KACI 925: Visualization for Persuasion
MBA 2019 Preterm
Monday Sept 16 – Friday Sept 20, Time TBA
Room TBA
Due to course demand, we apologize that we are unable to accept auditors

Instructor: Steven Franconeri, Professor of Psychology; Kellogg + Design, by Courtesy
franconeri@northwestern.edu [Please include ‘KACI’ in your subject line]
http://www.kellogg.northwestern.edu/faculty/directory/franconeri_steven.aspx
Office Hours: After class, and by appointment.

Teaching Assistant: TBA
(Please send all Canvas questions and attendance issues to the TA)

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. Adapted 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 prerequisite knowledge
Familiarity with Microsoft PowerPoint, as well as basic data manipulation in MS Excel. An excel tutorial
will be available on Canvas before the course. You will be exposed to – and highly encouraged to learn
– data visualization software (Tableau), but all assignments can be completed with a combination of
Excel and PowerPoint.

Required text
Any edition, digital/Kindle/etc. are all adequate.
# Course Activities + Grading

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Grade</th>
<th>Est. Time</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-work before the course</strong></td>
<td></td>
<td></td>
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<tr>
<td>Pre-reading</td>
<td></td>
<td>6 hours</td>
<td>Pre-read the Nussbaumer book, as well as the articles &amp; videos at the footer of this page (PDFs and links available on Canvas)</td>
</tr>
<tr>
<td>Presentation Deck</td>
<td>10%</td>
<td>4 hours</td>
<td>Based on a provided case and dataset, you will record narration in a 5-minute PowerPoint presentation that makes a data-based argument, with visualizations, relying on what you have learned from the Nussbaumer book. Materials will available on Canvas by August 26.</td>
</tr>
<tr>
<td>Excel pre-tutorial</td>
<td>Variable</td>
<td></td>
<td>If you are unfamiliar with basic data manipulation in Excel, please complete the self-contained tutorial on the ‘Files’ section of Canvas.</td>
</tr>
<tr>
<td>Poll Participation</td>
<td>5 min</td>
<td></td>
<td>You will receive an email link to a pre-course survey form.</td>
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<tr>
<td><strong>During the course</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class Participation</td>
<td>15%</td>
<td></td>
<td>Students are expected to have read preparation materials, be in class on-time, and to contribute to class discussions.</td>
</tr>
</tbody>
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## Pre-reads (or pre-watches/listens):

  
  [Very optional, only if you are truly excited about data formats:]
  - [http://vita.had.co.nz/papers/tidy-data.pdf](http://vita.had.co.nz/papers/tidy-data.pdf)
  - [https://vimeo.com/33727555](https://vimeo.com/33727555)

- [https://www.ted.com/talks/hans_rosling_shows_the_best_stats_you_ve_ever_seen](https://www.ted.com/talks/hans_rosling_shows_the_best_stats_you_ve_ever_seen)
- [https://hbr.org/2016/06/visualizations-that-really-work](https://hbr.org/2016/06/visualizations-that-really-work)
- [https://queue.acm.org/detail.cfm?id=1805128](https://queue.acm.org/detail.cfm?id=1805128)
<table>
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</tr>
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<tbody>
<tr>
<td>Critique two presentations (Individual)</td>
<td>15%</td>
<td>1.5 hours</td>
<td>Watch two presentation files from your peers, and offer constructive critiques on a web-based form.</td>
</tr>
<tr>
<td>Presentation revision (Group Assignment)</td>
<td>40%</td>
<td>8 hours</td>
<td>Revise a combined presentation as a group.</td>
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<tr>
<td>Critique two presentation files (Individual)</td>
<td>20%</td>
<td>2 hours</td>
<td>Watch presentation files from your peers, offering constructive critiques via a web-based form.</td>
</tr>
<tr>
<td>Poll Participation (Individual)</td>
<td>10 min</td>
<td></td>
<td>You will receive an email link to a post-course survey form, a request to confidentially rate the relative contribution of your group members, as well as to rate your most thoughtful critiquer(s). On-time submission counts toward participation grade,</td>
</tr>
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Course outline

Session 1
Course Overview, Essentials of Graphic Design, Be Understood.

Preparation: All prework and reading completed, according the schedule above

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

Sessions 2-3
Be engaging and sticky, Be repeatable and viral, Tutorial on Tableau

Preparation: Bring a laptop with MS Excel and Tableau installed, in addition to internet access and a browser (for a live experiment).

The power of pictures, visualizations, and concrete explanations.
Live experiment and data analysis on your memory for arguments.
Leverage the knowledge that already exists in the heads of your audience, with metaphors and stories.
Learn state-of-the-art visualization software

Sessions 4-5
Data visualization for analytics and storytelling

Preparation: Bring a laptop or tablet with a browser and internet access.

The common DNA behind the visual variables that tie together all visualizations.
Cutting-edge visualization techniques.
How to tell stories with your data
Hands-on critique and reconstruction of visual data stories, and a data dashboard.
Bring examples from your work life (slides, visualizations, and dashboards) that you’ve like to redesign.
Additional Information

Assignments: 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, or may not be accepted. 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, as well as the thoughtfulness of your peer critiques.

Electronics: Only ‘flat’ devices (e.g. tablets) are permitted, and must be used in 'airplane mode', strictly for course note-taking (e.g., Word, Canvas, PowerPoint, Tableau, Excel, not email, etc).

Software: Tableau is specialized software for data visualization, for both PC and Mac.
https://www.tableau.com/academic/students

There is a series of video tutorials on their website (you'll need to sign up for a free account), at https://www.tableau.com/learn/training
This book contains a more thorough tutorial:

Honor Code
The Kellogg Honor code applies to this course, including:
• You are expected to be prepared for and to be on time.
• You are expected to participate actively in class discussions.
• Class discussion stays in class.

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 from your professional life, or you simply prefer to have your assignment omitted), please just let me know – no questions asked.

Further reading: Great books and resources
Leading change (Switch), with sticky ideas (Made to Stick) http://heathbrothers.com/
Presentations that inspire, and tell emotional stories: http://www.duarte.com/perspective/#books
Detailed tutorials of Visual analytics, Communication, and Dashboards:
http://www.perceptualedge.com/library.php#Books
Data Stories: Fivethirtyeight.com; nyt.com/upshot; pudding.cool
See the ‘Optional Readings’ folder on canvas for more.
Instructor Bio

Steven Franconeri is leading scientist, teacher, and speaker on visual thinking, communication, and the psychology of data visualization. He is a Professor of Psychology in the Weinberg College of Arts & Sciences at Northwestern, Director of the Northwestern Cognitive Science Program, as well as a Kellogg Professor of Leadership, by Courtesy, and a McCormick School of Engineering and Applied Science Professor of Design, by Courtesy. He is the director of the Visual Thinking Laboratory, where a team of researchers explore how leveraging the visual system - the largest single system in your brain - can help people think, remember, and communicate more efficiently.

His undergraduate training was in computer science and cognitive science at Rutgers University, followed by a Ph.D. in Experimental Psychology from Harvard University, funded by a National Defense Science and Engineering Fellowship, followed by a Walter Isaac Killam Postdoctoral Research Fellowship at the University of British Columbia. His work on both Cognitive Science and Data Visualization has been funded by the National Science Foundation, the Department of Education, and the Department of Defense. He has received a prestigious National Science Foundation CAREER award, given to researchers who combine excellent research with outstanding teaching, and he has received a Psychonomic Society Early Career award for his research on visual thinking.

Franconeri teaches effective presentation, document design, and clear explanations, as well as data visualization both for visual analytics and visual communication of findings, for both MBA and Executive programs at Kellogg, and as training and consultation within companies and organizations.