

PSY 6930/7930 Seminar - Scientific Graphics & Writing

Wednesdays, 9-11:30, UH 5150 G

Ricky Heffner UH 5008

Office Hours Wednesdays, 8-9 & 11:30-3:30, and by appointment

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Textbooks

Kosslyn, S.M. 2006. Graph Design for the Eye and Mind. Oxford University Press.

Tufte, E.R. 2001. The Visual Display of Quantitative Information, 2nd ed. Graphics Press.

Barzun, J., 2001. Simple and Direct. 4th ed., Harper.

Olson, R., 2015. Houston, We Have a Narrative, Chicago Press

This class will focus on application of good graphics theory. As such you will not be reading a large number of journal articles—only a few. However you will be poring over journal articles both in and outside of your area looking at graphs for inspiration and entertainment.

In the first part of the course, you will search in the scientific literature for at least three graphs that illustrate good or poor design examples of the topic for each class meeting. Post these to the Discussion Board for the date as files. Annotate them with your comments as to good and poor features and we will discuss them in class.

Then we will consider features of good scientific writing and practice writing Introductions to grant proposals (the part that really determines success) and composing posters (exercises in simple and direct presentation).

In the latter part of the course you will learn to use a good graphing program and practice making professional looking graphs of your own data. We'll even design a poster and write a few abstracts. Finally, we will pull all this together and write an introduction for a grant proposal.

Grades: Based on quality of examples and critiques of graphs presented in class 50% and on the quality of the graphs, posters, and writing that you do yourself 50%.

Because of the small number of students in the class, we will rarely need the full two and one-half hours allotted.

Schedule for Spring 2016	
Jan 13	Why Graph Bring to class the analysis and graphs based on the data tables provided in Blackboard
Jan 20	Kosslyn, Ch 1 Eye and Mind Tufte, Time Series pp 28-43, Data Density pp 161-175

Schedule for Spring 2016	
Jan 27	Kosslyn, Ch 2 Choosing a Format Tuftes, Gridlines and Junk pp 112-121
Feb 3	Kosslyn, Ch. 3 Creating a Framework Tuftes, Data/Ink ratio pp 122-125, Proportion and Scale pp 184-190
Feb 10	Kosslyn, Ch 4 Pie Graphs, Divided Bars, Visual Tables Kosslyn, Ch 5 Bar Graph Variants Tuftes, Redesign of the Bar Chart pp126-129, Choice of Design pp178-183
Feb 17	Kosslyn, Ch 6 Line Graphs and Scatterplots Tuftes, Redesign of the Scatterplot pp130-137 Doherty & Anderson, 2009 (pdf in Blackboard)
Feb 24	Kosslyn, Ch 7 Color, Fill, etc Tuftes, Chartjunk pp. 107-112
Mar 2	Kosslyn, Ch 8 "Lies, Damned Lies, and Statistics" Tuftes, Graphical Integrity pp 54-77 Do the Blackboard assignment on Frog Abundance for class discussion
Mar 16	Learning a graphing program that does your bidding (Draggin Chart or Kaleidagraph); use the tutorials on your own before the class meets. In class we will practice with the program by graphing the data provided for the cost of candy bars. For future use: Bring to class three journal abstracts that you think are good abstracts and three more that you think are not good. The good and the bad abstracts should each include one abstract from your area of psychology, one from a different area of psychology, and one should be from the natural sciences. Keep these as PDF files because we will discuss them later. Browse through your own journal files and use the online journals from the library.
Mar 23	Bring to class a graph of your own data (real or imaginary) for discussion. Also bring a more complex graph of data in your field (or someone else's field) and we will discuss them in class. For future use: Bring in an abstract for a journal article or poster that you have written. Or, write an abstract for a project on which you are working making up the results and conclusions (we are not concerned with true facts, just how you might present the work).
Mar 30	Olsen, Introduction, Chapters 5, 6, 7, 8, 9, 10.
Apr 6	Olsen, Chapters 11, 12 (pp 185-195 only), 13, 14. Barzun, Chapters 1 & 2 In class discussion of abstracts turned in previously.

Schedule for Spring 2016

Apr 13	<p>Tufte, Aesthetics pp 177-190 Barzun, Chapters 3 & 4 Trends in Neuroscience article on posters</p> <p>Bring to class a design for a poster in your field, maybe even a poster you hope to present, include a compelling abstract clearly written and a couple of figures. Leave space for methods, figures (i.e., these are the results), and conclusion. There are two generic layouts for a smaller and a larger poster for you use to set a good overall size and column layout. The smaller poster is usually enough for most presentations—better too little than too much. Post your poster drafts in Blackboard and make editorial comments on each others' drafts. We will talk about these in class and you will turn in an edited and complete version on the last class meeting.</p>
Apr 20	<p>Barzun, Chapters 5 & 6.</p> <p>By April 19 post to the discussion board two introductions for grant proposals (double spaced). One should be for a three year project in your own area and the other should be for a project as far outside your area as you can manage, preferably outside psychology (this one will be easier). Include up to one page that explains why this is the most exciting and important research of the decade; as many as two additional pages should succinctly describe the nature of the studies you will undertake to answer the questions you have already demonstrated to be important. You can make these up but they should be plausible. It is the presentation that is relevant for this exercise.</p> <p>Before class, read each others proposals and be prepared to discuss them. There are some helpful writing ideas on word usage and maintaining interest posted in Blackboard. Read these because the penalty for incorrect word usage is worse than you can imagine.</p>
Apr 27	<p>Bring in your finished poster that you have revised based on comments. This one should include figures with their captions comprising the results and a succinct conclusion. You can make this up—again, it is presentation that is important here.</p> <p>Post <i>one</i> of the grant introductions (your choice) that you revised and be prepared to tell the group about your revisions.</p>