

Urban Media Archaeology

NMDS 5539 / CRN 6444

Wednesdays 6:00-8:40pm

66 5th Ave, Room 005

Tech Associate: **Rory Solomon**

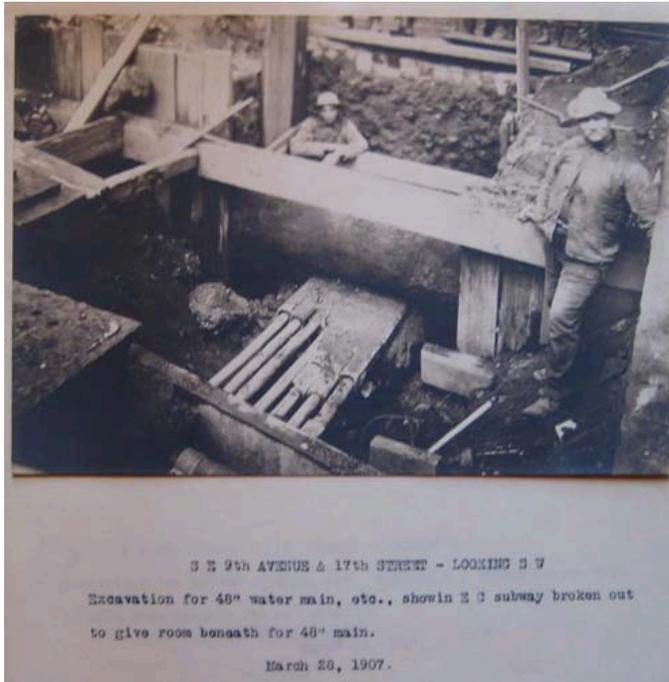
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Today's city is layered with screens of all shapes and sizes and stitched together with a web of wireless networks, but woven into these modern media spaces are other, older urban media networks and infrastructures – many of which have laid the foundation for our newer media. This project-based course is dedicated to excavating and mapping – both theoretically and practically – the layers of mediation that have shaped urban forms and informed urban experiences through several key epochs in communication history, from the oral culture of ancient Athens to the television age. Each student, alone or in pairs, will conduct an urban media excavation – exploring, for example, how pneumatic tubes facilitated the delivery of mail in late-19th century New York, how the rise of the film industry shaped early 20th-century Los Angeles, or how television cables served as the nervous system of new mid-20th-century suburbs. Rather than presenting this work as atomized individual projects, however, everyone will plot their sites and networks,

and post relevant archival media, to a collaboratively designed interactive media map. Part of the class will be devoted to designing the platform by analyzing which presentation format is best suited for effectively displaying these layers of urban mediation and exploring the synergies between individual students' projects. The class will lay historical and theoretical groundwork for examining media and the urban environment, and also introduce students to the fields of media archaeology and the digital humanities. While students will participate in the creation of interactive media maps, this hybrid course will have a strong theory component.

COURSE MATERIALS

All readings will be posted as pdfs to the class website: <http://www.wordsinspace.net/urban-media-archaeology/2011-fall/>. You'll be prompted to enter the **user name** _____ and **password** _____.

YOUR CONTRIBUTIONS

Overview	Process Blogs	20%
	Map Critique/Creation	15%
	Mapping Project	
	Individual Project Proposal	10%
	Individual Research Dossier + Draft Map	20%
	Final Map	30%
	Self and Group Assessment	5%

Attendance and Participation

We need everyone to show up regularly, on-time, and prepared to ensure that we have sufficient time for discussion and that everyone is contributing meaningfully to the class exhibition project. You will be permitted **one excused absence** (“excused” means that you must have contacted me *prior* to class to inform me of your absence) for the semester. Additional excused absences – and any unexcused absences – will negatively affect your grade. **More than three absences**, excused or unexcused, will result in failure of the course; if you anticipate needing to miss several classes, you are advised to drop the course. A pattern of late arrivals is likewise detrimental.

I do not require you to complete weekly reading responses, as I do in most of my other graduate courses, simply because your work on the individual and group projects should keep you plenty busy. That said, I still do *encourage* you to take time before class to **annotate the weekly readings, abstract them, and reflect** on how they contribute to your understanding of the overarching themes of the course and to your own research process.

Process Blogs

We’ll be thoroughly and publicly [documenting our process](#) — the break-throughs, the triumphs, the frustrations, the dead-ends. This documentation is in keeping with the Digital Humanities’ mission to [promote transparency](#) – not only for the benefit of our collaborators in this class, but also in an attempt to welcome other publics into the scholarly process. Our class will be helping to develop, in collaboration with Parsons designers and several other urban-themed classes and projects around the university, a new mapping tool, the Urban Research Toolkit; we intend for this map to serve as a platform for future urban-related faculty and student work at The New School. Therefore, we need to think of our work as laying a foundation. In our project documentation we can not only explain how we’ve developed the tool throughout the fall semester, but also make recommendations for those who come after us, encourage others to conduct new research on specific topics that will bridge existing student projects; direct our successors to promising collections we found in local archives, but just didn’t have the time to review; make recommendations for future tech developers to add new features to the platform so that it’s better able to accommodate the methods we want to employ; etc.

Each student will contribute to our collective “process blog.” If you already have your own blog, you’re welcome to post your UMA work to your own blog, but *we’ll need to work out how to aggregate all relevant external blog posts to our central UMA blog*. All other students are welcome to post directly to the UMA blog.

If you have an epiphany, if you stumble upon an amazing special collection or interview subject, if you find yourself questioning your topic selection or your mapping techniques, if you have a cartographic break-through, if you hit a brick wall – if anything significant happens that you think offers an occasion for “critical self-consciousness” (Johanna Drucker 2004) or an opportunity to “illuminate the shadowy process of critical thinking, encouraging readers not only to digest finished works, but also to learn from and evaluate the mechanisms of their creation” (Avi Santo and Christopher Lucas 2009) – blog it, please. Each student will be expected to post regularly – **at least five times throughout the semester, and at least once every three weeks**; at least one post should reflect on your finished, or near-finished, semester project. Your posts should be **substantial (roughly 300 words)** and, if appropriate, should include relevant media. Make sure to keep the tone professional – not *confessional*. Please make sure, too, to **address the relevance of the class readings and in-class discussions and activities**. Your blog contributions are worth **20% of your final grade**.

Map Critique And Creation

Because our final project will be an interactive map, we'll dedicate some time in most of our classes to presenting and critiquing several (canonical/ exemplary/ experimental/ overwrought/ elegant/ etc.) maps in a variety of formats, to see what they do right and wrong, what they illuminate and obfuscate, how they integrate form and content effectively and poorly, and what lessons we can take away from them and apply, or avoid, in our own projects.

On the course website we'll maintain an "atlas" of relevant mapping projects, from which you can choose one project to critique. You're also welcome to propose additions to the collection. You're encouraged to **choose a map that both pertains to the critical issues raised in the week's readings and raises practical questions** that we'll need to address as we create our own map(s). Please consult with the other presenters for the week to work out who's chosen which projects.

Your **ten-minute presentation** should consist of two parts: (1) a critique and (2) a critical-creative application *prototype*. The **critique** should focus on a single mapping project and should address some of [these issues](#). As the weeks progress, and as we explore more and more mapping projects and hone our methods for critical evaluation, we'll generate a list of "best practices" or an **evaluation rubric** (see [this](#)) with which we can critique and refine our *own* project at the end of the semester. Your **application** is a critical-creative attempt to apply to your *own* research project the same effective and/or ineffective techniques used in the map you've critiqued. You might choose to exaggerate the failures of that map by creating a parody – or you might choose to blend in helpful features from some of the other maps in the atlas in order to generate mapping techniques that might aid in your own work. Be sure to identify what projects inspired you and why, and how and where we can see those projects' influence in *your* map. Your application can take virtually any form and format – from a [quilted map](#) to a [hand-dissected map](#) to an [audio map](#). Keep in mind that this is only a *prototype* – a rough sketch, a maquette, a "napkin drawing"; we're more concerned in this context with the ideas behind your project than with your execution.

Before class begins, **post your 600- to 900-word text** – which should encompass both your critique and the explanation of your application exercise – along with documentation of your application, **to our class blog**. In class, you'll have **10 to 12 minutes** for your presentation; please save five of those minutes for discussion. And please be sure to have presentation media loaded/booted/hung/distributed before class begins so we can start on time. Your review is worth **15% of your final grade**.

Individual Project Proposals

Everyone will be responsible for completing an individual research/production project — but you should frame and execute your project in light of how it might eventually "speak to" the others. We're building a *group map*; not a platform hosting 15 atomized mapping projects. In the end, we're looking for synergies, for convergences and divergences, between the projects; for projects to form into thematic clusters; and for a "larger story" that the collective class project can tell. You'll also need to choose and frame your project in lights of how it will lend itself to presentation not in a traditional typewritten text, but in a multimodal, online, *spatial* format. Ask yourself: [what kind of arguments](#) can an interactive map help me make, that I couldn't make in another format?

You should begin thinking about potential topics early in the semester. You're welcome to explore project ideas on the UMA website or in conversation with me and your classmates. Before our class on **October 5** I'd like for you to submit **via Google Docs a formal 600- to 900-word project proposal** (you'll then post your revised proposal to our **course blog**). This proposal must include (1) a topic description, problem statement, or research question; (2) a discussion of your topic's relevance, significance, and/or timeliness (in other words, why is it worth studying, and why now?); (3) a discussion of why your project lends itself to *spatial* argumentation (i.e., why *map* it?); (4) a tentative bibliography containing at least ten sources, half of which must be scholarly sources; and (5) types and formats of media or

artifacts you anticipate gathering or creating and posting to URT. You'll be expected to deliver a **short, informal presentation** in class on the day your proposal is due. You'll have an opportunity to revise and resubmit the proposal if necessary. Your proposal is worth **10% of your final grade.**

Individual Research Dossier & Draft Map

Don't think of these two components as separate responsibilities. Instead, consider the dossier the collection of secondary and primary research material from which you've drawn to construct your map. It's essentially your "multimodal" notebook or research database; it evidences all the "behind-the-scenes" work you've done that either has or hasn't manifested itself on your map. The dossier could contain abstracts of relevant secondary sources you've read/viewed/listened to; scans of original documents you've discovered; clips of relevant photos, videos, audio recordings, etc., you've either collected or created; etc. **It's up to you to determine, depending upon the types of material you've been collecting and what system you've been using to collect it, how to best share this dossier with me.** The dossier you submit need not be comprehensive; you can choose a representative sample of material that demonstrates the breadth of your research and that illustrates the emerging themes in your critical understanding of your research topics.

Ideally, you will have been maintaining your dossier throughout your research process. You should be thoroughly **citing and annotating** all your material. And you should be experimenting with various **organizational schemes** (thematic, formal, chronological, etc. – whichever schemes make most sense for your particular project and advance the "spatial argument" [you think] you want to make on the map).

With your dossier, you'll be presenting a **draft of your individual project map.** We'll decide in class how to best provide feedback on your work so that you can both refine your individual project *and* create possibilities for connection with other students' projects.

We'll be **meeting to talk about your dossiers in-person.** You should be prepared to (1) briefly summarize and critically reflect on what you've discovered through your research – in particular, how your research topic(s) pertain to the themes of our class – and how you've sifted through and organized your research material; and (2) how that research informed the cartographic arguments you'll be making. You'll be signing up for 20-minute meetings during the **week of November 16.** The dossier and map are worth **20% of your final grade.**

Final Map

As we learn more about one another's projects, and as we add more material to URT, patterns, we hope, will start to emerge, and opportunities for synergy will present themselves.

If all goes well, we'll form "clusters" based on shared topical (e.g., locations of mass entertainment, telecommunications infrastructures, paper-based media networks, sites of public gathering and protest), geographic (e.g., various media networks' histories in the East Village or the Bronx, the mediation of Times Square) or theoretical (e.g., uneven distribution of media resources, alternative media and grassroots politics, the "remediation" of communication infrastructures) interests. We'll then work collectively to link together our individual projects, to explain their convergences and divergences, to *tell* the "larger story" of New York's media history that our individual maps, considered altogether, *show.* Again, we'll need to consider what *kinds of arguments* a map platform allows us to make, and what *modes of argumentation* would best serve our purposes. How can we use the maps form and functions to support our intellectual "content"?

You should make sure to **document your decision-making process** – and apply our collectively designed "evaluation rubric" – on our course blog; this documentation work should be shared by all members of your cluster. (Please make sure to label or tag your posts appropriately, so we can associate them with your project.) The map will be **presented in our final class, to which we will invite a group of external critics, on December 14.** All students are expected to be present and to participate. I will provide more details on

the final presentation as the end of the semester draws near. The final map is worth **30% of your final grade**.

In addition, by **Monday, December 19**, at 5pm, you are expected to submit, **via Google Docs**, a **300- to 600-word group and self assessment**. You should assess your own and the class-at-large's success in meeting our evaluative criteria, discuss your work process, and, if applicable, address the contributions of classmates with whom you worked closely. Your assessment is worth **5% of your final grade**. These may seem like small stakes, but remember that 5% can make the difference between a B+ and an A-.

Submitting Work Via Google Docs

You're welcome to either create your documents *in* Google Docs, or to create them as Word or pdf files and *upload* them to Google Docs without converting them to the GD format. I prefer working with Google Docs and Word docs, because I can add margin comments on particular passages *and* type summary comments at the end of your document.

Please **title your documents** so they're easily identifiable: UMA_[YourLastName]_[AssignmentName] (e.g., UMA_Mattern_ProjectProposal). When you're ready to "submit," click on the "share" button in the top-right of the screen, make sure the access settings are set to "Private," and add my email address in the "add people" field. Note that Google Docs displays your submission date and time, so I can ensure that your work has been posted in its final form by the assignment deadline!

Academic Dishonesty

All students are expected to familiarize themselves with the University's academic honesty policy; see "[Academic Honesty](#)" on the Media Studies department website. Because our semester project is a collective one, any acts of academic dishonesty reflect poorly not only on the perpetrator(s), but also on the class and the instructor. Academic dishonesty will result in automatic failure of the course.

Late Work

All assignment deadlines are listed on the syllabus. Because we are working collaboratively this semester, it is important that we all move at the same pace. Late work will be penalized, and extensions will be granted only rarely, and only after consulting with me well in advance of the assignment deadline.

A student who has not submitted all assigned work by the end of the semester does not receive an "Incomplete" by default. "Incompletes" are assigned only in extreme circumstances, and require that the student consult with me before the end of the semester and sign a contract obligating him or her to complete all outstanding work by a date that we agree upon.

PUNCH LIST

Please note that we will not discuss all assigned readings in depth in class. This does not mean it is not worth your while to read them. These texts have been chosen because of their potential utility in your projects – so even if we don't debate the reading in-class, these texts can, and should, still inform the work you're doing throughout the semester.

- Week 1: August 31 **Introductions & Course Overview**
- CASE STUDIES** Shawn Micallef, "[Toronto's Corridor of Power](#)" *Spacing Toronto* (October 26, 2008).
Nicole Starosielski, "[Surfacing](#)"
Lisa Parks, "[Earth Browsing: Satellite Images, Global Events and Visual Literacy](#)" O'Reilly
Where 2.0 Conference (May 14, 2008) [video]
Helki Frantzen & Center for Urban Pedagogy, "[The Internet is Serious Business](#)" [video]
[mammoth](#) blog
- MAPS** Brian McGrath, Mark Watkins, Akiko Hattori, Lucy Lai Wong, [Manhattan Timeformations!](#)
- Week 2: September 7 **Tubes & Wires, Cables & Waves²**
- FIELD TRIP** Tour of cellphone infrastructure with architect [Michael Chen](#) and Justin Snider. I will contact you via email w/ the rendezvous info. If we finish early, we'll probably meet somewhere nearby to continue the conversation.
- READINGS** Kate Ascher, "Communications" *The Works: Anatomy of a City* (New York: Penguin, 2005): 122-147.
Shannon Mattern, "Puffs of Air: Communicating by Vacuum" In John Knechtel, Ed., *Air* (Cambridge, MA: MIT Press, 2010): 42-56.
Stephen Graham and Simon Marvin, "Approaching Telecommunications and the City" and "Urban Physical Form" In *Telecommunications and the City: Electronic Spaces, Urban Places* (New York: Routledge, 1996): 79-122, 312-336. [These selections may not make for the most exciting reading, but they do identify myriad theoretical approaches and analytic frameworks that you could apply in your own study of media infrastructures.]
Andrew Blum, "[Netscapes: Tracing the Journey of a Single Bit](#)" *Wired* (December 2009).
Michael Chen, "[Signal Space](#)" *Urban Omnibus* (July 6, 2011).
- Week 3: September 14 **Putting the Urban into Media Archaeology³**
- ACTIVITY** Looking at Past Student Projects
- GUEST** Stephen Taylor, Fall 2010 UMA Student, "Edison and the Early Electrification of New York City" – Show front end *and* behind-the-scenes, e.g., record types, fields, etc.
- READINGS** Erkki Huhtamo and Jussi Parikka, Eds., Table of Contents and "Introduction: An Archaeology of Media Archaeology" In *Media Archaeology: Approaches, Applications, and Implications* (Los Angeles: University of California Press, 2011): 1-21.
Jussi Parikka, Interview with Garnet Hertz, "[Archaeologies of Media Art](#)" *CTheory* (April 1, 2010).
Friedrich A. Kittler, "The City Is a Medium" *New Literary History* 27:4 (1996): 717-729.
Vyjayanthi Rao, "Embracing Urbanism: The City as Archive" *New Literary History* 40:2 (Spring 2009): 371-383.
Kazys Varnelis, "Centripetal City" *Cabinet* 17 (Spring 2004/2005): 27-33.

- Week 4: September 21 **Digital Humanities & Assessment Rubrics⁴**
- READINGS** Tara McPherson, "Introduction: Media Studies and the Digital Humanities" *Cinema Journal* 48:2 (Winter 2009): 119-123.⁵
- UCLA Digital Humanities & Media Studies, "[Digital Humanities Manifesto 2.0](#)" (2009).
- Shannon Mattern, "[Evaluating Multimodal Student Work](#)" *Wordsinspace.net* [blog post] (August 11, 2010).
- Jeanne Haffner, "Things Visible and Invisible" *Architecture Boston* (Winter 2009): 34-41.
- Todd Presner, "[HyperCities: A Case Study for the Future of Scholarly Publishing](#)" In Jerome McGann, Andrew Stauffer, Dana Wheelles, & Michael Pickard, Eds., *Online Humanities Scholarship: The Shape of Things to Come*. Proceedings of the Mellon Foundation Online Humanities Conference (Rice University Press, 2010). [We'll test this tool in class on Oct. 12.]
- Shannon Mattern, "[Critiquing Maps](#)" *Wordsinspace.net* [blog post] (August 29, 2010).⁶
- IN-CLASS CRITIQUE** Group critiques of multimodal projects, TBD – likely to include examples from [Vectors](#), [Kairos](#), [Sensate](#)

September 28 NO CLASS: ROSH HASHANAH

- Week 5: October 5 **Research Strategies**
- ACTIVITY** Presentations of Project Proposals
- READINGS** Kellen Archives, "[Introduction to Archival Research](#)."
- Yale University Library, "[Using Manuscripts and Archives: A Tutorial](#)": "Introduction," "Getting Started," "Finding Sources: Tools For Sources Outside Yale"
- Shannon Mattern, "[From Post Offices to Radiograms: Local Primary Resources on Urban Media History](#)" *Wordsinspace.net* [blog post] (July 20, 2010).

- Week 6: October 12 **Mapping Along X, Y, and Z Axes⁷**
- URT: Creating Your Subprojects**
- IN-CLASS CRITIQUE** [HyperCities](#) + [Stanford Spatial History Project](#)
- FILM** Charles and Ray Eames, *Powers of Ten*
- READINGS** Denis Wood and John Fels, Excerpts from "The Nature of Maps" In *The Natures of Maps: Cartographic Constructions of the Natural World* (Chicago: University of Chicago Press, 2008): 6-16.
- James Corner, Intro, "The Agency of Mapping," "Maps and Reality" & "Mapping Operations" from "The Agency of Mapping: Speculation, Critique and Invention" In Denis Cosgrove, Ed., *Mappings* (London: Reaktion, 1999): 213-217, 221-225, 229-231.
- Alison Sant, "[Redefining the Basemap](#)" *Intelligent Agent* 6:2 (n.d.).
- Jeremy Hight, "[Rhizomatic Cartography: Modulated Mapping and the Spatial Net](#)" *NeMe* (May 5, 2009).
- Scan through some of my other [bookmarked sites](#) on mapping

The second half of the semester is dedicated primarily to (1) map critiques, (2) self-directed reading and research, and (3) hands-on work. We may need to make changes to the syllabus so our in-class time can best support your individual and collaborative work. I ask that you please be flexible and responsive.

Week 7: October 19 **Mapping Platforms & Politics**

- GUEST** [Matt Knutzen](#), Assistant Chief, Map Division, New York Public Library
- MAPS** Student Presentations: Choose from Atlas on Class Website
- READINGS** Anne Kelly Knowles, “GIS and History” In Anne Knowles, Ed., *Placing History: How Maps, Spatial Data, and GIS are Changing Historical Scholarship* (Redlands, CA: ESRI Press, 2008): 1-26.
- We may not discuss the following, but they’re still worth your time!*
- Jason Farman, “Mapping the Digital Empire: Google Earth and the Process of Postmodern Cartography” *New Media & Society* 12:6 (September 2010): 869-888.
- Timothy Erik Strom, “[Space, Cyberspace and Interface: The Trouble with Google Maps](#)” *m/c journal* 14:3 (2011).
- Section 2 of the [OpenStreetMap Wiki](#) + [OpenStreetMap](#)

Week 8: October 26 **URT: Spatialized Data Modeling; Plotting Points, Routes & Areas**

- MAPS** Student Presentations
- READINGS** “[Data Modeling](#),” *Wikipedia*
- Michael F. Worboys, Hilary M. Hearnshaw & David J. Maguire, “Object-Oriented Data Modelling for Spatial Databases” *International Journal of Geographical Information Systems* 4:4 (1990): 369-383. [Some of this might be over your heads; just give it your best shot!]
- Scan through [my bookmarked](#) sites on urban archaeology and consider how one might “data model” the sites, systems, processes, represented in some of these projects.

Week 9: November 2 **Pecha Kucha & Conceptual Design Feedback**

- PREP: PECHA KUCHA** Learn about PechaKuchas [here](#). See also Olivia Mitchell’s “[Five Presentation Tips for Pecha Kucha or Ignite Presentation](#)” *Speaking About Presenting* [blog post], and check out some videos of [Ignite presentations](#). As you’ll see, PechaKucha presentations typically involve presentations consisting of 20 slides, with 20 seconds dedicated to each. In the interest of time, we’re going to limit our presentations to 12 slides at 20 seconds each.
- GUEST CRITICS** Jane Pirone, Jessica Irish & Joseph Heathcott

Week 10: November 9 **User Scenarios & Paper Prototyping**

- URT: Record Types & Fields**
- MAPS** Student Presentations
- READINGS** “[Use Case / User Scenario](#)” *Fat Purple* (February 2007).
- Gerry Gaffney, “[What Is a Scenario?](#)” *Information & Design* (2000).
- Rebecca Trump, “[Using Visual User Scenarios for Concept Generation](#)” [handout] “User-Centered Design of Interactive Experiences” class, Interactive Telecommunications Program, New York University (Spring 2006).
- Shawn Medro, “[Paper Prototyping](#)” *A List Apart* [blog post] (January 23, 2007).
- Paul Andrew, “[10 Effective Video Examples of Paper Prototyping](#)” *Speckboy Design Magazine* (June 24, 2010).
- PREP FOR CLASS** Think about what major arguments you hope to make through your project, or what stories you hope to tell. How could users navigate through your *finished* project (yes, this involves some projection into the future!) and come away having comprehended your argument or story, and achieved your desired user experience? Now, write or sketch two or three brief (one page *max*) user scenarios that tell the story of how different users might navigate through your project to achieve a particular goal. Finally, consider how you’d *actualize* that scenario on a paper prototype – a prototype not of the overall URT interface, but of a user’s concrete interaction with *your* particular project. We’ll be constructing our prototypes in class – e.g., using yarn to represent paths, scraps of paper to represent photos or other media – but if you have a particular preference for how you’d like to materially prototype your project on a paper map, you’re welcome to bring your own “crafty” materials.

Week 11: November 16 **URT: Cartographic Arguments – *Short Class This Week***
MAPS Student Presentations: Choose from Atlas on Class Website
INDIVID. MTGS Sign up for an individual 20-minute meeting to review your **research dossier and draft map**

November 23 NO CLASS: THANKSGIVING

Week 12: November 30 **Networking Nodes**
MAPS Student Presentations
Through various group exercises (e.g., “speed dating,” interviewing one another) students will explore possible connections between their own projects and their classmates’. We’ll discuss what we might learn by layering or networking these projects on the map — and what modes of presentation can help us to convey these larger, multi-project arguments.

Week 13: December 7 **Independent/Group Work & Individual Consultations**

Week 14: December 14 **Final Exhibition Presentation**

Week 15: December 19 **Peer Review & Semester Reflection**
Over the course of the semester, we’ll have collaboratively agreed upon standards for evaluation of map-based multimodal scholarship. Today we’ll critically evaluate one another’s projects based on those criteria, as if we were officially reviewing works for publication.

¹ Janet Abrams, “Clickn’n’Scrapin” In Janet Adams & Peter Hall, Eds., *Else/Where: Mapping New Cartographies of Networks and Territories* (Minneapolis: University of Minnesota Press, 2006): 112-4; Janet Abrams, “Looking for a Less Imperial Gaze” In Janet Adams & Peter Hall, Eds., *Else/Where: Mapping New Cartographies of Networks and Territories* (Minneapolis: University of Minnesota Press, 2006): 114-5.

² Kazys Varnelis, Ed., *The Infrastructural City: Networked Ecologies in Los Angeles* (Barcelona: Actar / LA Forum for Architecture and Urban Design, 2009).

³ Wendy Hui Kyong Chun & Thomas Keenan, Eds., *New Media Old Media: A History and Theory Reader* (New York: Routledge, 2006); Michel Foucault, *The Archaeology of Knowledge*, Trans. A. M. Sheridan Smith (New York: Pantheon, 1972); Geert Lovink, “[Archive Rumbblings: Interview with Wolfgang Ernst](#)” (February 2003); Siegfried Zielinski, *Deep Time of the Media: Toward an Archaeology of Hearing and Seeing by Technical Means* (Cambridge, MIT Press, 2006).

⁴ Steve Anderson, “[Regeneration: Multimedia Genres and Emerging Scholarship](#)” [white paper] Institute for Multimedia Literacy, USC;

⁵ Jussi Parikka, “Conclusions: Media Archaeology in the Digital” *Media Archaeology and the Digital* (Cambridge, UK: Polity Press, 2012) [unpublished manuscript].

⁶ Jeremy W. Crampton and John Krygier, “An Introduction to Critical Cartography” *ACME: An International E-Journal for Critical Geographies* 4:1 (2006): 11-33; [Spatial Humanities](#)

⁷ Ole Bouman, “Re:Orientation” In Janet Adams & Peter Hall, Eds., *Else/Where: Mapping New Cartographies of Networks and Territories* (Minneapolis: University of Minnesota Press, 2006): 54-57; Denis Cosgrove, “Carto-City” In Janet Adams & Peter Hall, Eds., *Else/Where: Mapping New Cartographies of Networks and Territories* (Minneapolis: University of Minnesota Press, 2006): 148-57; Brian Holmes, “Counter Cartographies” In Janet Adams & Peter Hall, Eds., *Else/Where: Mapping New Cartographies of Networks and Territories* (Minneapolis: University of Minnesota Press, 2006): 20-5; David Macaulay, excerpts from *Underground* (Boston: Houghton Mifflin, 1976): 46-47, 88-91, 110-111; John Pickles, *A History of Spaces: Cartographic Reason, Mapping and the Geo-Coded World* (London: Routledge, 2004); Seth Robbins and Robert Neuwirth, *Mapping New York* (London: Black Dog Publishing, 2009); Denis Wood, *Everything Sings: Maps for a Narrative Atlas* (Los Angeles: Siglio, 2010); Denis Wood, *The Power of Maps* (New York: Guilford Press, 1992); Denis Wood and John Fels, Excerpts from “The Propositional Logic of the Map” In *The Natures of Maps: Cartographic Constructions of the Natural World* (Chicago: University of Chicago Press, 2008): 26-28, 31-32.