

Communication 3267, Spring 2013: Quantitative Reasoning in Journalism and Communication

Instructor – Thomas A. Schwartz, Derby 3074, (614) 292-1006 (office), (614) 263-8838 (home), schwartz.13@osu.edu

Teaching assistant – Alyssa Morey, alymorey@gmail.com

Lecture class meetings – 9:10-10:05 a.m. Wednesdays and Fridays, Journalism 216

Lab class meetings – 2:15-4:05 p.m., Mondays, Journalism 216

Lecturer's office hours – 12:30-1:30 p.m., Tuesday-Friday, Derby 3074

Course purpose – The purpose of this class is to help students develop skills for analyzing, evaluating and reporting journalism and other public communication with quantitative content.

Reading – Required book: Charles Seife, *Proofiness: The Dark Arts of Mathematical Deception* (New York: Viking, 2010). Students will be assigned other reading on-line and in class.

Class procedure – Class meetings will consist of lecture, discussion and lab exercises in the topics on the class schedule. Lab meetings will supplement lecture meetings. Participation in all discussions is important to student understanding of the material presented. Students should be prepared for class by reading the assignments.

Policies – Work cannot be made up. This policy is modified to the extent the instructor determines that a student has a valid reason for missing a course requirement. Students must – before the date established for the requirement – request permission to adjust deadlines and administrations of requirements. Late work will be penalized. Cases of cheating, plagiarism, duplication and fabrication will be referred to the appropriate university authority.

Any student needing an accommodation based on the impact of a disability should contact the instructor privately to discuss specific needs. Please contact the Office of Disability Services at (614) 292-3307 in Pomerene Hall 150 to coordinate any accommodations needed.

Spring 2013 Communication 3267 Schedule

Date	Notes
Monday, Jan. 7	Introduction
Jan. 9-Feb. 20	Basic math in use of numbers in journalism and public communication
Monday, Jan. 21	Martin Luther King Jr. Day – no class meeting
Friday, Feb. 8, noon	Project proposals due by e-mail
Friday, Feb. 22	Data description
Wednesday, Feb. 27	Roundtable on “Proofiness”
Friday, March 1	Midterm exam
Wednesday, March 6	Data description II
Friday, March 8	Estimation; three-variable paper due
March 11-15	Spring break – no class meetings
Wednesday, March 20	Inference
March 22-April 5	Research in/as journalism and communication; JR paper due
April 10-12	Polling
April 17-19	Databases; projects due
8-9:45 a.m., Friday, April 26	Final Exam in Journalism Building 216

Grading – A student’s performance in the class will be graded on a 100-point basis, including (1) a project (15 points), (2) four short papers worth five points each (20 points), (3) class participation (10 points), (4) lab assignments (15 points), (5) a midterm exam (20 points) and (6) a final exam (20 points).

- 1. The project:** The project may be five to 20 pages in length. Text should be typed and double-spaced and printed in black ink on standard 8.5-inch-by-11-inch white paper. The pages should be stapled once in the upper left corner. Number the pages. Do not use report covers or title pages. Supporting material, e.g., tables, graphs, lists, etc., should be printed and included in the page count. Project material that is better presented on-line may be arranged to be submitted that way. The grade will be based on the quality of the thought put into the project, its content, the application of principles from the class and the presentation, including writing and organization. The project is due Friday, April 19, the last lecture class meeting of the semester. Time permitting, students may be asked orally to present their papers at one of the last class meetings. There are generally three directions that the project might take: (1) a finished journalism project ready for publication in the Lantern, (2) an elaborate proposal for a journalism project for publication in the Lantern (a paper that presents all of the information that would appear in a news story but with no expectation that the student knows about journalistic conventions of reporting, writing and editing) or (3) a sophisticated analysis of published professional journalism whose central method involves extensive use of numbers. Other ideas for project proposals will be entertained. You must obtain approval from the instructor for the project idea. Send Schwartz.13@osu.edu and alymorey@gmail.com an e-mail message proposing a project by noon Friday Feb. 8. Write or paste the proposal to the message space, not as an attachment. Sooner than Feb. 8 is better. It would probably help if students would speak with the instructor about their proposal ideas before the proposal deadline. From the time of the first class meeting, students should think about what their project should investigate. Additional information about the project will be issued as the proposal due date nears.

2. Four five-point short papers:

- A. Write a short paper (one page, single-spaced, including your name and bibliographical information) and make a brief (about five minutes) oral report on two or three recent blog entries at a blog that you choose from the attached list. Appropriate blogs are in boldface type. Provide some “about” information on the blogger and/or blog. Focus on entries that involve interpretation of numbers and/or that reference media issues. Describe each entry. Discuss the entries’ application to the class. Make mention of reader comments if they are useful. You will be called on in alphabetical order at a rate of one or two students per class meeting. The paper is due when you give your presentation. If a blog doesn’t meet the criteria above, move to another blog.
- B. Write a short paper (one page, single-spaced, including your name and bibliographical information) and participate in a class discussion of the Seife book, especially the chapter to which you’ve been assigned in the attached table. Turn in the paper on Wednesday, Feb. 27, at the time of the discussion. Your paper can be descriptive, analytical and/or critical. Most of the paper should be devoted to the chapter.
- C. Write a paper analyzing a knowledge-based issue, using the Journalist’s Resource website. This paper is due Friday, April 5. Other details for this assignment will be issued closer to the deadline.
- D. Write a paper presenting quantification of aspects of your life as an OSU student. This is due Friday, March 8. The object of this assignment is to visually communicate to the public with a systematic collection of numbers that reflects an OSU student’s life. Choose three variables that you can use to measure aspects of your personal life as an OSU student. Provide a descriptive term and conceptual and operational definition for each variable, which can be humorous or serious. You should be careful in how you observe and record your measurements; the reader of your paper must have confidence that this is an accurate representation of each of the variables, but there is no expectation that you will be as “scientific” as scientists are in their work. Consider counting the number of times a lecturer from whom you’re taking a class clears his or her voice during each one-hour lecture for one or two weeks of the semester. On your way to class each day ask a different student stranger how to find the building where the class is located. Keep track systematically of what each respondent says. Count the number of students who wear OSU paraphernalia compared with those who don’t in a class each day. How many cars parked along a campus street on which you walk daily have personalized license plates that relate to OSU? What are they? After the midterm exam, you will be asked to prepare tables, graphs or other visual representations of these variables. Be clever, but don’t commit “proofiness.” If we have time, students will share their reports with the class toward the end of the semester. For inspiration, see graphic designer Nicholas Feltron’s Feltron Annual Report at feltron.com. For what to include in the representations, see Abacus, “*Almost Everything You Wanted to Know About Making Tables and Figures.*”

3. **Class participation.** The level of your involvement in the class subject is a measure of how much you learn. Considered in grading students for class participation are attendance, quality of assigned oral presentations and the quality and quantity of unassigned participation in class discussions.
4. **Lab exercises.** You will be given lab exercises to complete during lab meetings in order to apply knowledge presented.
- 5-6. **Tests.** The exams and quizzes will consist of multiple-choice, true-false, short-answer and essay questions about assigned materials.

Seife Book Presentations

Name	Seife Chapter
Riley Allen, Hannah Chenetski, Leisa DeCarlo	1
Daniel Eddy, Brian Gibson, Samuel Harrington	2
William Hessler, Matthew Homan, Shawn Kaplan	3
Kevin Knoth, Margaret Mecklenborg	4
Jacob Niles, Trisha Patel	5
Daniel Salter, Nen Soo	6
Megan Weyrauch, Midori Ysui	7
Kayla Zmary, Andrew Zistler	8

Resources

Abascus, How to Write a Paper in Scientific Journal Style and Format, “*Almost Everything You Wanted to Know About Making Tables and Figures,*”
abacus.bates.edu/ganderso/biology/resources/writing/HTWtablefigs.html

Ian Ayres, freakonomics.com

Earl R. Babbie et al, Adventures in Social Research, 7th ed. (Pine Forge Press 2011)

Batchgeo.com, “Mapping Tools for Journalists: Map and Publish Data,”
batchgeo.com/features/mapping-tools-media

BBC, “HansRosling’s 200 Countries, 200 Years, 4 Minutes – The Joy of Statistics—BBC Four,”
Youtube.com/watch?v=jbkSRLYS.ojo

Bob Barker, Bob Barker’s Newsthinking, newsthinking.com/math-for-journalists/

Behind the Numbers, The Post’s Take on Polls and Polling, Washington Post Politics,
washingtonpost.com/blogs.behind-the-numbers

By the Numbers, Where Wall Street Adds Up, cnbc.com/id/22781974

Carl Bialik, “The Numbers Guy,” blogs.wsj.com/numbersguy

Charles Blow, “By the Numbers,” blow.blogs.nytimes.com

David Brooks, New York Times columnist, brooks.blogs.nytimes.com

Bureau of Labor Statistics, bls.gov/data/inflation_calculator.htm

Shan Carter, “Shan Carter on Data Storytelling,” Dec. 1, 2011, flowingdata.com

Chance News, causeweb.org/chance

Sarah Cohen, “Danger! Numbers in the Newsroom!,” home.earthlink.net/ncassidyny/danger

Sarah Cohen, Numbers in the Newsroom: Using Math and Statistics in the News (Investigative Reporters & Editors, 2001)

Sarah Cohen, James T. Hamilton and Fred Turner, “Computational Journalism,” Communication of the ACM 54(10) (2011), pp. 66-71

Sarah Cohen et al., “A Call to Arms to Database Researchers,” a conference paper for Accountability through Algorithm: Developing the Field of Computational Journalism, Center for the Advanced Study in the Behavioral Sciences, Stanford University, 2009

Columbus Dispatch, Data Center, dispatch.com/content/sections/databases/html

Data.gov, “Empowering people,” data.gov

DeWitt Wallace Center for Media and Democracy, Duke University, Reporters’ Lab, reporterslab.org

Steve Doig, “Newsroom Math Crib Sheet,” forjournalists.com/cookbook/index.php?title=Math_cribsheet

Dr. Math, mathforum.org/dr.math

Stephen J. Dubner, freakonomics.com

Nicholas Feltron, the Feltron annual reports, feltron.com

Flowingdata.com

Freakonomics: The Movie (2010)

Kaiser Fung, Numbers Rule Your World, junkcharts.typepad.com/numbersruleyourworld

Jack Gillum and Seth Borenstein, The Associated Press, “More U.S. Drilling Didn’t Drop Gas Prices, Data Show,” March 22, 2012

Rebecca Goldin, “How Statistics are Misunderstood in the Media and Society,” YouTube, 2008

Google.com/publicdata/home

Dwyer Gunn, freakonomics.blogs.nytimes.com

Earle Holland, OSU University Research Communications, “On Research ... Blogging About Research Issues at OSU,” researchnews.osu.blog/

Nigel Holmes, “Vampire Energy,” YouTube, 2009

Brant Houston, Computer-Assisted Reporting: A Practical Guide, 3rd ed. (Bedford/St. Martin’s, 2004)

Huffington Post, Huffpost Pollster, huffingtonpost.com/news/@pollster

Institute for Analytic Journalism, "Researching and developing non-traditional methods and communications tools for journalism," analyticjournalism.blogharbor.com

"Introduction to Academic Research and Studies: How They Work and Why Journalists Should Care," June 5, 2012, journalistsresources.org/reference/introduction-studies-academic-research-journalists/

Journalist's Resource, Joan Shorenstein Center on the Press, Politics and Public Policy, Harvard Kennedy School, journalistsresource.org

Journalist's Toolbox: Presented by the Society of Professional Journalists, spjvideo.org/jtb/archive/writing-with-numbers

Leighton W. Klein, "Math for Journalists," "Statistical Terms Used in Research Studies; a Primer for Journalists," journalistsresource.org/reference

Leighton W. Klein, "Polling Fundamentals and Concepts: An Overview for Journalists," "Statistical Terms Used in Research Studies; a Primer for Journalists," journalistsresource.org/reference

Leighton W. Klein, "Statistical Terms Used in Research Studies; a Primer for Journalists," journalistsresource.org/reference/research/statistics-for-journalists

Steven D. Levitt, freakonomics.com

Kevin Lewis, "Ideas Columnist," Boston Globe, nationalaffairs.com/authors/detail/kevin-lewis

Charles Livingston and Paul Voakes, *Working with Numbers and Statistics: A Handbook for Journalists* (Mahwah, N.J.: Lawrence Erlbaum Associates, 2005)

Scott R. Maier, "Numeracy in the Newsroom: A Case Study of Mathematical Competence and Confidence," *Journalism and Mass Communication Quarterly*, 80:4 (Winter 2003):921-936

Many-eyes.com

Geoff McGhee, "Journalism in the Age of Data," video, datajournalism.stanford.edu, 2010

James McWilliams, freakonomics.com

Phil Meyer, *Precision Journalism: A Reporter's Introduction to Social Science Methods*, 4th ed. (Landham, Md.: Rowman & Littlefield Publishers, 2002)

David W. Moore, *The Opinion Makers: An Insider Exposes the Truth Behind the Polls* (Boston: Beacon Press, 2008)

Eric A. Morris, freakonomics.com

National Numeracy Network, math.dartmouth.edu/~nnn/NNNvisionMission.html

Robert Niles, "Statistics Every Writer Should Know," "Niles Guide to Finding Data on the Internet," nilesonline.com

Brendan Nyhan, Brendan-nyhan.com

OnlineConversion.com

John Allen Paulos, *A Mathematician Reads the Newspaper* (Anchor, 1997)

John Allen Paulos, ABC.com columnist, abcnews.go.com/Technology/WhosCounting

Deborah Potter, "News with Numbers," newslab.org/2009/12/28/news-with-numbers

Deborah Potter, "Online Calculators," newslab.org/2009/06/09/online-calculators

Ned Potter, "ESP Study Gets Published in Scientific Journal," ABC World News, abcnews.go.com/Technology/extrasensory-perception-scientific-journal-esp-paper-published-Cornell/story?id=12556754

Catherine Rampell, Business Day, economic.blogs.nytimes.com/author/Catherine-rampell

Alex Remington, "Understanding Data Journalism: Overview of Resources, Tools and Topics," journalistsresource.org/reference

Chris Rousch, "Covering the Financial Markets Intelligently," journalistsresource.org/reference

Chris Rousch, "Reading Economic Data Releases from the Government," journalistsresource.org/reference

Chris Rousch, "Understanding Financial Statements," journalistsresource.org/reference

Chip Scanlon, "Why Math Matters," pointer.org/how-tos/newsgathering-storytelling/chip-on-your-shoulder/2584/why-math-matters

Chip Scanlon, "Avoiding Numeric Novocain: Writing Well with Numbers," poynter.org/how-tos/newsgathering-storytelling/chip-on-your-shoulder/7774/avoiding-numeric-novocain-writing-well-with-numbers

Science Education Resource Center, Carleton College, serc.carleton.edu/index

**Sue Shellenbarger, “The Juggle,” Wall Street Journal Blogs,
blogs.wsj.com/juggle/?author=456**

**Nate Silver, “FiveThirtyEight: Nate Silver’s Political Calculus,”
fivethirtyeight.blogs.nytimes.com**

Pew Research Center, Project for Excellence in Journalism,
journalism.org/by_the_numbers/datasets

Stats, George Mason University, “The Numbers Behind the News,” stats.org

**Stinky Journalism.org: Science Research Laboratory’s Media Ethics Project,
stinkyjournalism.org**

Texastribune.org/library/data

Cheryl W. Thompson et al., “The Hidden Life of Guns: A Washington Post Investigation,”
washingtonpost.com/wp-srv/special/nation/guns/part4.html

“Tip Sheets on Statistics for Journalists, Polling, and Key Internet Concepts,”

“Toxic Waters,” New York Times, nytimes.com/2009/09/13/4s/13water.ntml

U.S. Department of Education, Campus Safety and Security Data Analysis Cutting Tool,
ope.ed.gov/security

U.S. Department of Education, Institute of Education Sciences, ies.ed.gov

Sudhir Venkatesh, freakonomics.com

Visualjournalism.com

John Walkenbach, “Understanding Workbooks and Worksheets,” “Creating Your First Excel Worksheet,” Excel Help

John Wihby, “Database Checklist: Key Academic Research Resources – Both Free and Restricted,” journalistsresource.org/reference

John Wihby, “Guide to Academic Methods, Critical Thinking and Theory: Overview for Journalists,” journalistsresource.org/reference

John Wihby, "Research Chat: Dan Ariety and Malcolm Gladwell on Writing About Social Science," journalistsresource.org/reference

Karen Wilczek, "Scholarly Research Strategy Guide for Journalists," journalistsresource.org/reference

Kathleen Woodruff Wickham, *Math Tools for Journalists* (Marion Street Press, 2002), chapter summaries at marlenechertockreporting.wordpress.com/tag/Kathleen-woodruff-wickham/

Justin Wolfers, freakonomics.com