Social Networks (Demography 280/Sociology C273N)

(Syllabus last updated: 2025-September-03)

Class meetings: Wednesdays, 2pm-4:30pm, 310 Social Sciences Building
Office hours: see Ed post (or send me an email and we can find a time)
Email: feehan [at] berkeley.edu
Web: https://www.dennisfeehan.org/teaching/2025fa_demog280/
Ed: https://edstem.org/us/courses/81973/discussion

Overview

This course provides a broad introduction to the empirical and theoretical study of social networks. We will cover classic and contemporary studies, beginning with fundamental definitions and models, and then moving through a range of topics, including models of network formation and structure (homophily, foci, communities); dynamic processes on networks (contagion, influence, and disease models); collaborative networks; personal networks; online networks; and network sampling and data collection. The course material is intended to be of interest to students from a wide range of disciplinary backgrounds, including demography, sociology, statistics, computer science, and related fields.

This syllabus is not yet final - I'm posting it to give you a sense for what we will cover this semester. Please re-check the syllabus before you start each week's reading; it will be updated as the semester progresses

Requirements and assignments

The requirements of the class are designed to achieve two goals: the first goal is to become familiar with some classic and contemporary research about social networks through reading papers and discussing them; and the second goal is to write a research paper. You should think of the research paper as the first draft of a project that you might be able to continue working on beyond this class.

Week	Date	Topic
1	Wed, Aug 27	Fundamentals and background
2	Wed, Sep 3	Challenges in data collection and statistical models
3	Wed, Sep 10	Social Capital and SOWT: Classics
4	Wed, Sep 17	Homophily and network formation
5	Wed, Sep 24	Small worlds
6	Wed, Oct 1	Scale-free networks and other models of time
7	Wed, Oct 8	NO CLASS - Project check-in
8	Wed, Oct 15	Structure, segregation, and communities
9	Wed, Oct 22	Social Capital and SOWT: Contemporary
10	Wed, Oct 29	Simple contagion
11	Wed, Nov 5	Complex contagion and social influence I
12	Wed, Nov 12	Social influence II
13	Wed, Nov 19	Collaboration and cooperation
14	Wed, Nov 26	THANKSGIVING (no class)
15	Wed, Dec 3	Mini-conference

- Reading and class participation

  Each week, you should read the assigned materials and show up to class prepared to discuss them. **One of the weeks you will also be in charge of organizing the discussion.** (Depending on enrollment, you may be in charge of part of the readings in an additional week.) To lead the discussion, I suggest that you make a short slide deck summarizing each of the readings (similar to the papers to present, below), and you think of a few questions to prompt discussions for each reading.

- Papers to present

  Each week, there will be a list of readings that we will not have time to discuss as a group. For 4 of the class meetings, please choose one of these papers, read it, and briefly present it to the class. You should 'claim' the paper you want to present by posting to a Ed thread for the given week, to ensure that two people don't end up preparing a presentation for the same paper. (Also, if you have a paper that is on-topic, but not on the syllabus, you can ask me to present that one instead. I will typically say yes, as long as it is relevant to the discussion that week.) These presentations should be around 5-8 minutes each. Please plan to make slides or find some other way to help the class understand the paper's main findings. The goals of these presentations are (1) to give you some practice taking a deep dive into a networks research paper; (2) to give you some practice distilling technical results for a broader audience; (3) to give you and the class some exposure to cutting edge ideas in social networks; (4) to give you an opportunity to spend time on papers that are particularly useful for your research.

- Response memos

  For 5 of the class meetings, please write a short response memo (1 to 2 pages) and post it on the Ed thread for that week. (There is an Ed tag for each week of the semester). You can pick which of the weeks you write the memos, starting with week 3. These memos should not take an enormous amount of time to write. The main goal of these memos is to help you focus your thoughts about the reading prior to our group discussion; to help us get an understanding of what parts of the reading our discussion should focus on; and to serve as a reference for you in the future. The format of the memos is open, but at a minimum I would like you to be sure to (1) quickly summarize how the readings relate to one another (if you think they do); and (2) briefly describe at least one research idea that the readings generated for you (this could be a single sentence, or the entire memo; it's up to you). ***The response memos are due by noon on the day before each class.***

- Final paper

  You will write a short (10-20 pages) research paper or proposal for a research project to conclude the class. Leading up to the end of the class, you will submit a

brief proposal (1 paragraph to 1 page) that describes the paper you plan to work on. I will also ask you to briefly pitch your idea to get some fast feedback early on. The purpose of the proposal is to give you some feedback on the initial idea / data source / etc before you invest a lot of time writing an actual paper. Your final paper should identify an important problem to be studied, briefly review the related literature, describe your proposed research design, and present some (possibly preliminary) empirical findings.

The purpose of this paper is to connect the topics of this class to your actual research, so my hope is that this will be an opportunity to get some feedback on an idea you care about, and that you might continue to pursue beyond class. We will have a mini-conference with short presentations for each project at the end of the semester.

NB: Please read each week's articles in the order they are listed on the syllabus

Detailed schedule

Wed, Aug 27 - Fundamentals and background

This is an unusual week, since it's our first class meeting. The first three readings are overviews of social networks from different perspectives; then, there are three studies that exemplify the diversity of social networks research.

Background readings:

- Stephen P. Borgatti et al., "Network Analysis in the Social Sciences," *Science* 323, no. 5916 (2009): 892–895, http://science.sciencemag.org/content/323/5916/892.short.
- C. T Butts, "Revisiting the Foundations of Network Analysis," *Science* 325, no. 5939 (2009): 414—416, http://www.sciencemag.org/content/325/5939/414.short.
- David Lazer, "Networks in Political Science: Back to the Future," *PS: Political Science and Politics* 44, no. 1 (2011): 61–68, https://www.jstor.org/stable/40984485.

Readings to discuss:

- Scott L. Feld, "Why Your Friends Have More Friends Than You Do," *American Journal of Sociology* 96, no. 6 (May 1991): 1464–1477, http://www.jstor.org/stable/2781907.
- Miller McPherson, Lynn Smith-Lovin, and Matthew E. Brashears, "Social Isolation in America: Changes in Core Discussion Networks over Two Decades," *American Sociological Review* 71, no. 3 (2006): 353–375, http://asr.sagepub.com/content/71/3/353.short.
- Coren L. Apicella et al., "Social Networks and Cooperation in Hunter-Gatherers," *Nature* 481, no. 7382 (2012): 497–501, https://www.nature.com/articles/nature10736.

More background to read at some point in the first couple of weeks:

- Mark Newman, *Networks: An Introduction*, 2nd ed. (Oxford university press, 2018), ch. 6 and 7. - some mathematical background

We won't explicitly discuss the Newman book chapters in class, but they also worth reading at some point; they describe several different network measures that are often mentioned in the literature.

For an overview of networks topics that is focused on Sociology, the Rawlings et al book is also a good reference:

- Craig M. Rawlings et al., *Network Analysis: Integrating Social Network Theory, Method, and Application with R*, Structural Analysis in the Social Sciences (Cambridge: Cambridge University Press, 2023), https://www.cambridge.org/core/books/network-analysis/C9202FD5420BE99225FEED4B6214DBB7.

OPTIONAL: The wrap-up papers at the end of the syllabus give a good overview of the study of social networks. We won't explicitly discuss them in class, but they would be helpful to read at some point during the semester.

Related (we won't discuss)

- Christine A. Bachrach, "Culture and Demography: From Reluctant Bedfellows to Committed Partners," *Demography* 51, no. 1 (2014): 3–25, http://link.springer.com/article/10.1007/s13524-013-0257-6.
- Hans-Peter Kohler et al., "The Social and the Sexual: Networks in Contemporary Demographic Research" (2013), http://repository.upenn.edu/psc_working_papers/41/.
- Mustafa Emirbayer, "Manifesto for a Relational Sociology," *American Journal of Sociology* 103, no. 2 (1997): 281–317, http://www.jstor.org/stable/10.1086/231209.
- David Lazer et al., "Computational Social Science," *Science* 323, no. 5915 (February 2009): 721–723, http://science.sciencemag.org/content/323/5915/721.
- Robin IM Dunbar and Susanne Shultz, "Evolution in the Social Brain," *Science* 317, no. 5843 (2007): 1344–1347, http://www.sciencemag.org/content/317/5843/1344.short.
- Alistair Sutcliffe et al., "Relationships and the Social Brain: Integrating Psychological and Evolutionary Perspectives," *British Journal of Psychology* 103, no. 2 (2012): 149–168, http://onlinelibrary.wiley.com/doi/10.1111/j.2044-8295.2011.02061.x/full.
- Nathan Eagle and Alex Sandy Pentland, "Eigenbehaviors: Identifying Structure in Routine," *Behavioral Ecology and Sociobiology* 63, no. 7 (2009): 1057–1066, http://link.springer.com/article/10.1007/s00265-009-0739-0.

- Matthew O. Jackson, "The Friendship Paradox and Systematic Biases in Perceptions and Social Norms," *Journal of Political Economy* 127, no. 2 (October 2018): 777–818, https://www.journals.uchicago.edu/doi/full/10.1086/701031.

Wed, Sep 3 - Sampling, data collection, statistics

Readings to discuss:

- Related to McPherson et al (2006) [from last week]
  - Claude S. Fischer, "The 2004 GSS Finding of Shrunken Social Networks: An Artifact?" *American Sociological Review* 74, no. 4 (August 2009): 657–669, http://asr.sagepub.com/content/74/4/657.
  - [SKIM] M. McPherson, L. Smith-Lovin, and M. E Brashears, "Models and Marginals: Using Survey Evidence to Study Social Networks," *American Sociological Review* 74, no. 4 (2009): 670—681, http://asr.sagepub.com/content/74/4/670.short.
  - [READ ABSTRACT] Anthony Paik and Kenneth Sanchagrin, "Social Isolation in America An Artifact," *American Sociological Review* (2013): 0003122413482919, http://asr.sagepub.com/content/early/2013/04/05/0003122413482919.abstract.
- N. Eagle, A. S. Pentland, and D. Lazer, "Inferring Friendship Network Structure by Using Mobile Phone Data," *Proceedings of the National Academy of Sciences* 106, no. 36 (2009): 15274—15278, http://www.pnas.org/content/106/36/15274.short.
- Sharad Goel and Matthew J. Salganik, "Assessing Respondent-Driven Sampling," *Proceedings of the National Academy of Sciences* 107, no. 15 (2010): 6743–6747, http://www.pnas.org/content/107/15/6743.short.
- Tian Zheng, Matthew J. Salganik, and Andrew Gelman, "How Many People Do You Know in Prison?: Using Overdispersion in Count Data to Estimate Social Structure in Networks," *Journal of the American Statistical Association* 101, no. 474 (June 2006): 409–423, http://www.jstor.org/stable/27590705.
- [READ ABSTRACT] Cathleen McGrath, Jim Blythe, and David Krackhardt, "The Effect of Spatial Arrangement on Judgments and Errors in Interpreting Graphs," *Social Networks* 19, no. 3 (1997): 223–242, http://www.sciencedirect.com/science/article/pii/S0378873396002997.
- check out hive plots

I'll share a video that derives some properties of random graph models; if you want extra background, the Newman chapter (which the video is based on) is a good reference:

- Mark Newman, *Networks: An Introduction*, 2nd ed. (Oxford university press, 2018), ch. 11. - Poisson random graph models (NB: this is ch. 12 in the first edition)

Related (we won't discuss):

Overviews:

- P. V. Marsden, "Network Data and Measurement," *Annual Review of Sociology* (1990): 435—463, http://www.jstor.org/stable/10.2307/2083277.
- Peter V. Marsden, "Recent Developments in Network Measurement," in *Models and Methods in Social Network Analysis*, ed. Peter J. Carrington, John Scott, and Stanley Wasserman (Cambridge University Press, 2005), 8–30.
- Peter J. Carrington, John Scott, and Stanley Wasserman, *Models and Methods in Social Network Analysis* (Cambridge University Press, 2005).

Name generators and personal networks:

- Mario L. Small et al., *Personal Networks: Classic Readings and New Directions in Egocentric Analysis* (Cambridge University Press, 2021).
- Mario Luis Small, *Someone To Talk To* (Oxford University Press, 2017).
- Matthew E. Brashears, "'Trivial' Topics and Rich Ties: The Relationship Between Discussion Topic, Alter Role, and Resource Availability Using the 'Important Matters' Name Generator," *Sociological Science* 1 (November 2014): 493–511, https://www.sociologicalscience.com/articles-vol1-27-493/.
- Peter Bearman and Paolo Parigi, "Cloning Headless Frogs and Other Important Matters: Conversation Topics and Network Structure," *Social Forces* 83, no. 2 (December 2004): 535–557, https://academic.oup.com/sf/article/83/2/535/2234689.
- Byungkyu Lee and Peter Bearman, "Important Matters in Political Context," *Sociological Science* 4 (2017): 1–30, https://www.sociologicalscience.com/articles-v4-1-1/.

Measurement error and awareness:

- S. Goel, W. Mason, and D. J Watts, "Real and Perceived Attitude Agreement in Social Networks." *Journal of Personality and Social Psychology* 99, no. 4 (2010): 611, http://psycnet.apa.org/journals/psp/99/4/611/.
- Matthew E. Brashears, "Small Networks and High Isolation? A Reexamination of American Discussion Networks," *Social Networks* 33, no. 4 (October 2011): 331–341, https://www.sciencedirect.com/science/article/pii/S0378873311000566.
- Dennis M. Feehan and Matthew J. Salganik, "Generalizing the Network Scale-Up Method: A New Estimator for the Size of Hidden Populations," *Sociological Methodology* 46, no. 1 (2016): 153–186, http://128.84.21.199/pdf/1404.4009.pdf.
- Sarah K. Cowan and Delia Baldassarri, "'It Could Turn Ugly': Selective Disclosure of Attitudes in Political Discussion Networks," *Social Networks* (2017), https://www.sciencedirect.com/science/article/pii/S037887331630404X.

Aggregate relational data and latent space models:

- Hoff et al paper, which we will read in a coming week
- Tyler H. McCormick, Matthew J. Salganik, and Tian Zheng, "How Many People Do You Know?: Efficiently Estimating Personal Network Size," *Journal of the American Statistical Association* 105, no. 489 (2010): 59–70, http://www.tandfonline.com/doi/abs/10.1198/jasa.2009.ap08518.
- Tyler H. McCormick and Tian Zheng, "Latent Demographic Profile Estimation in Hard-to-Reach Groups," *The Annals of Applied Statistics* 6, no. 4 (December 2012): 1795–1813, http://projecteuclid.org/euclid.aoas/1356629060.
- M. S. Handcock and K. J. Gile, "Modeling Social Networks from Sampled Data," *The Annals of Applied Statistics* 4, no. 1 (2010): 5—25, http://projecteuclid.org/euclid.aoas/1273584445.
- P. D. Hoff, "Bilinear Mixed-Effects Models for Dyadic Data," *Journal of the American Statistical Association* 100, no. 469 (2005): 286–295, https://amstat.tandfonline.com/doi/abs/10.1198/016214504000001015?casa_token=yF8gde6XoN8AAAAA:4NWB0pHcy38dGbVogF2SakdNr1VesDTEqpFVBMxHg2mRwQwnXhmidEnhR4tjn9UTCbzoU_tbIKyhvQ.
- **baum_covariate_2025?**

Hidden populations:

- (Scale-up) Dennis M. Feehan, Mary Mahy, and Matthew J. Salganik, "The Network Survival Method for Estimating Adult Mortality: Evidence from a Survey Experiment in Rwanda," *Demography* 54, no. 4 (2017): 1503–1528, https://link.springer.com/article/10.1007/s13524-017-0594-y.
- (Scale-up) **laga_correlated_2021?**
- (Scale-up) Ian Laga et al., "Estimating and Correcting Degree Ratio Bias in the Network Scale-up Method," *Sociological Methods & Research* (August 2025): 00491241251364233, https://doi.org/10.1177/00491241251364233.
- (RDS) Forrest W. Crawford, Jiacheng Wu, and Robert Heimer, "Hidden Population Size Estimation from Respondent-Driven Sampling: A Network Approach," *Journal of the American Statistical Association* (2018): 1–12, https://www.tandfonline.com/doi/full/10.1080/01621459.2017.1285775?casa_token=j3VcQGcoB-sAAAAA%3A431uDwCZPR_ZqK7nlEhPpu53_MxHL0tdkSWbv_omMC_-VDiya6N9OakKCfJrZYTHVmYN2o70WgDTmg.
- (RDS) Sebastien Roch and Karl Rohe, "Generalized Least Squares Can Overcome the Critical Threshold in Respondent-Driven Sampling," *Proceedings of the National Academy of Sciences* 115, no. 41 (2018): 10299–10304.
- (RDS) Aaron J. Baraff, Tyler H. McCormick, and Adrian E. Raftery, "Estimating Uncertainty in Respondent-Driven Sampling Using a Tree Bootstrap Method," *Proceedings of the National Academy of Sciences* 113, no. 51 (2016): 14668–14673.

Wed, Sep 10 - Social capital and SOWT: Classics

Readings we will discuss:

- Mark S. Granovetter, "The Strength of Weak Ties," *American Journal of Sociology* (1973): 1360–1380, http://www.jstor.org/stable/10.2307/2776392.
- S. L. Feld, "The Focused Organization of Social Ties," *American Journal of Sociology* (1981): 1015—1035, http://www.jstor.org/stable/10.2307/2778746.
- J. S. Coleman, "Social Capital in the Creation of Human Capital," *American Journal of Sociology* (1988): 95—120, http://www.jstor.org/stable/10.2307/2780243.

Related (we won't discuss):

Related classics:

- Good excerpts/comments on several classics can be found here: Mario L. Small et al., *Personal Networks: Classic Readings and New Directions in Egocentric Analysis* (Cambridge University Press, 2021).
- H. C. White, S. A. Boorman, and R. L. Breiger, "Social Structure from Multiple Networks. I. Blockmodels of Roles and Positions," *American Journal of Sociology* (1976): 730—780, http://www.jstor.org/stable/10.2307/2777596.
- A. Portes, "Social Capital: Its Origins and Applications in Modern Sociology," in *Knowledge and Social Capital: Foundations and Applications*, 2000, 43—67, http://books.google.com/books?hl=en&lr=&id=kQdKAf8-_yUC&oi=fnd&pg=PA43&dq=portes+social+capital&ots=3h5utaVXw-&sig=naj2k4VjFgFOtJSw9PT2kI739as.
- Mark Granovetter, *The Strength of Weak Ties: A Network Theory Revisited* (JSTOR, 1981), http://www.jstor.org/stable/pdf/202051.pdf.
- A. Portes and J. Sensenbrenner, "Embeddedness and Immigration: Notes on the Social Determinants of Economic Action," *American Journal of Sociology* (1993): 1320—1350, http://www.jstor.org/stable/10.2307/2781823.
- R. S. Burt, "Structural Holes and Good Ideas," *American Journal of Sociology* 110, no. 2 (2004): 349—399, http://www.jstor.org/stable/10.1086/421787?journalCode=ajs.

Digital:

- Nathan Eagle, Michael Macy, and Rob Claxton, "Network Diversity and Economic Development," *Science* 328, no. 5981 (2010): 1029–1031, http://science.sciencemag.org/content/328/5981/1029.short.

Health-related:

- Lisa F. Berkman and S. Leonard Syme, "Social Networks, Host Resistance, and Mortality: A Nine-Year Follow-up Study of Alameda County Residents," *American*

Journal of Epidemiology 109, no. 2 (February 1979): 186–204, https://academic.oup.com/aje/article/109/2/186/74197.

- Teresa E. Seeman et al., "Social Network Ties and Mortality Among Tile Elderly in the Alameda County Study," *American Journal of Epidemiology* 126, no. 4 (October 1987): 714–723, https://doi.org/10.1093/oxfordjournals.aje.a114711.
- Maarit Kauppi et al., "Characteristics of Social Networks and Mortality Risk: Evidence From 2 Prospective Cohort Studies," *American Journal of Epidemiology* 187, no. 4 (April 2018): 746–753, https://academic.oup.com/aje/article/187/4/746/4093016.
- Patricia M. Eng et al., "Social Ties and Change in Social Ties in Relation to Subsequent Total and Cause-specific Mortality and Coronary Heart Disease Incidence in Men," *American Journal of Epidemiology* 155, no. 8 (April 2002): 700–709, https://academic.oup.com/aje/article/155/8/700/65625.

Demography-specific:

- Douglas S. Massey, "Social Structure, Household Strategies, and the Cumulative Causation of Migration," *Population Index* (1990): 3–26, http://www.jstor.org/stable/3644186.

Wed, Sep 17 - Homophily - network formation based on similarity

- Gueorgi Kossinets and Duncan J. Watts, "Empirical Analysis of an Evolving Social Network," *Science* 311, no. 5757 (January 2006): 88–90, http://www.sciencemag.org/content/311/5757/88.
- G. Kossinets and D. J. Watts, "Origins of Homophily in an Evolving Social Network," *American Journal of Sociology* 115, no. 2 (2009): 405—450, http://www.jstor.org/stable/10.1086/599247?ai=s6&af=R.
- Sergio Currarini, Matthew O. Jackson, and Paolo Pin, "Identifying the Roles of Race-Based Choice and Chance in High School Friendship Network Formation," *Proceedings of the National Academy of Sciences* 107, no. 11 (2010): 4857–4861, http://www.pnas.org/content/107/11/4857.short.
- Peter D. Hoff, Adrian E. Raftery, and Mark S. Handcock, "Latent Space Approaches to Social Network Analysis," *Journal of the American Statistical Association* 97, no. 460 (2002): 1090–1098, http://www.tandfonline.com/doi/abs/10.1198/016214502388618906.

Related (we won't discuss)

- the theory/background section of this paper is an excellent review of homophily: A. Wimmer and K. Lewis, "Beyond and Below Racial Homophily: ERG Models of a Friendship Network Documented on Facebook1," *American Journal of Sociology*

116, no. 2 (2010): 583–642, http://www.jstor.org/stable/10.1086/653658.

- Elizabeth E. Bruch and M. E. J. Newman, "Aspirational Pursuit of Mates in Online Dating Markets," *Science Advances* 4, no. 8 (August 2018): eaap9815, https://advances.sciencemag.org/content/4/8/eaap9815.
- Matthew O. Jackson and Brian W. Rogers, "Meeting Strangers and Friends of Friends: How Random Are Social Networks?" *The American Economic Review* 97, no. 3 (2007): 890–915, http://www.ingentaconnect.com/content/aea/aer/2007/00000097/00000003/art00015.
- Jukka-Pekka Onnela et al., "Geographic Constraints on Social Network Groups," *PLoS One* 6, no. 4 (2011): e16939, http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0016939.
- Yosh Halberstam and Brian Knight, "Homophily, Group Size, and the Diffusion of Political Information in Social Networks: Evidence from Twitter," *Journal of Public Economics* 143 (November 2016): 73–88, http://www.sciencedirect.com/science/article/pii/S0047272716301001.

Wed, Sep 24 - Network models, connectivity, and small worlds

Readings to discuss:

- Stanley Milgram, "The Small World Problem," *Psychology Today* 1 (1967): 62–67, https://courses.cit.cornell.edu/info2950_2012sp/milgram.pdf.
- J. Travers and S. Milgram, "An Experimental Study of the Small World Problem," *Sociometry* (1969): 425–443, http://www.jstor.org/stable/10.2307/2786545.
- D. J. Watts and S. H. Strogatz, "Collective Dynamics of 'Small-World'networks," *Nature* 393, no. 6684 (1998): 440–442, http://www.nature.com/nature/journal/v393/n6684/abs/393440a0.html.
- Jon M. Kleinberg, "Navigation in a Small World," *Nature* 406, no. 6798 (2000): 845–845, http://www.nature.com/nature/journal/v406/n6798/abs/406845a0.html.
- Duncan J. Watts, Peter Sheridan Dodds, and Mark EJ Newman, "Identity and Search in Social Networks," *Science* 296, no. 5571 (2002): 1302–1305, http://science.sciencemag.org/content/296/5571/1302.short.
- P. S. Dodds, R. Muhamad, and D. J. Watts, "An Experimental Study of Search in Global Social Networks," *Science* 301, no. 5634 (2003): 827Äì–829, http://www.sciencemag.org/content/301/5634/827.short.

Some fairly recent online discussion of the small world hypothesis:

- a relevant Facebook research note
- and a relevant comment by Duncan Watts

Related (we won't discuss)

- D. J. Watts, *Six Degrees: The Science of a Connected Age* (WW Norton & Company, 2003), ch. 1-3.
- Seth A. Marvel et al., "The Small-World Effect Is a Modern Phenomenon," *arXiv Preprint arXiv:1310.2636* (2013), http://arxiv.org/abs/1310.2636.
- Brian Uzzi and Jarrett Spiro, "Collaboration and Creativity: The Small World Problem," *American Journal of Sociology* 111, no. 2 (2005): 447–504, http://www.jstor.org/stable/10.1086/432782.
- David Liben-Nowell et al., "Geographic Routing in Social Networks," *Proceedings of the National Academy of Sciences of the United States of America* 102, no. 33 (2005): 11623–11628, http://www.pnas.org/content/102/33/11623.short.
- Mark Granovetter, "Ignorance, Knowledge, and Outcomes in a Small World," *Science* 301, no. 5634 (2003): 773–774, http://science.sciencemag.org/content/301/5634/773.short.

Wed, Oct 1 - Network formation over time and scale-free networks

- A. L. Barabási and R. Albert, "Emergence of Scaling in Random Networks," *Science* 286, no. 5439 (1999): 509—512, http://www.sciencemag.org/content/286/5439/509.short.
- Anna D. Broido and Aaron Clauset, "Scale-Free Networks Are Rare," *arXiv:1801.03400 [Physics, q-Bio, Stat]* (January 2018), http://arxiv.org/abs/1801.03400.
- Peter S. Bearman, James Moody, and Katherine Stovel, "Chains of Affection: The Structure of Adolescent Romantic and Sexual Networks1," *American Journal of Sociology* 110, no. 1 (2004): 44–91, http://www.jstor.org/stable/10.1086/386272.
- M. Morris and M. Kretzschmar, "Concurrent Partnerships and the Spread of HIV," *AIDS* 11, no. 5 (1997): 641, https://journals.lww.com/aidsonline/_layouts/15/oaks.journals/downloadpdf.aspx?an=00002030-199704000-00012.

Some recent online discussions of the power law debate (not required reading):

- Scant evidence of power laws found in real-world networks
- Power laws and me
- Spherical cows are rare
- Love is all you need

Related (we won't discuss)

- The online textbook Network Science by Barabasi
- A. Clauset, C. R. Shalizi, and M. E. J. Newman, "Power-Law Distributions in Empirical Data," *arXiv:0706.1062* (2007), http://epubs.siam.org/doi/abs/10.1137/070710111.

- Tuan Q. Phan and Edoardo M. Airoldi, "A Natural Experiment of Social Network Formation and Dynamics," *Proceedings of the National Academy of Sciences* 112, no. 21 (2015): 6595–6600, http://www.pnas.org/content/112/21/6595.short.
- Fredrik Liljeros et al., "The Web of Human Sexual Contacts," *Nature* 411, no. 6840 (2001): 907–908, http://www.nature.com/nature/journal/v411/n6840/full/411907a0.html.
  - James Holland Jones and Mark S. Handcock, "Social Networks (Communication Arising): Sexual Contacts and Epidemic Thresholds," *Nature* 423, no. 6940 (2003): 605–606, http://www.nature.com/nature/journal/v423/n6940/full/423605a.html.
  - Fredrik Liljeros et al., "Social Networks (Communication Arising): Sexual Contacts and Epidemic Thresholds," *Nature* 423, no. 6940 (2003): 606–606, http://www.nature.com/nature/journal/v423/n6940/full/423606a.html.
- Abigail Z. Jacobs et al., "Assembling Thefacebook: Using Heterogeneity to Understand Online Social Network Assembly," in *Proceedings of the ACM Web Science Conference* (ACM, 2015), 18, http://dl.acm.org/citation.cfm?id=2786477.
- Mark EJ Newman, "Coauthorship Networks and Patterns of Scientific Collaboration," *Proceedings of the National Academy of Sciences* 101, no. suppl 1 (2004): 5200–5205, http://www.pnas.org/content/101/suppl_1/5200.short.
- Mirjam Kretzschmar, Richard G. White, and Michel Caraël, "Concurrency Is More Complex Than It Seems," *AIDS (London, England)* 24, no. 2 (2010): 313, http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2887386/.

Wed, Oct 8 - Project check-in

We will not meet in person, but I will organize a way for each of us to spend a few minutes explaining what we plan to work on for the final project. There will be an opportunity for some peer feedback.

Wed, Oct 15 - Structure, segregation, and communities

- Peter M. Blau, "A Macrosociological Theory of Social Structure," *American Journal of Sociology* 83, no. 1 (1977): 26–54, http://www.journals.uchicago.edu/doi/abs/10.1086/226505.
- Jure Leskovec, Daniel Huttenlocher, and Jon Kleinberg, "Signed Networks in Social Media," in *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (ACM, 2010), 1361–1370, https://dl.acm.org/citation.cfm?id=1753532.

- Thomas A. DiPrete et al., "Segregation in Social Networks Based on Acquaintanceship and Trust," *American Journal of Sociology* 116, no. 4 (2011): 1234–83, http://www.jstor.org/stable/10.1086/659100.
- Mark EJ Newman and Michelle Girvan, "Finding and Evaluating Community Structure in Networks," *Physical Review E* 69, no. 2 (2004): 026113, http://journals.aps.org/pre/abstract/10.1103/PhysRevE.69.026113.

Related (we won't discuss)

- M. Girvan and M. E. J. Newman, "Community Structure in Social and Biological Networks," *Proceedings of the National Academy of Sciences* 99, no. 12 (2002): 7821, http://www.pnas.org/content/99/12/7821.short.
- Amir Goldberg, "Mapping Shared Understandings Using Relational Class Analysis: The Case of the Cultural Omnivore Reexamined," *American Journal of Sociology* 116, no. 5 (2011): 1397–1436, http://www.jstor.org/stable/10.1086/657976.
- Brian Karrer and Mark EJ Newman, "Stochastic Blockmodels and Community Structure in Networks," *Physical Review E* 83, no. 1 (2011): 016107, http://journals.aps.org/pre/abstract/10.1103/PhysRevE.83.016107.
- R. L. Breiger, "The Duality of Persons and Groups," *Social Forces* 53, no. 2 (1974): 181—190, http://sf.oxfordjournals.org/content/53/2/181.short.
- Laura Katherine Gee, Jason J. Jones, and Moira Burke, "Social Networks and Labor Markets: How Strong Ties Relate to Job Finding On Facebook's Social Network" (2016), http://www.journals.uchicago.edu/doi/pdfplus/10.1086/686225.
- Peter J. Bickel and Aiyou Chen, "A Nonparametric View of Network Models and Newman–Girvan and Other Modularities," *Proceedings of the National Academy of Sciences* 106, no. 50 (2009): 21068–21073, http://www.pnas.org/content/106/50/21068.full.
- M. Granovetter, "Economic Action and Social Structure: The Problem of Embeddedness," *Readings in Economic Sociology* (1985): 63–68, http://onlinelibrary.wiley.com/doi/10.1002/9780470755679.ch5/summary.
- Alexander Isakov et al., "The Structure of Negative Social Ties in Rural Village Networks," *Sociological Science* 6 (March 2019): 197–218, https://www.sociologicalscience.com/articles-v6-8-197/.

Wed, Oct 22 - Social capital and SOWT: Contemporary

Readings we will discuss:

- Sinan Aral and Marshall Van Alstyne, "The Diversity-Bandwidth Trade-off," *American Journal of Sociology* 117, no. 1 (July 2011): 90–171, https://www.journals.uchicago.edu/doi/full/10.1086/661238.

- Raj Chetty et al., "Social Capital I: Measurement and Associations with Economic Mobility," *Nature* 608, no. 7921 (August 2022): 108–121, https://www.nature.com/articles/s41586-022-04996-4.
- Raj Chetty et al., "Social Capital II: Determinants of Economic Connectedness," *Nature* 608, no. 7921 (August 2022): 122–134, https://www.nature.com/articles/s41586-022-04997-3.

Also, check out the social capital atlas.

Related (we won't discuss)

- J. P. Onnela et al., "Structure and Tie Strengths in Mobile Communication Networks," *Proceedings of the National Academy of Science, USA* 104, no. 18 (2007): 7332–7336, https://www.pnas.org/content/104/18/7332.short.
- Nathan Eagle, Michael Macy, and Rob Claxton, "Network Diversity and Economic Development," *Science* 328, no. 5981 (2010): 1029–1031, http://science.sciencemag.org/content/328/5981/1029.short.
- Comments on Sinan Aral and Marshall Van Alstyne, "The Diversity-Bandwidth Trade-off," *American Journal of Sociology* 117, no. 1 (July 2011): 90–171, https://www.journals.uchicago.edu/doi/full/10.1086/661238.
  - Jeroen Bruggeman, "The Strength of Varying Tie Strength: Comment on Aral and Van Alstyne," *American Journal of Sociology* 121, no. 6 (May 2016): 1919–1930, https://www.journals.uchicago.edu/doi/10.1086/686267.
  - Sinan Aral, "The Future of Weak Ties," *American Journal of Sociology* 121, no. 6 (May 2016): 1931–1939, https://www.journals.uchicago.edu/doi/10.1086/686293.
- Michael Bailey et al., "The Economic Effects of Social Networks: Evidence from the Housing Market," *Journal of Political Economy* 126, no. 6 (2018): 2224–2276.
- Patrick S. Park, Joshua E. Blumenstock, and Michael W. Macy, "The Strength of Long-Range Ties in Population-Scale Social Networks," *Science* 362, no. 6421 (December 2018): 1410–1413, https://www.science.org/doi/full/10.1126/science.aau9735.
- Maarit Kauppi et al., "Characteristics of Social Networks and Mortality Risk: Evidence From 2 Prospective Cohort Studies," *American Journal of Epidemiology* 187, no. 4 (April 2018): 746–753, https://academic.oup.com/aje/article/187/4/746/4093016.
- Patricia M. Eng et al., "Social Ties and Change in Social Ties in Relation to Subsequent Total and Cause-specific Mortality and Coronary Heart Disease Incidence in Men," *American Journal of Epidemiology* 155, no. 8 (April 2002): 700–709, https://academic.oup.com/aje/article/155/8/700/65625.
- Karthik Rajkumar et al., "A Causal Test of the Strength of Weak Ties," *Science*

377, no. 6612 (September 2022): 1304–1310, https://www.science.org/doi/10.1126/science.abl4476.

Demography-specific:

- Elizabeth Fussell and Douglas S. Massey, "The Limits to Cumulative Causation: International Migration from Mexican Urban Areas," *Demography* 41, no. 1 (2004): 151–171, http://link.springer.com/article/10.1353/dem.2004.0003.

Wed, Oct 29 - Simple contagion

The reading is not too long this week. Please take the opportunity to work on your project, and to catch up on your extra paper presentations!

- Nicholas A. Christakis and James H. Fowler, "Social Network Sensors for Early Detection of Contagious Outbreaks," *PloS One* 5, no. 9 (2010): e12948, http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0012948.
- Stéphane Helleringer and Hans-Peter Kohler, "Sexual Network Structure and the Spread of HIV in Africa: Evidence from Likoma Island, Malawi:" *AIDS* 21, no. 17 (November 2007): 2323–2332, http://content.wkhealth.com/linkback/openurl?sid=WKPTLP:landingpage&an=00002030-200711120-00009.
- Dennis M. Feehan and Ayesha S. Mahmud, "Quantifying Population Contact Patterns in the United States During the COVID-19 Pandemic," *Nature Communications* 12, no. 1 (2021): 1–9.

Related (we won't discuss)

- Joël Mossong et al., "Social Contacts and Mixing Patterns Relevant to the Spread of Infectious Diseases," *PLoS Medicine* 5, no. 3 (2008): e74, http://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.0050074.
- Shweta Bansal, Bryan T. Grenfell, and Lauren Ancel Meyers, "When Individual Behaviour Matters: Homogeneous and Network Models in Epidemiology," *Journal of the Royal Society Interface* 4, no. 16 (2007): 879–891, http://rsif.royalsocietypublishing.org/content/4/16/879.short.
- Akihiro Nishi et al., "Network Interventions for Managing the COVID-19 Pandemic and Sustaining Economy," *Proceedings of the National Academy of Sciences* 117, no. 48 (December 2020): 30285–30294, https://www.pnas.org/content/117/48/30285.
- Matt J. Keeling et al., "Individual Identity and Movement Networks for Disease Metapopulations," *Proceedings of the National Academy of Sciences* 107, no. 19 (2010): 8866–8870, http://www.pnas.org/content/107/19/8866.short.
- ABHIJIT BANERJEE et al., "Using Gossips to Spread Information: Theory and

Evidence from a Randomized Controlled Trial" (2017), https://arxiv.org/pdf/1406.2293.pdf.

- Pejman Rohani, Xue Zhong, and Aaron A. King, "Contact Network Structure Explains the Changing Epidemiology of Pertussis," *Science* 330, no. 6006 (2010): 982–985, http://science.sciencemag.org/content/330/6006/982.short.
- Marcel Salathé and James H. Jones, "Dynamics and Control of Diseases in Networks with Community Structure," *PLoS Comput Biol* 6, no. 4 (2010): e1000736, http://journals.plos.org/ploscompbiol/article?id=10.1371/journal.pcbi.1000736.
- Juanjuan Zhang et al., "Changes in Contact Patterns Shape the Dynamics of the COVID-19 Outbreak in China," *Science* 368, no. 6498 (June 2020): 1481–1486, https://science.sciencemag.org/content/368/6498/1481.
- Jacco Wallinga, Peter Teunis, and Mirjam Kretzschmar, "Using Data on Social Contacts to Estimate Age-specific Transmission Parameters for Respiratory-spread Infectious Agents," *American Journal of Epidemiology* 164, no. 10 (November 2006): 936–944, https://academic.oup.com/aje/article/164/10/936/162511.

Wed, Nov 5 - Complex contagion and social influence part I

- Mark Granovetter, "Threshold Models of Collective Behavior," *American Journal of Sociology* 83, no. 6 (1978): 1420–1443, http://dx.doi.org/10.2307/2778111.
- Damon Centola, "The Social Origins of Networks and Diffusion," *American Journal of Sociology* 120, no. 5 (2015): 1295–1338, http://www.jstor.org/stable/10.1086/681275.
- Johan Ugander et al., "Structural Diversity in Social Contagion," *Proceedings of the National Academy of Sciences* 109, no. 16 (2012): 5962–5966, http://www.pnas.org/content/109/16/5962.short.
- N. A. Christakis and J. H. Fowler, "The Spread of Obesity in a Large Social Network over 32 Years," *New England Journal of Medicine* 357, no. 4 (2007): 370—379, http://www.nejm.org/doi/full/10.1056/nejmsa066082.
- Cosma Rohilla Shalizi and Andrew C. Thomas, "Homophily and Contagion Are Generically Confounded in Observational Social Network Studies," *Sociological Methods & Research* 40, no. 2 (2011): 211–239, http://smr.sagepub.com/content/40/2/211.short.

Related (we won't discuss)

- Paul DiMaggio and Filiz Garip, "How Network Externalities Can Exacerbate Intergroup Inequality," *American Journal of Sociology* 116, no. 6 (May 2011): 1887–1933, http://www.jstor.org/stable/10.1086/659653.
- Duncan J Watts, "A Simple Model of Global Cascades on Random Networks," *Proceedings of the National Academy of Sciences of the United States of America* 99, no. 9 (April 2002): 5766–5771, http://dx.doi.org/10.1073/pnas.082090499.
- D. J. Watts and P. S. Dodds, "Influentials, Networks, and Public Opinion For-

mation," *Journal of Consumer Research* 34, no. 4 (2007): 441—458, http://www.jstor.org/stable/10.1086/518527.

- Damon Centola and Michael Macy, "Complex Contagions and the Weakness of Long Ties," *American Journal of Sociology* 113, no. 3 (November 2007): 702–734, http://www.jstor.org/stable/10.1086/521848.
- Damon Centola, *How Behavior Spreads: The Science of Complex Contagions* (Princeton University Press, 2018).
- Michael W. Macy and Anna Evtushenko, "Threshold Models of Collective Behavior II: The Predictability Paradox and Spontaneous Instigation," *Sociological Science* 7 (December 2020): 628–648, https://sociologicalscience.com/articles-v7-26-628/.
- Jonas L. Juul and Johan Ugander, "Comparing Information Diffusion Mechanisms by Matching on Cascade Size," *Proceedings of the National Academy of Sciences* 118, no. 46 (November 2021): e2100786118, https://www.pnas.org/doi/abs/10.1073/pnas.2100786118.
- Controversy over the C-F findings on the contagion of obesity (blog post by Andrew Gelman)
- Russell Lyons, "The Spread of Evidence-Poor Medicine via Flawed Social-Network Analysis," *Statistics, Politics, and Policy* 2, no. 1 (2011), http://www.degruyter.com/view/j/spp.2011.2.issue-1/spp.2011.2.1.1024/spp.2011.2.1.1024.xml.
- Social Contagion Theory: Examining Dynamic Social Networks and Human Behavior (a response to some criticisms of Christakis and Fowler)
- Charles F. Manski, "Identification of Endogenous Social Effects: The Reflection Problem," *The Review of Economic Studies* 60, no. 3 (1993): 531–542, http://restud.oxfordjournals.org/content/60/3/531.short.

Especially relevant for demography:

- Nicoletta Balbo and Nicola Barban, "Does Fertility Behavior Spread Among Friends?" *American Sociological Review* 79, no. 3 (2014): 412–431, http://asr.sagepub.com/content/79/3/412.short.

Wed, Nov 12 - Social influence II

Note: we may only do a subset of these

- David W. Nickerson, "Is Voting Contagious? Evidence from Two Field Experiments," *American Political Science Review* 102, no. 1 (2008): 49–57, http://journals.cambridge.org/abstract_S0003055408080039.
- Robert M. Bond et al., "A 61-Million-Person Experiment in Social Influence and Political Mobilization," *Nature* 489, no. 7415 (2012): 295–298, http://www.nature.com/nature/journal/v489/n7415/abs/nature11421.html.

- Abhijit Banerjee et al., "The Diffusion of Microfinance," *Science* 341, no. 6144 (2013): 1236498, http://science.sciencemag.org/content/341/6144/1236498.short.
- Edoardo M. Airoldi and Nicholas A. Christakis, "Induction of Social Contagion for Diverse Outcomes in Structured Experiments in Isolated Villages," *Science* 384, no. 6695 (May 2024): eadi5147, https://www.science.org/doi/10.1126/science.adi5147.

Related (we won't discuss)

- David A Kim et al., "Social Network Targeting to Maximise Population Behaviour Change: A Cluster Randomised Controlled Trial," *The Lancet* 386, no. 9989 (July 2015): 145–153, http://www.sciencedirect.com/science/article/pii/S0140673615600952.
- Elizabeth Levy Paluck, Hana Shepherd, and Peter M. Aronow, "Changing Climates of Conflict: A Social Network Experiment in 56 Schools," *Proceedings of the National Academy of Sciences* 113, no. 3 (2016): 566–571, http://www.pnas.org/content/113/3/566.short.
- Bruce Sacerdote, *Peer Effects with Random Assignment: Results for Dartmouth Roommates* (National bureau of economic research, 2000), http://www.nber.org/papers/w7469.
- Hans-Peter Kohler, Jere R. Behrman, and Susan C. Watkins, "Social Networks and HIV/AIDS Risk Perceptions," *Demography* 44, no. 1 (2007): 1–33, http://link.springer.com/article/10.1353/dem.2007.0006.
- D. Centola, "The Spread of Behavior in an Online Social Network Experiment," *Science* 329, no. 5996 (2010): 1194—1197, http://www.sciencemag.org/content/329/5996/1194.short.
- Eytan Bakshy et al., "The Role of Social Networks in Information Diffusion," in *Proceedings of the 21st International Conference on World Wide Web*, 2012, 519–528, http://dl.acm.org/citation.cfm?id=2187907.
- Eytan Bakshy, Dean Eckles, and Michael S. Bernstein, "Designing and Deploying Online Field Experiments," in *Proceedings of the 23rd International Conference on World Wide Web* (ACM, 2014), 283–292, http://dl.acm.org/citation.cfm?id=2567967.
- Dean Eckles, Brian Karrer, and Johan Ugander, "Design and Analysis of Experiments in Networks: Reducing Bias from Interference," *arXiv Preprint arXiv:1404.7530* (2014), http://arxiv.org/abs/1404.7530.
- Eytan Bakshy et al., "Social Influence in Social Advertising: Evidence from Field Experiments," in *Proceedings of the 13th ACM Conference on Electronic Commerce* (ACM, 2012), 146–161, http://dl.acm.org/citation.cfm?id=2229027.

Wed, Nov 19 Collaboration and cooperation

Note: the readings for this week are especially likely to change; this is a placeholder for this topic…

- Jing Wang, Siddharth Suri, and Duncan J. Watts, "Cooperation and Assortativity with Dynamic Partner Updating," *Proceedings of the National Academy of Sciences* 109, no. 36 (2012): 14363–14368, http://www.pnas.org/content/109/36/14363.short.
- David G. Rand et al., "Static Network Structure Can Stabilize Human Cooperation," *Proceedings of the National Academy of Sciences* 111, no. 48 (2014): 17093–17098, http://www.pnas.org/content/111/48/17093.short.
- Akihiro Nishi et al., "Inequality and Visibility of Wealth in Experimental Social Networks," *Nature* 526, no. 7573 (2015): 426–429, http://www.nature.com/nature/journal/v526/n7573/abs/nature15392.html.
- Roger Guimera et al., "Team Assembly Mechanisms Determine Collaboration Network Structure and Team Performance," *Science* 308, no. 5722 (2005): 697–702, http://science.sciencemag.org/content/308/5722/697.short.
- Winter Mason and Duncan J. Watts, "Collaborative Learning in Networks," *Proceedings of the National Academy of Sciences* 109, no. 3 (2012): 764–769, http://www.pnas.org/content/109/3/764.short.
- Winter Mason, Siddharth Suri, and Duncan J. Watts, "Long-Run Learning in Games of Cooperation," in *Proceedings of the Fifteenth ACM Conference on Economics and Computation* (ACM, 2014), 821–838, http://dl.acm.org/citation.cfm?id=2602892.
- Matthew O. Jackson, Tomas Rodriguez-Barraquer, and Xu Tan, "Social Capital and Social Quilts: Network Patterns of Favor Exchange," *The American Economic Review* 102, no. 5 (2012): 1857–1897, http://www.ingentaconnect.com/content/aea/aer/2012/00000102/00000005/art00004.

Related (we won't discuss)

(TBA)

Wed, Nov 26 - Thanksgiving (no class)

Enjoy the break!

Wed, Dec 3 - Mini-conference

For the mini-conference, we will each give a brief presentation of our paper. There's no specific reading for this week.

Wrap-up

Optional wrap-up:

- Duncan J. Watts, "The 'New' Science of Networks," *Annual Review of Sociology* (2004): 243–270, http://www.jstor.org/stable/29737693.
- Mark EJ Newman and Juyong Park, "Why Social Networks Are Different from Other Types of Networks," *Physical Review E* 68, no. 3 (2003): 036122, http://journals.aps.org/pre/abstract/10.1103/PhysRevE.68.036122.
- Matthew O. Jackson, Brian W. Rogers, and Yves Zenou, "The Economic Consequences of Social Network Structure" (2016), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2467812.

Additional topics

Political networks

- Diana C. Mutz, "Cross-Cutting Social Networks: Testing Democratic Theory in Practice," *American Political Science Review* 96, no. 1 (2002): 111–126, http://journals.cambridge.org/production/action/cjoGetFulltext?fulltextid=208465.
- Pablo Barberá, "Birds of the Same Feather Tweet Together: Bayesian Ideal Point Estimation Using Twitter Data," *Political Analysis* 23, no. 1 (2015/ed): 76–91, https://www.cambridge.org/core/journals/political-analysis/article/birds-of-the-same-feather-tweet-together-bayesian-ideal-point-estimation-using-twitter-data/91E37205F69AEA32EF27F12563DC2A0A.
- Sandra González-Bailón and Ning Wang, "Networked Discontent: The Anatomy of Protest Campaigns in Social Media," *Social Networks* 44 (January 2016): 95–104, http://www.sciencedirect.com/science/article/pii/S0378873315000659.
- Andrew Guess, Jonathan Nagler, and Joshua Tucker, "Less Than You Think: Prevalence and Predictors of Fake News Dissemination on Facebook," *Science Advances* 5, no. 1 (January 2019): eaau4586, http://advances.sciencemag.org/content/5/1/eaau4586.
- Diana C. Mutz, "The Consequences of Cross-Cutting Networks for Political Participation," *American Journal of Political Science* (2002): 838–855.
- Jennifer M. Larson and Janet I. Lewis, "Ethnic Networks," *American Journal of Political Science* 61, no. 2 (2017): 350–364, https://onlinelibrary.wiley.com/doi/abs/10.1111/ajps.12282.
- Paul Allen Beck et al., "The Social Calculus of Voting: Interpersonal, Media, and Organizational Influences on Presidential Choices," *The American Political Science Review* 96, no. 1 (2002): 57–73, https://www.jstor.org/stable/3117810.
- Matthew Gentzkow and Jesse M. Shapiro, "Ideological Segregation Online and Offline," *The Quarterly Journal of Economics* 126, no. 4 (November 2011): 1799–

1839, https://academic.oup.com/qje/article/126/4/1799/1924154.
- James H. Fowler, "Legislative Cosponsorship Networks in the US House and Senate," *Social Networks* 28, no. 4 (October 2006): 454–465, http://www.sciencedirect.com/science/article/pii/S0378873305000730.
- Marco Battaglini, Valerio Leone Sciabolazza, and Eleonora Patacchini, "Effectiveness of Connected Legislators," *American Journal of Political Science* n/a, no. n/a (2020), https://onlinelibrary.wiley.com/doi/abs/10.1111/ajps.12518.
- Elisabeth Noelle-Neumann, "Turbulences in the Climate of Opinion: Methodological Applications of the Spiral of Silence Theory," *Public Opinion Quarterly* 41, no. 2 (January 1977): 143–158, https://academic.oup.com/poq/article/41/2/143/1934998.
- Dietram A. Scheufle and Patricia Moy, "Twenty-Five Years of the Spiral of Silence: A Conceptual Review and Empirical Outlook," *International Journal of Public Opinion Research* 12, no. 1 (March 2000): 3–28, https://academic.oup.com/ijpor/article/12/1/3/739823.
- Pablo Barberá et al., "Who Leads? Who Follows? Measuring Issue Attention and Agenda Setting by Legislators and the Mass Public Using Social Media Data," *American Political Science Review* 113, no. 4 (November 2019): 883–901, https://www.cambridge.org/core/journals/american-political-science-review/article/who-leads-who-follows-measuring-issue-attention-and-agenda-setting-by-legislators-and-the-mass-public-using-social-media-data/D855849CE288A241529E9EC2E4FBD3A8.
- Michela Del Vicario et al., "The Spreading of Misinformation Online," *Proceedings of the National Academy of Sciences* 113, no. 3 (January 2016): 554–559, https://www.pnas.org/content/113/3/554.
- Delia Baldassarri and Peter Bearman, "Dynamics of Political Polarization," *American Sociological Review* 72, no. 5 (October 2007): 784–811, https://doi.org/10.1177/000312240707200507.

Course policies

Religious Accommodations

Requests to accommodate a student's religious creed by scheduling tests or examinations at alternative times should be submitted directly to the instructor. Reasonable common sense, judgment and the pursuit of mutual goodwill should result in the positive resolution of scheduling conflicts. The regular campus appeals process applies if a mutually satisfactory arrangement cannot be achieved.

Statement on Academic Freedom

Both students and instructors have rights to academic freedom. Please respect the rights of others to express their points of view in the classroom.

DSP Accommodations
Please see the instructor to discuss accommodations for physical disabilities, medical disabilities and learning disabilities.
Student Resources
The Student Learning Center provides a wide range of resources to promote learning and academic success for students. For information regarding these services, please consult the Student Learning Center Website: https://slc.berkeley.edu/
Academic Integrity
The high academic standard at the University of California, Berkeley, is reflected in each degree that is awarded. As a result, every student is expected to maintain this high standard by ensuring that all academic work reflects unique ideas or properly attributes the ideas to the original sources.
These are some basic expectations of students with regards to academic integrity:

- Any work submitted should be your own individual thoughts, and should not have been submitted for credit in another course unless you have prior written permission to re-use it in this course from this instructor.
- All assignments must use "proper attribution," meaning that you have identified the original source and extent or words or ideas that you reproduce or use in your assignment. This includes drafts and homework assignments!
- If you are unclear about expectations, ask your instructor or GSI.
- Do not collaborate or work with other students on assignments or projects unless you have been given permission or instruction to do so.