INF1324: Critical Infrastructures
Winter 2019
January 7 – April 3, 2019
Section 101: Mondays, 6:30PM – 9:30PM, Room 313
Section 102: Wednesdays, 1PM – 4PM, Room 313
Instructor: Patrick Keilty, MLIS, PhD
Office Hours: By appointment
Office: Bissell Room 714
Email: p.keilty@utoronto.ca
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Land Acknowledgement
The sacred land on which we operate has been a site of human activity for 15,000 years. This
land is the territory of the Huron-Wendat and Petun First Nations, the Seneca, the Mississaugas
of the Credit River and the nations of the Haudenosaunee Confederacy. It is marked by a
history of settler colonialism and genocide, as well as resistance; it is a site from which ongoing
internal and external colonial projects are launched and extended, even as their persistence and
violence is erased in dominant accounts of history, especially accounts of the present day. The
territory was the subject of the Dish With One Spoon Wampum Belt Covenant, an agreement
between the Haudenosaunee Confederacy and the Ojibwe and allied nations to peaceably share
and care for the resources around the Great Lakes.

Two Row Wampum says we are going to live on this land together and respect each other's
sovereignty. The Dish with One Spoon is an agreement that recognizes that we live off of the
same resources. It is hard to eat a collective meal together off of a dish with one spoon, hence
protocols are put in place to ensure mutual respect and accountability to each other, and to the
land.

Today, the meeting place of Toronto is still the home to indigenous people from across Turtle
Island. Our intersecting communities are comprised of those native to this land, Indigenous
people from other territories, as well as settlers who have come here by choice, force, or
otherwise a result of settler colonialism and imperialism.

The Truth and Reconciliation Commission's *94 Calls to Action* reaffirms that the Treaties with
Indigenous Peoples must be lawfully honoured. We are all treaty peoples and are responsible
for honouring and upholding those agreements. We are grateful for the opportunity to work on
this territory and to share space with all of you.

Texts

All course readings have been made available online through Course Reserves.*

Aims and Objectives of Seminar
Infrastructures are ecologies of numerous systems, each with unique origins and goals, which are made to interoperate by means of standards, socket layers, social practices, norms, and individual behaviors. This course examines how infrastructures form, how they change, and how they shape (and are shaped by) social and cultural forces. Particular focus is paid to information and communication infrastructures, such as libraries, databases, the Internet, the World Wide Web, and cyberinfrastructures. The course includes an examination of the role of standards, such as classification systems, TCP/IP, HTML, library catalogs, and metadata standards, and changing social structures and knowledge practices, such as scientific disciplines, professional societies, and universities. The course reflects on how information infrastructures can prohibit or extend access, aggravate or ameliorate inequality or racism, facilitate closure or extend openness. Finally, the course engages with broad theories of infrastructure and foreground the usually hidden aspects of infrastructures, be they material, informational, or structural.

Pedagogy
Students' individual understandings and interests are at the center of my pedagogy. As such, the course will be heavily discussion-based and it will, at times, have an informal feel. The main objective of this course is to transform students from passive receivers of knowledge into active and autonomous cultural critics. In order to do so, students will develop critical-thinking skills and the ability to communicate their ideas effectively in the form of an analytic argument.

Assessment
Assessment is based upon a written response to a research talk, a written summary of an interview, a creative assignment, a brief written history, participation in class excursions, and a final paper. The assignments can be handed in any time during the semester but are due no later than the last day of class. This is meant to give you greater flexibility, but it also means you need to **pace your assignments** so you don't leave everything to the last minute. I strongly encourage students to delve into topics that interest them, and for the assignments to feed into their final paper topic.

Students receive a letter grade, weighted as follows: 40% for the final paper, 20% for a brief history, 10% for the creative assignment, 10% for a summary of an interview, 10% for a response to a research talk, and 10% for participation in class excursions. All assignments are due no later than the last day of class. For the final paper, please consult the grading rubric. Participation in class excursions is graded as pass/ fail. All other assignments receive a grade of 0 (incomplete), 1 (satisfactory), and 2 (good).

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* If for some reason the online course reserve system does not have the readings, links to the wrong reading, or the link is broken, first try searching the library's online catalog or Google for an electronic copy before emailing me.

Research Talk: This 500-word written response should engage at least one reading from class with one research talk from outside of class that is relevant to the course topic. I have circulated a list of pre-approved talks. I will approve additional talks as I hear about them, so please feel free to make suggestions. The assignment is gauged by writing quality and critical reflection.

Interview: This 500-word written response should engage at least one reading from class in summarizing your 30-minute interview of a librarian, archivist, information professional, or someone working in a career that you are considering. I suggest interviewing a co-worker if you currently work or intern in a library or information environment. You can also contact librarians in the UTL system or elsewhere. Interviews can be done in person or by phone, skype, etc. You decide the questions, so long as they relate to the class. I suggest preparing your questions in advance of the interview.

Get Creative! : The objective of this assignment is for you to articulate, express, describe and/or visually represent your own relationships, interests, definitions, participation in and ideas about information infrastructures. The assignment should contain a clearly articulated definition of "information infrastructure" that is consistently and obviously depicted in the work. (i.e. the definition is not only communicated to the viewer/reader/audience, but the images, representations, and/or descriptions of information infrastructure are consistent with the definition provided). Assessment is based on the care and professionalism that went into its presentation (not the "artistic skill" that went into the work or performance). Finally, the work demonstrates thought and critical engagement with the assignment, as well as evidence that the student has critically reflected on her/his own relationship(s), experiences, and embeddedness within the information infrastructures they have elected to address. Students will present their creative assignment at the start of class. Don't be afraid of a creative assignment! This is a chance to do something fun and to think outside the box.

Brief History: For this 1000-word written assignment, students will pick one information infrastructure and write a brief history of that system, technology, or "infrastructure" (broadly conceived). You will conduct research in the library, an archive, or online to find out as much as you can about the history of an infrastructure in order to ultimately evaluate the ways in which it has historically prohibited or extended access, aggravated or ameliorate inequality, and facilitate closure or extend openness. *You'll want to address who created it and how, under what conditions, and for whom. How is this infrastructure significant within the larger culture? What has its influence been? How has it evolved? As this is a history, your assignment should read as a narrative.* Because you are being asked to write up your findings as a sort of story, you are free to integrate some creative elements. However, be sure that you stay true to the literature, sources and evidence consulted: Don't bend or manipulate the information that you've uncovered, and don't make anything up (i.e. don't take *too much* creative freedom).

Participation in class excursions: We will take three excursions this semester: the Toronto Public Library Processing and Distribution Centre in Scarborough, the University of Toronto Libraries at Downsview, and a server farm. Assessment is based on attendance. Students will sign up for tours at various dates and times.

Final paper: Final papers should be 2,000 words in length, relate to the readings, and reflect the individual interests of the student. They should demonstrate strong evidence of original thinking, contain an original and sophisticated thesis, good organization (i.e. coherent, easy to follow the thread of an argument), capacity to analyze and synthesize, superior grasp of subject matter with sound critical evaluations, and evidence of extensive knowledge base. A thesis is an argument or claim with which one can reasonably disagree. This assignment is due no later than the last day of class, but students can submit it anytime before that date.

Late Assignments
I will not accept late assignments (defined as an assignment submitted after the deadline). Extensions will only be granted in the event of illness or emergency. Students will not receive credit for unexcused late assignments. Please let me know of your extenuating circumstance as soon as possible so that we can make reasonable accommodations.

Email Policy
Email inquiries about the course material are welcome. Messages should be composed carefully and professionally, including proper salutation, and should include the student's full name. The subject line should include the course number and section. Emails should be concise and state the purpose of the inquiry in the first sentence. Inquiries that do not follow this protocol or are already addressed by the syllabus will not receive replies. Please allow two business days for replies.

Academic integrity
Please consult the University's site on Academic Integrity (http://academicintegrity.utoronto.ca/). The Faculty has a zero-tolerance policy on plagiarism as defined in section B.I.1.(d) of the University's Code of Behaviour on Academic Matters (http://www.governingcouncil.utoronto.ca/Assets/Governing+Council+Digital+Assets/Policies/PDF/ppjun011995.pdf). You should acquaint yourself with the Code. Please review the material in Cite it Right and if you require further clarification, consult the site How Not to Plagiarize (http://www.writing.utoronto.ca/advice/using-sources/how-not-to-plagiarize). Cite it Right covers relevant parts of the U of T *Code of Behaviour on Academic Matters* (1995). It is expected that all students take the Cite it Right workshop and the online quiz. Completion of the online Cite it Right quiz should be made prior to the second week of classes. To review and complete the workshop, visit the orientation portion of the iSkills site: uoft.me/iskills

Accommodations

Students with diverse learning styles and needs are welcome in this course. If you have a disability or a health consideration that may require accommodations, please feel free to approach me and/or the Accessibility Services Office (http://www.studentlife.utoronto.ca/as) as soon as possible. The Accessibility Services staff is available by appointment to assess needs, provide referrals and arrange appropriate accommodations. The sooner you let us know your needs, the quicker we can assist you in achieving your learning goals in this course.

Schedule of Readings

Week 1
Introduction
Bush, Vannevar. (1945). "As We May Think" *The Atlantic*, July 1945. Available from
    https://www.theatlantic.com/magazine/archive/1945/07/as-we-may-think/303881/
Wright, Alex (2008). The web time forgot. *New York Times*, June 17. Retrieved from
    http://www.nytimes.com/2008/06/17/science/17mund.html?pagewanted=1;oref=slogin&
    r=2
In-class film: *The Man Who Wanted to Classify the World*

Week 2
What is an Infrastructure?
Berlant, Lauren. (2016). "The Commons: Infrastructures for Troubling Times." *Environment and Planning D: Society and Space* 34(3): 393-419.
Bowker, Geoff and Star, Susan Leigh. (1999*). Sorting Things Out: Classification and Its Consequences*. Cambridge, MA: MIT Press, pp. 33-50.
Carse, Ashley. "Keyword: Infrastructure: How a Humble French Engineering Term Shaped the Modern World," in *Infrastructures and Social Complexity: A Companion.*, CRESC (Taylor & Francis Ltd, 2016).

Week 3
Standards, Quantifying, Measuring
Guest Instructor: Karen McEwen
Lampland, Martha and Star, Susan Leigh. (2009). *Standards and Their Stories: How Quantifying, Classifying, and Formalizing Practices Shape Everyday Life*. Ithaca: Cornell University Press, pp. 3-24.
Egyedi, Tineke. (2001). "Infrastructure Flexibility Created by Standardized Gateways: The Cases of XML and the ISO Container." *Knowledge, Technology, and Policy* 14(3), pp. 41-54.
Gould, Stephen, Jay. (1981). *The Mismeasure of Man*. New York: Norton, pp. 105-141.
Murphy, Michelle. (2017). *The Economization of Life*. Durham, NC: Duke University Press, pp. 59-72.

Week 4
Libraries
Visit Downsview; consult sign-up sheet

Schnapp, Jeffrey and Battles, Matthew. (2014). *The Library Beyond the Book*. Cambridge, MA: Harvard University Press, pp. 14-53.

Drabinski, Emily. (2017). "Standard Practice: Libraries as Structuring Machines." *Parameters: Knowledge Under Digital Conditions*. Available at http://parameters.ssrc.org/2017/07/standard-practice-libraries-as-structuring-machines/

Drabinski, Emily. 2013. Queering the catalog: Queer Theory and the politics of correction. *Library Quarterly* 83: 94-111.

Duarte M. and M. Belarde-Lewis. 2015. Imagining: Creating Spaces for Indigenous Ontologies. *Cataloging & Classification Quarterly* 53: 677-702

Interview with Barbara Tillett. August 9, 2006. Retrieved from http://libraryjuicepress.com/blog/?p=115

Week 5

Scientific Infrastructures & Scholarly Publishing

Delfanti, Alessandro. (2017). "Evil Scholarly Publishing." *Cultural Anthropology*. Available at https://culanth.org/fieldsights/1109-evil-scholarly-publishing

Gitelman, Lisa. (2014). "Searching and Thinking about Searching JSTOR." *representations* 127(1): 73-82.

Amsden, David. (2013). "The Brilliant Life and Tragic Death of Aaron Schwartz." *Rolling Stone*, February 15, 2013. Available at http://www.rollingstone.com/culture/news/the-brilliant-life-and-tragic-death-of-aaron-swartz-20130215

Philip, Kavita. (2005). "What is the Technological Author? The Pirate Function and Intellectual Property." *Postcolonial Studies* 8(2): 199-218

Motillaro, Nicole. (2016). "UofT Heads 'Guerilla Archiving Event' to Preserve Climate Data Ahead of Trump Presidency." CBC News, December 14, 2016. Available at: http://www.cbc.ca/news/technology/university-toronto-guerrilla-archiving-event-trump-climate-change-1.3896167

(Optional) Day, Ron. (2014). *Indexing It All: The Subject in the Age of Documentation, Information, and Data*. Cambridge, MA: MIT Press, pp. 35-58

Week 6

Search/ Database

Visit Toronto Public Library Processing and Distribution Centre; consult sign-up sheet

Kaplan, Frederic. (2014). "Linguistic Capital and Algorithmic Mediation." *representations* 127(1): 57-63.

Rosenberg, Daniel. (2014). "Stop, Words." *representations* 127(1): 83-92.

Noble, Safiya Umoja. (2013). "Google Search: Hyper-Visibility as a Means of Rendering Black Women and Girls Invisible." *InVisible Culture: An Electronic Journal of Visual Culture* 19. Available at: http://ivc.lib.rochester.edu/google-search-hyper-visibility-as-a-means-of-rendering-black-women-and-girls-invisible/

Ziewitz, Malte. (2017). "Shady Cultures." *Cultural Anthropology*. Available at https://culanth.org/fieldsights/1114-shady-cultures

Consumer Watchdog. (2010). "Traffic report: How Google is squeezing out competitors and muscling into new markets." Available at:

http://www.consumerwatchdog.org/resources/TrafficStudy-Google.pdf

Hayles, Katherine. (2012). *How We Think: Digital Media and Contemporary Technogenesis*. Chicago: University of Chicago Press, pp. 171-198

Reading Week: February 18 – 22

Week 7
Infrastructure's Labour

Noble, Safiya Umoja. (2016). "A Future for Intersectional Black Feminist Technology Studies." *Scholar & Feminist Online* 13(3) – 14(1). Available at http://sfonline.barnard.edu/traversing-technologies/safiya-umoja-noble-a-future-for-intersectional-black-feminist-technology-studies/

Roberts, Sarah. (2016). "Digital Refuse: Canadian Garbage, Commercial Content Moderation, and the Global Circulation of Social Media's Waste." Available at http://ir.lib.uwo.ca/cgi/viewcontent.cgi?article=1014&context=commpub

Amrute, Sareeta. (2016). *Encoding Race, Encoding Class: Indian IT Workers in Berlin*. Durham, NC: Duke University Press, pp. 86-107.

Downey, Greg. (2001). "Virtual Webs, Physical Technologies, and Hidden Workers: The Spaces of Labor in Information Internetworks." *Technology and Culture* 42(2): 209 – 235.

Week 8
The Internet
Visit Server Farm; consult sign-up sheet

Starosielski, Nicole. (2015). *The Undersea Network*. Durham, NC: Duke University Press, pp. 26-63.

Duarte, Marisa Elena. (2017). *Network Sovereignty: Building the Internet Across Indian Country*. Seattle, WA: University of Washington Press, pp. 9-34.

Losh, Elizabeth. (2017). "All Your Base Are Belong to Us: Gammergate and Infrastructures of Online Violence." *Cultural Anthropology*. Available at https://culanth.org/fieldsights/1116-all-your-base-are-belong-to-us-gamergate-and-infrastructures-of-online-violence

Nakamura, Lisa (2008). "Alllooksame? Mediating Visual Cultures of Race on the Web." *Digitizing Race: Visual Cultures of the Internet*. Minneapolis, MN: University of Minnesota Press, pp. 70-94

Watch: "Server Farms," The National. https://www.youtube.com/watch?v=sc2cxSMxpIQ

Watch: "Seeing the Internet in Real Life." The Daily 360, *New York Times*. Available at https://www.nytimes.com/video/multimedia/100000005078543/seeing-the-internet-in-real-life.html

Week 9
Interface as Infrastructure

Drucker, Johanna. *Graphesis: Visual Forms of Knowledge Production*. Cambridge, MA: Harvard University Press, pp. 138 – 179.

Tonkinwise, Cameron. (2011). "A Taste for Practices: Unrepressing Style in Design Thinking." *Design Studies* 32(6): 533-545.

Schull, Natasha Dow. *Addiction by Design: Machine Gambling in Las Vegas*. Princeton, NJ: Princeton University Press, pp. 166-181.

Ellcessor, Elizabeth. (2016). *Restricted Access: Media, Disability, and the Politics of Participation*. New York: NYU Press, pp. 61-87.

Watch: Jacob Gaboury. "Grab, Dump, Capture: Screenshot Genealogies." https://www.youtube.com/watch?v=Yr8JJU8jtZc

Week 10
Data
Cheney-Lippold, John. (2017). *We Are Data: Algorithms and the Making of Our Digital Selves*. New York: NYU Press, pp. 37-92.

O'Neill, Cathy. *Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy*. New York: Crown Books, pp. 141-178.

Paris, Britt S. and Pierre, Jennifer (2017). "Bad Data." *Cultural Anthropology*. Available at https://culanth.org/fieldsights/1107-bad-data.

Browne, Simone. (2015). *Dark Matters: On the Surveillance of Blackness*. Durham, NC: Duke University Press, pp. 131-159.

Watch: Shaka McGlotten, "Black Data." Available at http://sfonline.barnard.edu/traversing-technologies/shaka-mcglotten-black-data/

Week 11
Smart Cities
Halpern, Orit, et al. (2013). "Test-bed Urbanism." *Public Culture* 25(2): 272-306.

Mattern, Shannon. (2016). "Instrumental City: The View from Hudson Yards, circa 2019." *Places Journal,* April 2016. Available at https://placesjournal.org/article/instrumental-city-new-york-hudson-yards/

Halpern, Orit, et al. (2017). "The Smartness Mandate: Notes Toward a Critique." *Grey Room* 68: 106-129. Available at http://www.greyroom.org/issues/68/72/the-smartness-mandate-notes-toward-a-critique/

Valverde, Mariana and Flynn, Alexandra. (2018). "Mystery on the Waterfront: How the Smart City Allure Led a Major Public Agency in Toronto into a Reckless Deal with Big Tech." December 3, 2018. Available at: https://cfe.ryerson.ca/blog/2018/12/mystery-waterfront-how-smart-city-allure-led-major-public-agency-toronto-reckless-deal

Week 12
Conclusion
Final paper due
Any remaining assignments due