KACI 925A: Visualization for Persuasion

Spring 2017: Mar 31, April 7, 14, 21, 28.
Fridays, 1:30-4:30pm, Kellogg Global Hub L130

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Course Objective
Be persuasive in presenting your ideas. Learn to convince your clients, customers, and colleagues of the merits of your views, using the latest breakthroughs in cognitive science, computer science, and graphic design. The course covers the neuroscience behind the path from understanding to memory, the power of engaging an audience’s visual and motor systems, and the importance of leveraging existing brain networks through stories and metaphors. Through interactive exercises, the course will provide hands-on experience and tools for presenting data-based evidence with impact, across images, graphics, and visualizations of big data. Leave this course with expertise in the principles and cutting-edge methods for effective data visualization, as well as a practical toolkit for conveying your ideas in ways that are convincing, catchy, and contagious. Created for Kellogg with Professor Uzzi, the course complements his course on Leadership and Organizations.

Prerequisites: Negative prerequisite with DSGN 426, students cannot enroll in both courses.

Required knowledge: Basic data manipulation in MS Excel. You will be strongly encouraged to learn advanced visualization software (Tableau), but all assignments can be completed with a combination of Excel and PowerPoint.

Required Text
Additional readings will be posted to Canvas as web URLs or PDFs
Course Activities & Grading

Assignments (75%): Brief descriptions are provided here, but see the ‘Assignments’ section of Canvas for full descriptions and requirements. Grading will be on a 1-10 scale. A ‘9’ is already an ‘A’ grade – ‘10’ grades reflecting an A+ will be rare and require an outstanding effort. All assignments must be handed in on Canvas in the indicated format (PDF, PPTX, etc), no physical papers will be accepted. A subset of completed assignments will be shown live in class, and you may be asked to discuss yours in-class. Late assignments will be subject to grading penalties. At the end of the course, you will receive a link to a post-course survey form, and a request to confidentially rate the relative contribution of your group members for group assignments.

1. [Individual] **CARP Graphic Redesign** (10%; Due April 5, 5pm). Using the graphic design principles discussed in the first class, redesign a single page slide or poster from your professional or personal life, or redesign a provided example.

2. [With your group] **Presentation** (15%, Due April 12, 5pm) & **Presentation Revision** (15%; Due May 1, 5pm): Your group will record a 5-minute PowerPoint presentation using the “Record SlideShow” menu option. The presentation must persuade with data: it must argue for a solution to a problem or question, and it must present data to support that conclusion. You will be given a case to present along with accompanying data, but may also choose to present on another topic (see Canvas description for details). This presentation will be critiqued by your peers. Time permitting, a few presentation files will be chosen to be played live in class, followed by live critique.

2. [With your group] **Data Visualization Redesigns** (25%, Due April 26, 5pm). A set of data visualization tasks and datasets will be posted on Canvas. It is highly recommended that you use Tableau, but everything can be completed in Excel if needed.

3. [Individual] **Peer Critiques**. Each student will independently (not as a group) critique two presentations (5%; Due April 19, 5pm), and two revised presentations (5%; Due May 3, 5pm).

Quizzes (15%)
Students are expected to have read or viewed the assigned materials before the indicated class. At the start of each class (except the first) there will be a brief (5-10 minutes) quiz. There are no make-ups for quizzes. Missing a quiz for an approved absence (see below) results in that grade being omitted from your quiz average – so if you miss one or more, your total quiz grade is based on performance on the remaining quizzes. Missing a quiz without an approved absence risks a zero grade for that quiz.

Class participation (10%)
Students are expected to be on-time, and to participate in discussions. It is important that you have read or viewed the assigned material before each class. Missing class is only acceptable for religious holidays, funeral attendance, student/dependent illness, or interviews. Attendance will be taken at the beginning of each class. If you must miss class, do the readings, prepare and turn in the assignments on time, and arrange to get notes from a classmate about what you missed. Presentation slides (and anything else that handed out in class) will be posted to the Canvas website on the day of each lecture.
Other Important Issues

• **Electronics**: Laptops are encouraged only during the classes when we work on data analysis and graphing. Otherwise, they are not allowed. Tablets that are flat on your desk are permitted only for note-taking and viewing course materials. Other electronic devices, including cell phones, are prohibited. Please put all devices in “airplane” mode during class.

• **Software**: Tableau is specialized software for data visualization, and it is free for students. There are versions for both PC and Mac. Install it early, as there is an activation process that may take a few days. [http://www.tableau.com/academic/students](http://www.tableau.com/academic/students)

There are a series of excellent video tutorials on their website. This book is also helpful (though not ideal): Murray, D. *Tableau Your Data!*: Fast and Easy Visual Analysis with Tableau Software. Wiley, 2013

• **Honor code**: Students are expected to respect Kellogg’s Honor Code at all times.

• **Recordings, Postings, Social Media, etc**: No audio or visual recordings can be made of the class without written permission from the instructor. In addition, exercises and their solutions are confidential per the Kellogg Honor Code or copyrighted and cannot be circulated or posted in any form. If you are unsure as to the application of these rules, please see the instructor.

• **Showing your assignments in-class, and in future classes**: You and your peers learn from seeing and critiquing the work of others. We assume that we have your permission to show your work in this year’s class, and in other future courses as well, because your assignment or presentation may serve as an ideal example of something that others should do, or should not do. We won’t show your names in any venue beyond the present class. If there are reasons why we should not do this (e.g. your presentation contains mildly confidential material about your planned startup), please discuss it with us.

• **Further reading**: Great books and resources

  Leading change (Switch), with sticky ideas (Made to Stick) [http://heathbrothers.com/](http://heathbrothers.com/)

  Presentations that inspire, and tell emotional stories: [http://www.duarte.com/perspective/#books](http://www.duarte.com/perspective/#books)

  Presentations with clean style: [https://policyviz.com/better-presentations/](https://policyviz.com/better-presentations/)


  Blog posts and tips from Stephanie Evergreen: [http://stephanieevergreen.com/category/blog/](http://stephanieevergreen.com/category/blog/)

  Data Stories: Fivethirtyeight.com, nyt.com/upshot
**Schedule & Assignment Deadlines**

**March 31: Be understood**

**Objectives**
- Essentials of graphic design.
- The neuroscience of the path from understanding to memory; Why explanations fail.

**Assignments given at end of class**
- (Due April 2, 5pm): Group preferences survey due.
- (Due April 5, 5pm): **Individually**, redesign a slide, flyer, poster, webpage, etc, using the C.A.R.P. rules.

**April 7: Be engaging and sticky**

**Objectives**
- The power of pictures, visualizations, and concrete explanations.
- Live experiment and data analysis on your memory for arguments.

**Class will begin with a 10-minute quiz on the preparation materials.**

**Preparation**
- Nussbaumer, p1-163 (Through the end of Chapter 6)

**Assignments given at end of class**
- (Due April 12, 5pm) Post your **group’s** presentation to Canvas.

**April 14: Be repeatable and viral + Data visualization tools**

**Objectives**
- Leverage the knowledge that already exists in the heads of your audience, with metaphors and stories.
- Tutorial on Tableau; Database ('tidy') vs. Tabular data formats.

**Class will begin with a 10-minute quiz on the preparation materials.**

**Bring a laptop with MS Excel and Tableau installed.**

**Preparation**
- Nussbaumer, p163+ (Chap 7+)
- Story on Elevator pitches

**Assignments given at end of class**
- (Due April 19, 5pm): **Individual** presentation peer critiques.
- (Due April 26, 5pm): **Group** data visualization assignment (see Canvas).
April 21: Tell stories with data

Objectives
- The common DNA behind the visual variables that tie together all visualizations.
- Cutting-edge visualization techniques.
- How to tell stories with your data

Class will begin with a 10-minute quiz on the preparation materials.

Preparation
- https://hbr.org/2016/06/visualizations-that-really-work

Assignments given at end of class
- (Due May 1, 5pm) Revise your group’s presentation based on critiques from your peers, and re-post on Canvas.

April 28: Create cutting-edge data visualizations & dashboards

Objectives
- Hands-on critique of visual data stories and analytics dashboards

Class will begin with a 10-minute quiz on the preparation materials.
Bring a laptop or tablet with a browser and internet access

Preparation
- Heer Visualization Zoo Article
- https://www.ted.com/talks/hans_roslingShows_the_best_stats_you_ve_ever_seen

Assignments given at end of class
- (Due May 3, 5pm) Individually critique two revised presentations