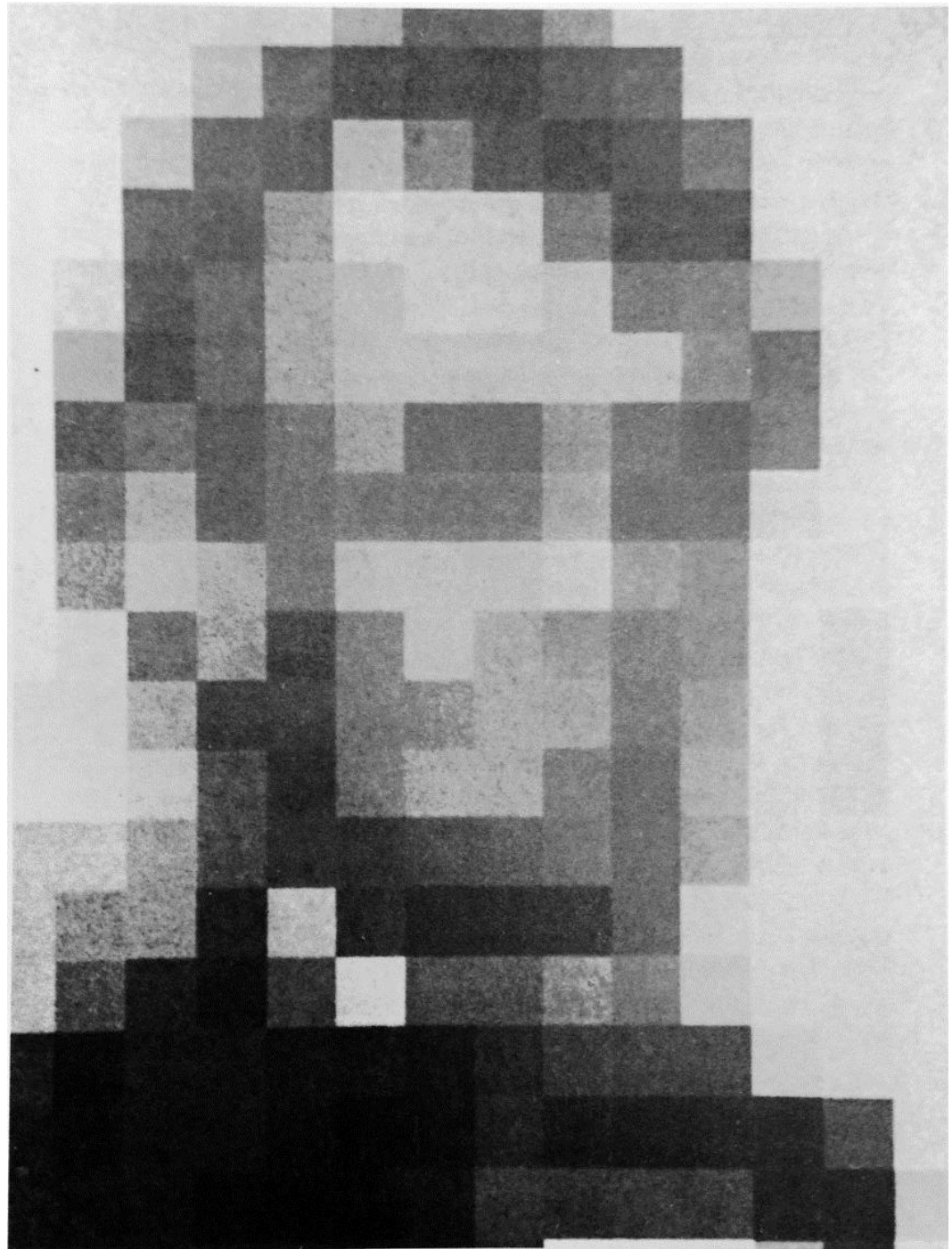
Academic Salaries

🚫 Cart Junk

Academic Salaries

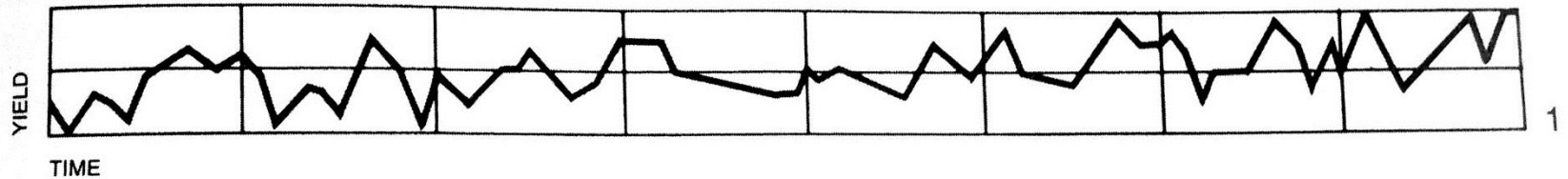| Category	Salary
University President	$321,600
Provost	$242,600
Deans	$189,200
Tenured Faculty	$95,200
Un-tenured Faculty	$70,000
Grad Students	$17,800
Football coaches	$1,057,300
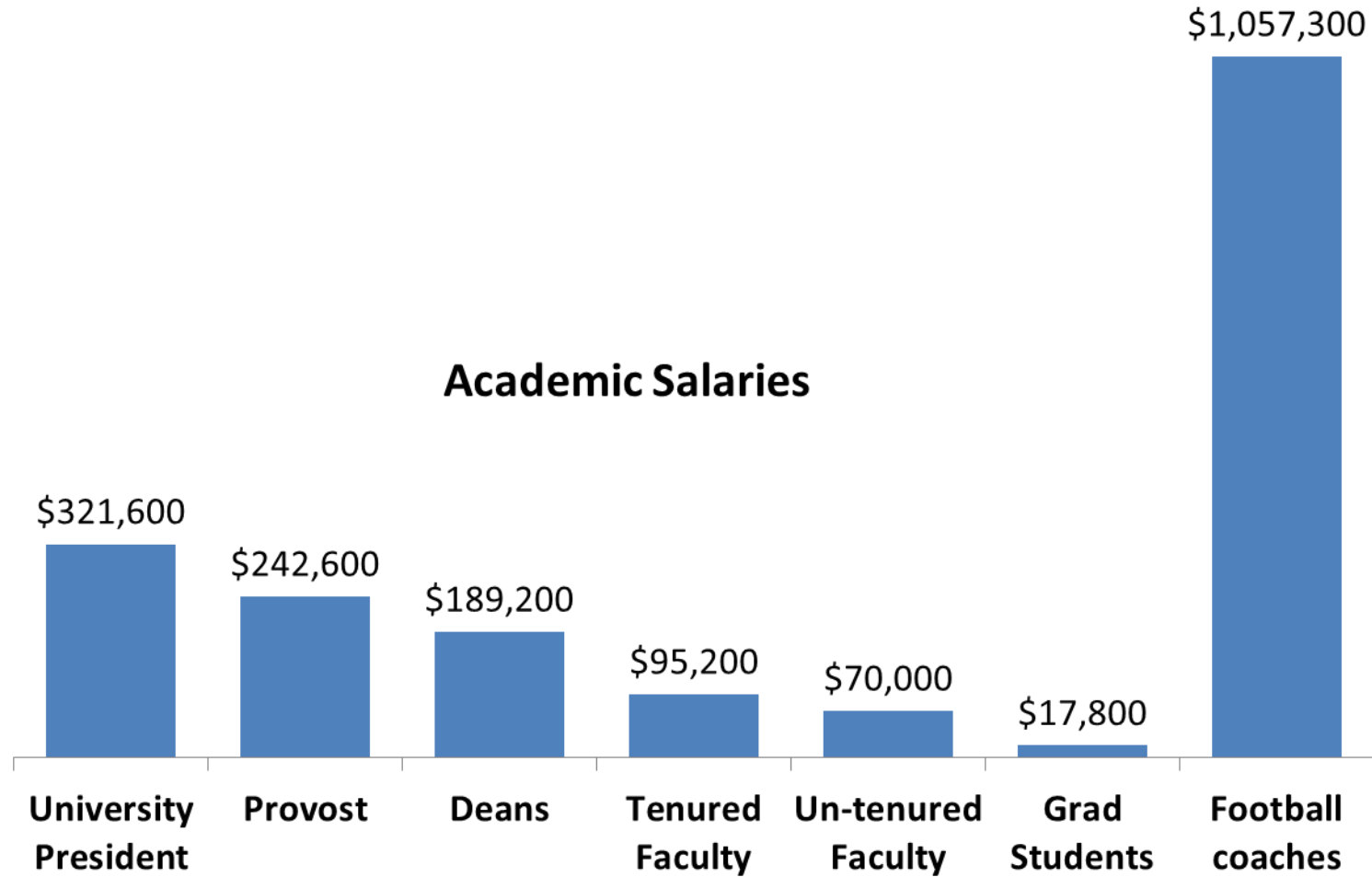
Proper Axis Scale
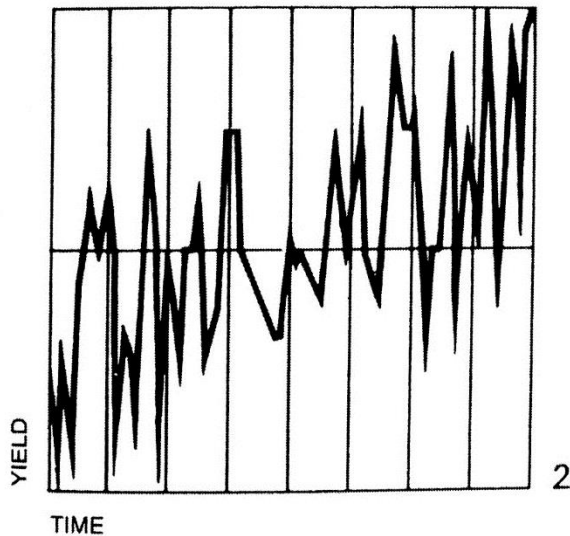
The scale used for each axis in a line graph can greatly influence the representation of the data and the ability to highlight trends or important data points.
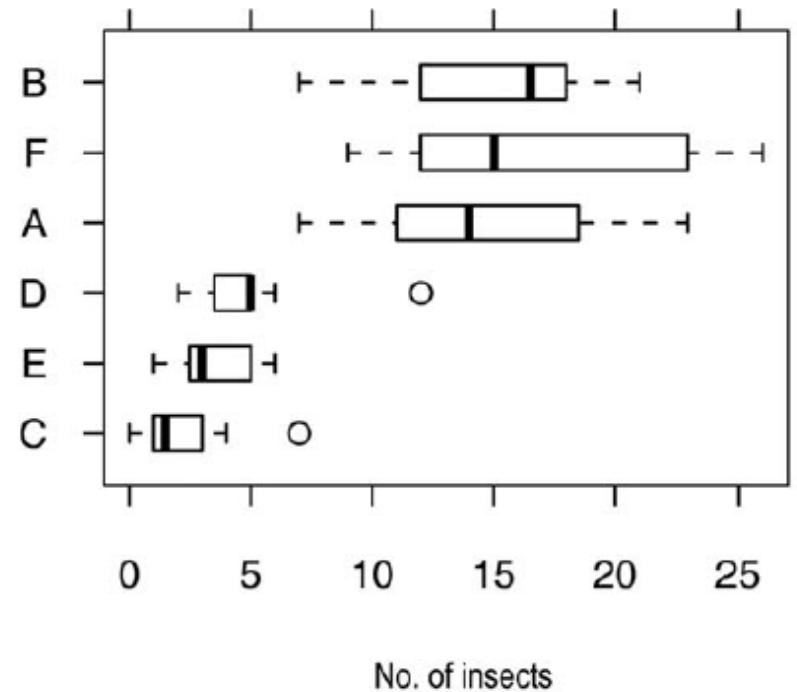
Order Data Sets

Ordering the data sets can help highlight trends, associations or groupings


(A) Alphabetical ordering
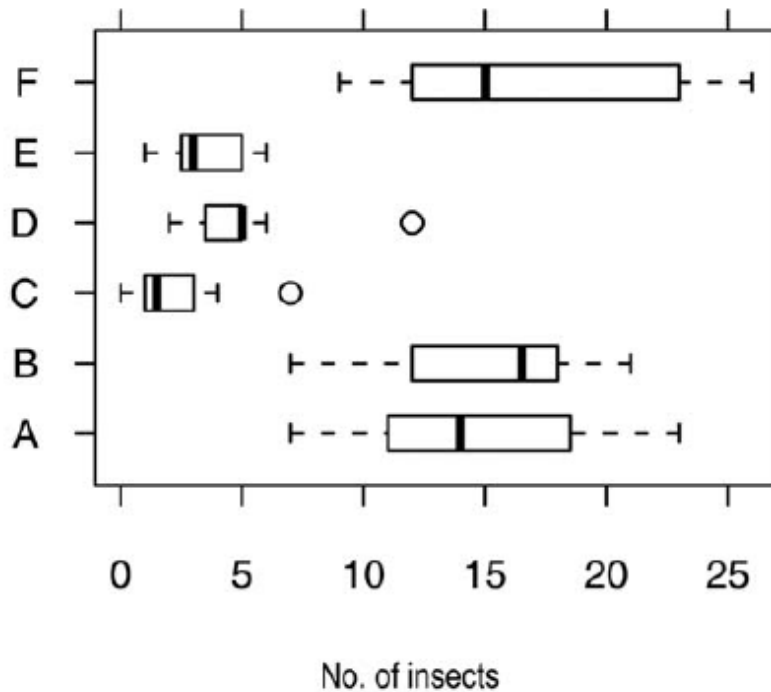
(B) Ordering by medial count

No. of insects

No. of insects

Boxplots representing number of insects caught after applications of six insecticides (data set InsectSprays). I alphabetical ordering is employed, while in right ordering by count. Observe the GOOD GRAPH IN RIGHT PAN

Paneled Charts

Sometimes it is better to split charts into multiple panels. In this case the vertical axis scale varies widely; 0 to 25 on the left and 0 to 1200 on the right. To put all of these data points on one chart would compress the first two sets almost into a straight line on the largest scale plot
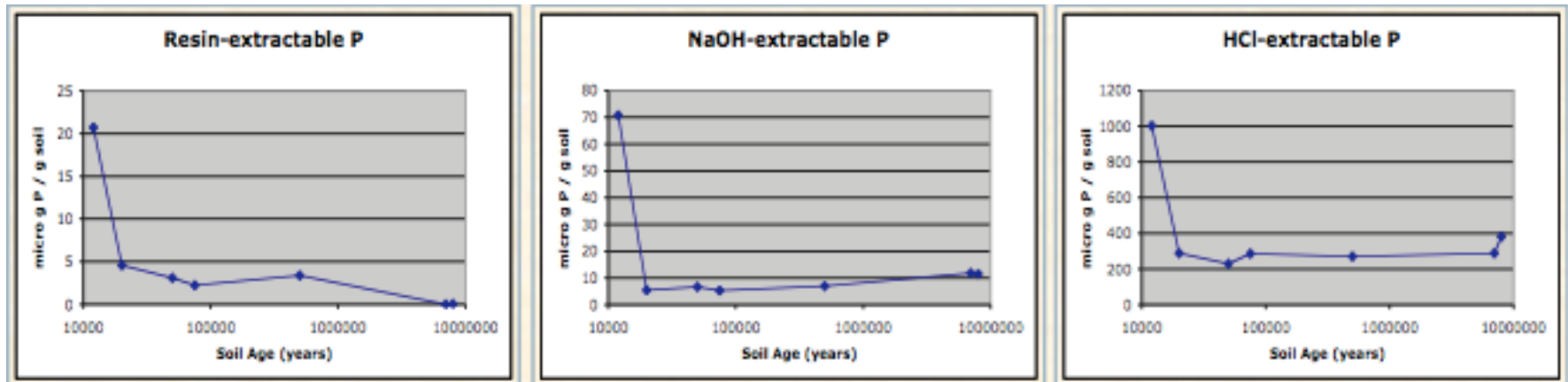
Clear Shading
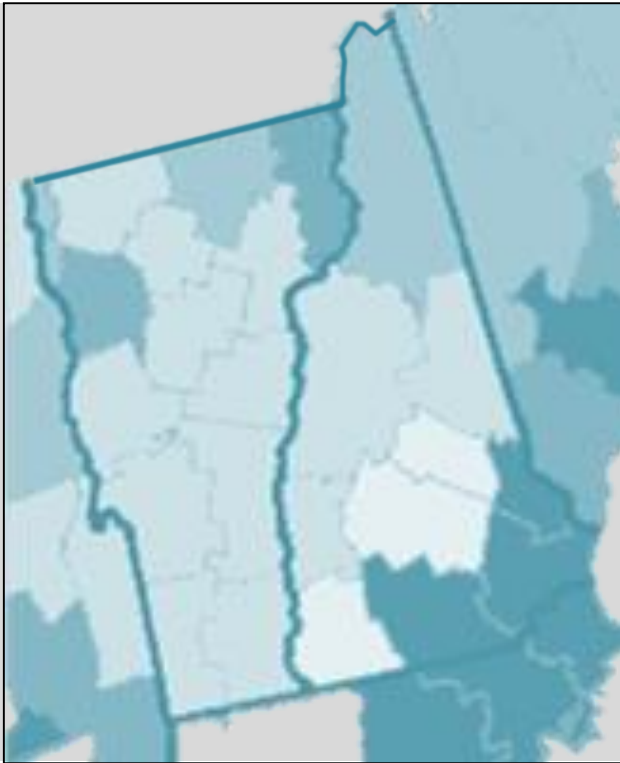
Consider tracing low quality graphics to highlight significant information.
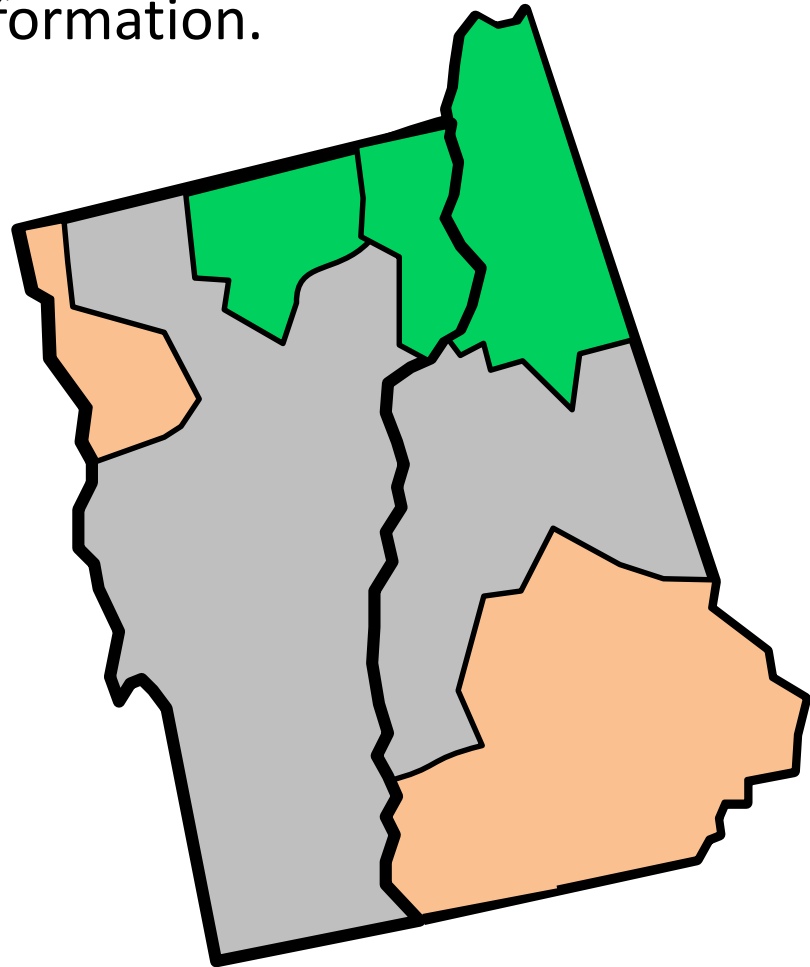
Population Density
Lowest   Highest

References

- Visualize This; Nathan Yau
- Show Me the Numbers: Designing Tables and Graphs to Enlighten; Stephen Few
- Graph Design for the Eye and Mind; Stephen M. Kosslyn
- Infographics: The Power of Visual Storytelling; Jason Lankow; Josh Ritchie; Ross Crooks
- Designing Science Presentations: A Visual Guide to Figures, Papers, Slides, Posters, and More; Matt Carter