



# STS 205: Data Cultures

Spring 2020 Course Syllabus

Seminar: Wednesday, 2:10-5:00PM, Zoom

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Office Hours: By appointment, via Zoom

## What is this course about?

This graduate seminar will examine the history and culture of data practices, sharing, and infrastructure in both research and civic domains. In studying ethnographies of various scientific and civic communities, we will investigate the epistemologies of data work and how the emergence data-based infrastructures has reshaped representation, how expertise operates, how evidence is trusted, how collaboration is valued, and how communities cope with uncertainty in diverse domains. In the second half of the quarter, we will transition towards examining the ways in which data practices and infrastructures mediate belonging, difference, and social justice. Throughout the quarter, institutions and policies seeking to advance cross-domain data sharing will be studied, along with various forms of advocacy for and resistance to data standards and collection. Literature at the intersection of critical data studies, information infrastructure studies, and STS will be surveyed.

Students will have an opportunity to experiment with new data studies methodologies and to practice techniques in data management planning and stewardship in preparation for sharing data across diverse data cultures.

## How will you be graded?

CRITERIA	PERCENTAGE
Homework Assignments (5)	75%
Discussion and Participation	25%

## What are the course policies?

### *Academic Integrity*

As a UC Davis student, you are expected to know when and how to cite, quote, and paraphrase another individual's work correctly. Please see the UC Davis Code of Conduct for more information: <http://sja.ucdavis.edu/files/cac.pdf>. Plagiarism violates the UC Davis Code of Conduct. Students suspected of plagiarism will be referred to Student Judicial Affairs.

### *Participation*

The class format is primarily seminar-style discussion. You will be expected to actively participate in the discussion by posing questions, critiquing ideas, evaluating theories, synthesizing arguments, and applying concepts. You will also be expected to lead at least two class sessions and should come prepared with material to move the discussion with questions, examples, and supporting material.

## What are the course assignments?

The first set of assignments will provide you an opportunity to reflect on your own research data practices and cultures and will culminate in the writing of a data management plan for a current or soon to be carried out research project.

### *What is your Archive? (10%)*

In a 1000-word memo, you will consider the breadth of material that you would constitute as inclusive in your research archive. You will consider the types of data that you plan to produce and the mediums through which you imagine your archive to disseminate.

### *Disciplinary Data Ideologies (10%)*

Drawing on the preliminary course readings, in this second assignment, you will explore and reflect on the discourses, incentives, practices, infrastructures, and ideologies that guide and support data practices in your own discipline in a 1000-word memo. You may refer to the heuristic at:

Poirier, Lindsay, and Brandon Costelloe-Kuehn. 2019. "Data Sharing at Scale: A Heuristic for Affirming Data Cultures." *Data Science Journal* 18 (1): 48. <https://doi.org/10.5334/dsj-2019-048>.

### *Data Management Plan (15%)*

In this third assignment, you will write a data management plan for a project of your choosing (real or hypothetical), taking into consideration principles of data management and stewardship discussed in class. You will follow an existing funding institution's template and then justify your plan in a 500-memo.

The second set of assignments will provide you an opportunity to experiment with new methods emerging in information infrastructure studies and critical data studies. You should select two of the methods pieces listed below to read. For each, you will be expected to write up (in 4000 words) a concise set of ethnographic observations and narrative interpretations about a data ideology, data practice, data object, or data infrastructure in the spirit of the method outlined. In addition to outlining your findings and insights, you should reflect on the affordances and limitations of the method. Each will be worth 20% of your grade.

### *Infrastructural Inversion*

Chapter 1: Bowker, Geoffrey C., and Susan Leigh Star. 1999. *Sorting Things Out: Classification and Its Consequences*. Cambridge, MA: MIT Press.

### *Trace Ethnography*

Geiger, R. Stuart, and David Ribes. 2011. "Trace Ethnography: Following Coordination through Documentary Practices." In 2011 44th Hawaii International Conference on System Sciences, 1–10. <https://doi.org/10.1109/HICSS.2011.455>.

### *Database Ethnography*

Schuurman, Nadine. 2008. "Database Ethnographies Using Social Science Methodologies to Enhance Data Analysis and Interpretation." *Geography Compass* 2 (5): 1529–48. <https://doi.org/10.1111/j.1749-8198.2008.00150.x>.

### *Data Journeys*

Bates, Jo, Yu-Wei Lin, and Paula Goodale. 2016. "Data Journeys: Capturing the Socio-Material Constitution of Data Objects and Flows." *Big Data & Society* 3 (2): 2053951716654502. <https://doi.org/10.1177/2053951716654502>.

### *Data Assemblage*

Kitchin, Rob, and Tracey P. Lauriault. 2014. "Towards Critical Data Studies: Charting and Unpacking Data Assemblages and Their Work." SSRN Scholarly Paper ID 2474112. Rochester, NY: Social Science Research Network. <https://papers.ssrn.com/abstract=2474112>.

# Course Schedule

\*Readings in bold, you should read fully. Readings not in bold, you should come prepared to discuss (i.e. know their main arguments, be able to articulate at least some of the supporting details, explicate any concepts they have introduced, and recognize their contributions to the field.)

Suggested Reading: Knox, Hannah, and Dawn Nafus. 2018. *Ethnography for a Data-Saturated World*. Manchester University Press.

## WEEK 1: INTRODUCTIONS

4/1

## WEEK 2: ARCHIVE FEVER

4/8

- Derrida, Jacques. 1998. *Archive Fever: A Freudian Impression*. University of Chicago Press. (this <https://www.youtube.com/watch?v=uHtXeUH4gnY> can serve as an apt proxy)
- **Bowker, Geoffrey C. 2010. "The Archive." *Communication and Critical/Cultural Studies* 7 (2): 212-14. <https://doi.org/10.1080/14791421003775733>.**
- **Waterton, Claire. 2010. "Experimenting with the Archive: STS-Ers As Analysts and Co-Constructors of Databases and Other Archival Forms." *Science, Technology, & Human Values* 35 (5): 645-76. <https://doi.org/10.1177/0162243909340265>.**
- **Povinelli, Elizabeth A. 2011. "The Woman on the Other Side of the Wall: Archiving the Otherwise in Postcolonial Digital Archives." *Differences* 22 (1): 146-71. <https://doi.org/10.1215/10407391-1218274>.**
- **Reilly, Michele, and Santi Thompson. 2019. "Understanding Data Management Planning and Sharing: Perspectives for the Social Scientist." In *Anthropological Data in the Digital Age: New Possibilities-New Challenges*, edited by Jerome Crowder, Mike Fortun, Rachel Besara, and Lindsay Poirier, 13-30. Palgrave Macmillan.**

## WEEK 3: DATA EPISTEMOLOGIES

4/15

- **Anderson, Chris. 2008. "The End of Theory: The Data Deluge Makes the Scientific Method Obsolete." *WIRED*. June 23, 2008. [http://archive.wired.com/science/discoveries/magazine/16-07/pb\\_theory](http://archive.wired.com/science/discoveries/magazine/16-07/pb_theory).**
- Kim Fortun & Mike Fortun, "Scientific Imaginaries and Ethical Plateaus in Contemporary U.S. Toxicology," *American Anthropologist* 107(1).
- **boyd, danah, and Kate Crawford. 2012. "Critical Questions for Big Data." *Information, Communication & Society* 15 (5): 662-79. <https://doi.org/10.1080/1369118X.2012.678878>.**
- **Kitchin, Rob. 2014. "Big Data, New Epistemologies and Paradigm Shifts." *Big Data & Society* 1 (1): 2053951714528481. <https://doi.org/10.1177/2053951714528481>.**
- **Leonelli, S. 2014. "What Difference Does Quantity Make? On the Epistemology of Big Data in Biology." *Big Data & Society*, April. <https://doi.org/10.1177/2053951714534395>.**
- Ribes, David. 2019. "STS, Meet Data Science, Once Again." *Science, Technology, & Human Values* 44 (3): 514-39. <https://doi.org/10.1177/0162243918798899>.

## WEEK 4: CULTURES OF QUANTIFICATION

4/22

- **Daston, Lorraine, and Peter Galison. 1992. "The Image of Objectivity." *Representations*, no. 40: 81-128. <https://doi.org/10.2307/2928741>.**
- **Porter, Theodore M. 1996. *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life*. Princeton University Press.**
- **Poovey, Mary. 1998. *A History of the Modern Fact: Problems of Knowledge in the Sciences of Wealth and Society*. University of Chicago Press.**
- Thrift, Nigel. 2004. "Movement-Space: The Changing Domain of Thinking Resulting from the Development of New Kinds of Spatial Awareness." *Economy and Society* 33 (4): 582-604. <https://doi.org/10.1080/0308514042000285305>.
- Lupton, Deborah. 2013. "Quantifying the Body: Monitoring and Measuring Health in the Age of MHealth Technologies." *Critical Public Health* 23 (4): 393-403. <https://doi.org/10.1080/09581596.2013.794931>.
- Merry, Sally Engle. 2016. *The Seductions of Quantification: Measuring Human Rights, Gender Violence, and Sex Trafficking*. University of Chicago Press.
- Williamson, Ben. 2016. "Digital Education Governance: Data Visualization, Predictive Analytics, and 'Real-Time' Policy Instruments." *Journal of Education Policy* 31 (2): 123-41. <https://doi.org/10.1080/02680939.2015.1035758>.

## WEEK 5: DATA ONTOLOGIES

4/29

- **Bowker, Geoffrey C. 1998.** "The Kindness of Strangers: Kinds and Politics in Classification Systems." <https://www.ideals.illinois.edu/handle/2142/8207>.
- **Hacking, Ian. 2006.** "Making Up People." *London Review of Books*
- **Asdal, Kristin. 2008.** "Enacting Things through Numbers: Taking Nature into Account/Ing." *Geoforum, Environmental Economic Geography*, 39 (1): 123-32. <https://doi.org/10.1016/j.geoforum.2006.11.004>.
- **Kirksey, Eben. 2015.** "Species: a praxiographic study." *Journal of the Royal Anthropological Institute* 21 (4): 758-80. <https://doi.org/10.1111/1467-9655.12286>.
- **Fortun, Kim. 2014.** "From Latour to Late Industrialism." *HAU: Journal of Ethnographic Theory* 4 (1): 309-29. <https://doi.org/10.14318/hau4.1.017>.
- **Jasanoff, Sheila. 2017.** "Virtual, Visible, and Actionable: Data Assemblages and the Sightlines of Justice." *Big Data & Society* 4 (2): 2053951717724477. <https://doi.org/10.1177/2053951717724477>.

## WEEK 6: DATABASED REPRESENTATIONS

5/6

- **Bowker, Geoffrey C. 2000.** "Biodiversity Datadiversity." *Social Studies of Science* 30 (5): 643-83. <https://doi.org/10.1177/030631200030005001>.
- **Hine, Christine. 2006.** "Databases as Scientific Instruments and Their Role in the Ordering of Scientific Work." *Social Studies of Science* 36 (2): 269-98. <https://doi.org/10.1177/0306312706054047>.
- **Golumbia, David. 2009.** *The Cultural Logic of Computation*. Harvard University Press.
- **Mackenzie, Adrian. 2012.** "More Parts Than Elements: How Databases Multiply." *Environment and Planning D: Society and Space* 30 (2): 335-50. <https://doi.org/10.1068/d6710>.
- **Galloway, Alexander R. 2014.** "The Cybernetic Hypothesis." *Differences* 25 (1): 107-31. <https://doi.org/10.1215/10407391-2420021>.
- **Dourish, Paul. 2014.** "No SQL: The Shifting Materialities of Database Technology: Computational Culture." November 9, 2014. <http://computationalculture.net/article/no-sql-the-shifting-materialities-of-database-technology>.

## WEEK 7: SHARING AND CARING FOR DATA

5/13

- **Ribes, David, and Geoffrey C. Bowker. 2009.** "Between Meaning and Machine: Learning to Represent the Knowledge of Communities." *Information and Organization* 19 (4): 199-217. <https://doi.org/10.1016/j.infoandorg.2009.04.001>.
- **Leonelli, Sabina. 2010.** "Packaging Small Fact for Re-Use: Databases in Model Organism Biology." In *How Well Do Facts Travel?: The Dissemination of Reliable Knowledge*, edited by Peter Howlett and Mary S. Morgan, 325-48. Cambridge, MA: Cambridge University Press.
- **Edwards, Paul, Matthew S. Mayernik, Archer Batcheller, Geoffrey Bowker, and Christine Borgman. 2011.** "Science Friction: Data, Metadata, and Collaboration." *Social Studies of Science* 41 (5): 667-90. <https://doi.org/10.1177/0306312711413314>.
- **Borgman, Christine L. 2012.** "The Conundrum of Sharing Research Data." *Journal of the American Society for Information Science and Technology* 63 (6): 1059-78. <https://doi.org/10.1002/asi.22634>.
- **Millerand, Florence, David Ribes, Karen S. Baker, and Geoffrey C. Bowker. 2013.** "Making an Issue out of a Standard: Storytelling Practices in a Scientific Community." *Science, Technology, & Human Values* 38 (1): 7-43. <https://doi.org/10.1177/0162243912437221>.

## WEEK 8: DATA MARGINS

5/20

- **Lauretis, Teresa de. 1984.** *Alice Doesn't: Feminism, Semiotics, Cinema*. Indiana University Press.
- **Star, Susan Leigh, and Geoffrey C. Bowker. 2007.** "Enacting Silence: Residual Categories as a Challenge for Ethics, Information Systems, and Communication." *Ethics and Information Technology* 9 (4): 273-80. <https://doi.org/10.1007/s10676-007-9141-7>.
- **Crutcher, Michael, and Matthew Zook. 2009.** "Placemarks and Waterlines: Racialized Cyberscapes in Post-Katrina Google Earth." *Geoforum, Themed Issue: The 'view from nowhere'?* Spatial politics and cultural significance of high-resolution satellite imagery, 40 (4): 523-34. <https://doi.org/10.1016/j.geoforum.2009.01.003>.
- **Poggiali, Lisa. 2016.** "Seeing (from) Digital Peripheries: Technology and Transparency in Kenya's Silicon Savannah." *Cultural Anthropology* 31 (3): 387-411. <https://doi.org/10.14506/ca31.3.07>.
- **Gillespie, Tarleton. 2014.** "The Relevance of Algorithms." In *Media Technologies: Essays on Communication, Materiality, and Society*, by Pablo J. Boczkowski and Kirsten A. Foot, 167. MIT Press.
- **Irani, Lilly. 2015.** "Justice for 'Data Janitors.'" *Public Books* (blog). January 15, 2015. <https://www.publicbooks.org/justice-for-data-janitors/>.
- **Iliadis, Andrew. 2018.** "Algorithms, Ontology, and Social Progress." *Global Media and Communication* 14 (2): 219-30. <https://doi.org/10.1177/1742766518776688>.

Note: There are a number of relevant reading for this topic not represented here, and I'm open to shifting the focus based on student interest.

## WEEK 9: DATA ACTIVISM AND RESISTANCE

5/27

- **Ottinger, Gwen. 2010. "Buckets of Resistance: Standards and the Effectiveness of Citizen Science." *Science, Technology, & Human Values* 35 (2): 244-70. <https://doi.org/10.1177/0162243909337121>.**
- Liboiron, Max. 2015. "Disaster Data, Data Activism: Grassroots Responses to Representing Superstorm Sandy." In *Extreme Weather and Global Media*, edited by Julia Leyda and Diane Negra. Taylor & Francis Group. <https://doi.org/10.4324/9781315756486-7>.
- **Milan, Stefania, and Lonneke van der Velden. 2016. "The Alternative Epistemologies of Data Activism." *Digital Culture & Society* 2 (2): 57-74. <https://doi.org/10.14361/dcs-2016-0205>.**
- Schrock, Andrew R. 2016. "Civic Hacking as Data Activism and Advocacy: A History from Publicity to Open Government Data." *New Media & Society* 18 (4): 581-99. <https://doi.org/10.1177/1461444816629469>.
- Currie, Morgan, Britt S Paris, Irene Pasquetto, and Jennifer Pierre. 2016. "The Conundrum of Police Officer-Involved Homicides: Counter-Data in Los Angeles County." *Big Data & Society* 3 (2): 2053951716663566. <https://doi.org/10.1177/2053951716663566>.

## WEEK 10: STS/DATA SCIENCE COLLABORATIONS

6/3

- Neff, Gina, Anissa Tanweer, Brittany Fiore-Gartland, and Laura Osburn. 2017. "Critique and Contribute: A Practice-Based Framework for Improving Critical Data Studies and Data Science." *Big Data* 5 (2): 85-97. <https://doi.org/10.1089/big.2016.0050>.
- Maharawal, Manissa M., and Erin McElroy. 2018. "The Anti-Eviction Mapping Project: Counter Mapping and Oral History toward Bay Area Housing Justice." *Annals of the American Association of Geographers* 108 (2): 380-89. <https://doi.org/10.1080/24694452.2017.1365583>.
- Vera, Lourdes A., Dawn Walker, Michelle Murphy, Becky Mansfield, Ladan Mohamed Siad, Jessica Ogden, and EDGI. 2019. "When Data Justice and Environmental Justice Meet: Formulating a Response to Extractive Logic through Environmental Data Justice." *Information, Communication & Society* 22 (7): 1012-28. <https://doi.org/10.1080/1369118X.2019.1596293>.
- Dumit, Joe and Dawn Nafus. 2018. "The other ninety percent: Thinking with data science, creating data studies - an interview with Joseph Dumit." In *Ethnography in a Data Saturated World*, edited by Hannah Knox and Dawn Nafus. Manchester University Press.