We live amidst real-time data flows, with sensors measuring everything from air quality to traffic, with our own cell phones yielding information about our whereabouts and activity levels, with buildings reporting on their own energy consumption and maintenance. This urban “intelligence” ostensibly allows for the optimization of our environments and our selves – for the production of “smart cities” and smart citizens. In this hybrid studio we’ll examine how the methods of data science shape our civic values and urban imaginaries, and condition the work of urban design and administration; and we’ll assess the consequences – for the material environment, for urban citizenship, for quality of life, etc. – when data and efficiency drive design and development decisions. Taking nearby Hudson Yards as our case study, we’ll explore not only how “smartness” is operationalized in such new urban developments, but also what other kinds of intelligence have long been present in our cities. To evaluate Hudson Yards’s smarts, we’ll develop a collection of “urban intelligence test kits” – IQ tests, guidebooks, measurement instruments, field kits, etc. – to evaluate how human and machine logics, intelligences, and values are integrated and negotiated on this urban test-bed.

**The course is supported by a generous grant from the Provost’s Innovations in Education Fund, which will cover necessary costs for specialized training, design consultation, fabrication, and publication of our results, and our work will be featured in a special “urban interfaces” issue of MIT Press’s *Leonardo Electronic Almanac*.**

Our Tools

This is our class website: [http://www.wordsinspace.net/urbanintel](http://www.wordsinspace.net/urbanintel)

Here you’ll find our most up-to-date schedule, pdfs or links for all the readings, catalogues of our work, etc. Most of our resources are available on the open web, but some materials are copyrighted; to access those, you’ll be prompted to enter a username and a password: student | seecritfilez
Your Contributions

ATTENDANCE, PARTICIPATION + IN-CLASS LAB ACTIVITIES

We need you to show up on time, having completed the readings, and prepared to share your experience, expertise, interests, and ideas. We hope you’ll engage constructively and respectfully with your classmates.

You will be permitted two excused absences (“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. Your consistent presence and regular, constructive contributions – including your participation in our in-class labs – account for 20% of your final grade.

PRECEDENT ANALYSIS

We’ll be exploring precedent projects throughout the semester, and you’ll be asked to review a whole bunch of examples for class on March 8. Each of you should choose one project – a kit, plan, performance, method, etc., that has some epistemological interest at its core (either featured in the readings for this week or inspired by the readings) – for analysis. Assess its (1) subject matter or purview; (2) its underlying epistemology and methodology; (3) how its format or mode of execution serves, or fails to serve, its purposes; and (4) its weaknesses or unexplored critical dimensions.

Before class on March 8, please post your ~600-word analysis (with links and illustrations!) to our class website, and be prepared to share your work in a five-minute (max!) informal in-class presentation. Then, over the course of the next week, please review your classmates’ posts and offer thoughtful, substantial (at least a couple sentences!) responses to two.

Your precedent analysis and two follow-up comments account for 10% of your final grade.

TEAM PROJECT PLAN + ENVIRONMENTAL SCAN

Your team is responsible for submitting to Shannon, Jack, and Kate, by April 5 via Google Drive, a 1500-2000-word project plan and environmental scan addressing the following:

• your design concept and the critical ideas informing your project
• the various stakeholders in those critical concerns
• the primary audiences / user groups for your “kit,” and its desired impact on each
• the “tone” of your project (realist, activist, speculative, functional – in other words: is it meant to work in the “real world,” or is it a utopian/dystopian/jokey thought experiment?)
• the format(s) / material properties of your “deliverable,” and how that/those format(s) serve(s) your larger goals
• the environment(s) in which user groups will engage with your kit
• your kit’s functionality – or, how it will ideally work
• precedent projects (include multimedia documentation, if appropriate)
• relevant critical literature
• a tentative development plan + discussion of team members’ roles

These bullet points needn’t dictate the organization of your plan; you’re free to determine the structure of your document, so long as it addresses the above issues and any others that you regard as pertinent.

Your team project plan and environmental scan account for **20% of your final grade.**

**TEAM BUDGET**

We have a generous budget for this class, and a good portion of that budget will be allocated to individual groups for construction materials, equipment, tutorials, and other costs associated with the completion of your projects. Dirk Van Stee, NSPE’s Assistant Director for Budget and Operations, will visit our class on March 15 to discuss budgeting and purchasing policies and procedures. Your team must then identify all costs associated with your final project and **submit to Shannon and Jack, via Google Drive,** a comprehensive, itemized budget (formatted in accordance with Dirk’s recommendations) **on or before April 12,** at which point the team will receive a **declining-balance credit card** to purchase necessary supplies and services. Team members are responsible for reconciling all expenses as they are incurred.

Your team budget accounts for **10% of your final grade.**

**FINAL PROJECT**

Each team will develop a “test kit” (broadly conceived!) composed of instruments, interfaces, tools, texts, etc., through which we could evaluate various forms of “urban intelligence.” Throughout the semester we’ll examine the myriad human and non-human intelligences that are built into our smart cities, and that have historically been built into our cities over the *longue durée.* We’ll also examine different approaches to operationalizing and evaluating intelligence, including scientific, administrative, designerly, and artistic approaches to monitoring and testing smart cities. Your challenge will be to choose an epistemological and methodological orientation and develop a “test kit” to evaluate – earnestly, speculatively, or parodically – certain place-based urban intelligences.

Because our work will be featured in a special “urban interfaces” issue of MIT Press’s *Leonardo Electronic Almanac,* all teams will be responsible for submitting carefully edited and formatted documentation of their final projects. Specifications will be developed by our UI Graphic Design Consultant.

Final projects are due on **May 10,** and account for **30% of your final grade.**
TEAM ASSESSMENT

By noon on Friday, May 12, each student must submit to Shannon, Jack, and Kate, via Google Drive, a 600- to 900-word evaluation of their team’s overall accomplishments and each team member’s individual contribution. Your assessment should include the following:

• a brief restatement of what your team set out to accomplish and an evaluation of whether your team met those initial goals, or how your goals might have evolved over the course of the semester
• a brief discussion of your group’s dynamic and work process, and how they might have evolved over the course of the semester
• a brief discussion of each team member’s contribution (including your own), including any challenges individual members might have presented
• any additional big-picture reflections or minor details you’d like us to know.

Your team assessment accounts for 10% of your final grade.

LEARNING OBJECTIVES

Throughout the semester, we’ll:

• Learn about various theories of “intelligence,” examine how epistemologies are operationalized through different methodologies and materialized in design and administrative processes, and consider how they shape our urban imaginaries
• Explore the connections between research methods, design strategies, politics, and cultural values
• Assess the politics and economics of data, the ethics of sensing and monitoring technologies, the environmental impacts of design, and the qualities of cities that make them livable and inclusive
• Model, and advocate for, a more inclusive, interdisciplinary, methodologically varied, critical approach to city-building – particularly in an age characterized by the fetishization of data, the reification of algorithms, and the privileging of growth and efficiency as prime urban and civic virtues.
January 25: Enlightened Urban Futures

To be enjoyed/endured in class (you needn't review in advance!):

- Excerpts from “World’s Smart Cities: San Diego,” National Geographic Channel [video: 0:44].
- Cisco’s Smart + Connected Communities
- IBM Smarter Cities
- Kohn Pedersen Fox’s Urban Interface [ppt]
- The U.S. Department of Transportation’s 2016 Smart City Challenge Finalist Pitches
- Brian Petchers, Tim Pierson, Chloe Sorvino and Kirsten Taggart, Forbes’ Hudson Yards video (May 31, 2016) [:02:26].
- Hudson Yards’ promo videos
- Sara Blom and Dorien Zandbergen, Smart City: In Search of the Smart Citizen (2015) [video: 1:04].
- Liam Young and Tim Maughan, In the Robot Skies (2016) [film teaser: 1:38].
- Wes Goatley and Georgina Voss, Ground Resistance (2016) [exhibition].
- Google Urbanism
- Keller Easterling’s Presentation Images
- The (much debated) Data – Information – Knowledge – Wisdom pyramid

February 1: Visit to Alphabet’s Sidewalk Labs @ Hudson Yards

Field Trip (4:30 – 6:30): Sidewalk Labs, 10 Hudson Yards, 26th Floor

- John Hockenberry, “The Future of the ‘Smart City,’” The Takeaway (June 23, 2016) [radio: 0:52] (consider the gendered roles various spokespeople play here).
- Check out Sidewalk Labs.
- Skim through Sidewalk Talk.
- Nick Pinto, “Google is Transforming NYC’s Payphones into a ‘Personalized Propaganda Engine,’” Village Voice (July 6, 2016).
- Search for and review recent popular and academic publications on Hudson Yards and Sidewalk Labs. We’ll create a shared Google Doc on which we can collaboratively build an annotated bibliography.
February 8: What are smart cities? (And why are they often so dumb and scary?)

- Skim Seattle’s Digital Equity initiative and NYC’s Guidelines for the Internet of Things

*Supplemental: Plenty more people (mostly guys) to choose from!!*

- Dan Hill’s *City of Sound* and *Medium* channel.
- Adam Greenfield, *Against the Smart City* (Do Projects, 2013).
- Liesbet van Zoonen, “Privacy Concerns in Smart Cities,” *Gov’t Info Quarterly* 33:3 (July 2016).
- White House, Office of the Press Secretary, “Fact Sheet: Announcing…Participating Communities in the White House Smart Cities Initiative” (September 26, 2016).
February 15: Urban Intelligence before “Smartness”™

Lab: 4-4:30pm: Making Center Tour with Mick Hondlik: meet @ Tool Checkout, 2 W 13th St, 2nd Floor

- Browse through the Parsons Making Center Resources.

Supplemental Resources:
- Cambridge’s Centre for Urban Conflicts Research.
- “Indexical Landscapes” Symposium, ArtCenter College of Design, October 2016.
February 22: What’s “smart”? And how do we know it when we see it?

Lab: Kate + Jack share their work.
Activity: Developing metadata schemes for next week’s cataloguing exercise: what criteria are most salient in distinguishing between various forms of “intelligence”?

• Murray Shanahan, “Consciousness Exotica,” Aeon (October 19, 2016).

Supplemental Resources:
• “An Ethereal Future,” Reddit (2014) [on blockchain futures].
• Michelle G., “Picture Yourself as a Stereotypical Male,” MIT Admissions (September 5, 2015) [on the gender and racial biases of testing].
• Institute for the Future, “Understand the Blockchain in Two Minutes” [video]
• Olivia Judson, “What the Octopus Knows,” The Atlantic (January/February 2017) [Peter Godfrey-Smith @ NYPL February 21].
• Tom Stonier, Beyond Information: The Natural History of Intelligence (New York: Springer-Verlag, 1992).
March 1: Other Actual + Potential Urban Intelligences (i.e., Thinking Beyond “Smart”)

**Lab:** Developing a catalogue of spatial intelligences – [more info to come](#)

- Aparna Piramal Raje and Saskia Sassen, “*Redefining Notions of Urban Intelligence*,” *Live Mint* (June 29, 2016).
- Skim through the Rockefeller Foundation’s [100 Resilient Cities](#).

*Supplemental Resources:*

- **Civic Intelligence:**
  - Dan Hill, “On the Smart City; A Call for Smart Citizens Instead” through “Passive Citizens” + “Suggestion: Active City Gov’t” through the end, in “**On the Smart City: Or, a ‘Manifesto’ for Smart Citizens**,” *City of Sound* (February 1, 2013).
  - [Ubiquitous Commons](#) + [Human Ecosystems](#).
  - John Elrick and Will Payne, “**Model City: Rule of Innovation**,” *New New Games*.
- **Media/Data Literacies and Civic Media as Counterbalances to Smart Technologies:**
  - Shannon Mattern, “**Public In/formation,**” *Places Journal* (November 2016).
- **Actor-Networked/Cyborgian/Ecological Intelligences:**
Possibly of Interest? Post Democracy: Indigeneity, Stack, Sovereignty

Thursday, March 2, 6:30 – 8:30
Wollman Hall, 65 West 11th Street

With the flow of finance, people, and influence across national borders undermining the traditional sovereignty of the nation-state, this event explores alternative ways that we might think about the definition and role of how a space is delimited and ruled. The conversation considers new technologies including the structure of "the stack" as described by theorist Benjamin Bratton. In several texts Bratton describes the relationship between different types of automated calculation such as mobile apps, smart cities, and cloud platforms amongst others. In recent years Bratton, as well as other academics and artists, have developed substantial discourse around this term, considering how these seemingly invisible structures that inform and underpin our everyday lives operate in ways that are akin to older, more familiar models of the market and the state and also how they differ. This panel brings those conversations together with the history and contemporary moment of the No DAPL protests, one of the largest gatherings of indigenous nations in one place that has gained significant momentum and visibility in the news to fight the Dakota Access Pipeline.

Participants include theorist Benjamin Bratton, writer Tyler Coburn, anthropologist Jaskiran Dhillon, as well as artists Nobu Aozaki, Adelita Husni-Bey, and Daniel Sauter (moderator).
March 8: Observing + Operationalizing Spatial Intelligence

You needn’t read all of these texts closely; you’re welcome to skim through. Your primary goals are to create a mental inventory of potential forms of output, and to generate ideas – in particular, potential concrete forms – for your own projects.

- Jentery Sayers, “Kits for Cultural History,” Hyperbiz 13 (Fall 2015) – and skim through the other articles in this special issue on “Kits, Plans, Schematics.”
- Check out the work of Public Lab and the Extrapolation Factory.

Due Before/In Class: Each of you should choose one project – a kit, plan, performance, method, etc., that has some epistemological interest at its core (either featured in the readings for this week or inspired by the readings – for analysis. Assess its (1) subject matter or purview; (2) its underlying epistemology and methodology; (3) how its format or mode of execution serves, or fails to serve, its purposes; and (4) its weaknesses or unexplored critical dimensions. Please post your ~600-word analysis (with links and illustrations!) to our class website before class, and be prepared to share your work in a five-minute (max!) informal in-class presentation. Then, over the course of the next week, please review your classmates’ posts and offer thoughtful, substantial (at least a couple sentences!) responses to two.

Supplemental Resources (most will be examined in class):
- Carl Abbott, Imagining Urban Futures: Cities in Science Fiction and What We Might Learn from Them (Middletown, CT: Wesleyan University Press, 2016).
- Julian Bleecker and Barry Brown, InterIKEA Systems (2015) [more from NearFutureLab].
- Natalie Jeremijenko et al., Environmental Health Clinic + Lab.
- Museum der Dinge’s “Object Lesson: The Story of Material Education in 8 Chapters” exhibition and the exhibition texts.
- Various Urban Dashboards.
- More Test Kits: blood tests, drug ID tests, Octavia Butler’s “survival kits,” pool tests, pregnancy tests, rape kits, water tests
March 15: Creating Intersections

**Group Formation**: Sam Haddix, Transdisciplinary Design Alum + Parsons Faculty

**Work Plan**: [Project Brief/Contract Worksheet](#) with Jack + Kate

**Budgets** (6pm): Dirk Van Stee, Assistant Director of Budget and Operations

**Due In Class**: three 3x5 index cards, each describing, diagramming, illustrating, etc., a different spatial intelligence that you find most compelling and would potentially like to explore in your final project – [more info to come](#)

- *Skim* through Bryan Boyer, Justin W. Cook and Marco Steinberg, *Recipes for Systemic Change* (Helsinki Design Lab / Sitra, 2011) – in particular, the description of HDL’s studio process on 97-119

March 22: No Class – Spring Break

March 29: Intelligence Gathering + Testing Methods

**Guest**: Bryan Boyer (in-person or via Skype)

**Methods Workshop** w/ Jack + Kate (hot-glue tool assemblage?)

*What follows is a tentative list of readings. Our final selection will depend on the nature of your group projects:*

April 5: Groups Present Project Plans

Due Before Class: Groups’ Project Plans + Environmental Scans: see instructions @ top of syllabus

Presentations: guidelines to come

April 12: Workshop + Informal Desk Consultations

Due Before Class: Group Budget: format to be determined in consultation with Dirk Van Stee

Desk Consultations: groups will work independently and meet individually with Jack, Kate, and Shannon

April 19: Mid-Semester Review

Guest Critics: Elliott Montgomery, Extrapolation Factory and Parsons Faculty; Mariana Mogilevich, architectural historian and Editor-in-Chief, Urban Omnibus; Andrew Blum, architecture / urbanism / tech journalist and author of Tubes: A Journey to the Center of the Internet

Presentations: guidelines to come

For Next Week: iterate and test your projects based on the critics’ feedback

April 26: Workshop + Desk Consultations

Publication Template: Kate discusses formatting guidelines for your final documentation

Post-Testing Share-Out: groups briefly discuss their test results

May 3: Workshop

Due In Class: While you’ll have time in class to work in your groups and consult with the instructors, you’ll also be expected to share with Kate and Shannon a draft of your project documentation, so they can recommend revisions to your text and graphics

May 10: Final Presentations + Publication Materials Due