

**GEOG 38315: Taking the Car Out of Carbon**  
**Spring 2018**  
**Monday 2:45 – 5:35pm, Room 1028 HN**

Instructor: Projjal Dutta  
Teaching Assistant: Paul Racco  
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**PREFERRED CONTACT:** Email (Hunter email as assigned to Projjal) - will respond within 24 hours. Please make sure that you put GEOG 38315 in the subject line of your email and that you sign your message with your name as it appears in CUNYfirst.

**COURSE DESCRIPTION AND OBJECTIVES**

Individuals and households in New York, Tokyo, London, and Paris consume a fraction of the energy and generate a fraction of the greenhouse gases compared to their counterparts in the suburbs. This is well recorded and understood. What is not as well understood is that public transportation creates livable communities where people are more active, they walk and bicycle more, and they interact with each other more at a human scale. This class will study impacts of public transportation, or the lack thereof, on planetary and public health. It will pay special attention to the human health dimension under three separate heads – obesity, suicide and opioid abuse rates.

Public transportation and public health are strongly, at times perhaps surprisingly, correlated. Good public transportation correlates to good public health. In popular perception suburbs are healthy. Healthfulness, in fact, was an original argument for suburbanization. But the complete and utter dependency on automobiles of the American suburb has made it quite the opposite – suburbs today are inherently unhealthy. While this may not be a complete surprise anymore, there is still a lot of surprise coming from the extent and variety of ways in which suburbs correlate to the health of their residents.

This class will combine background material taught by the instructor alongside individual research projects leveraging geographic information systems (GIS). You will be encouraged to ask and answer your own questions, using GIS data and analysis. However, this is NOT A GIS CLASS.

As a starting point, the class will look at two New York State counties in particular, Richmond and Tomkins. Both are relative islands. Richmond County, better known as Staten Island, is one of the five boroughs of New York City. Although well served by public transportation when compared to the state (or national) average, compared to the other four boroughs of New York

City it is much more of a car and driving kind of county. Tomkins County is the opposite. Home to Cornell University and other educational institutions in the town of Ithaca, it has much greater levels of walking, bicycling and public transportation than its surroundings; even though it is firmly ensconced in an auto-friendly part of the state. You will analyze publicly available health data – rates of suicide, opioid abuse based hospitalization, traffic fatalities and, by comparison, vehicle miles traveled (VMT) – a measure of automobile use, and by inverse correlation public transportation.

**REQUIRED TEXTS:**

Glaeser, Edward. “The Triumph of the City.” 2012. *Penguin Books*. ISBN: 0143120549/978-0143120544

Hood, Clifton. “722 Miles: The building of the Subways and how they transformed New York.” 2004. Johns Hopkins University Press. ISBN: 0801880548 or 9780801880544

**RECOMMENDED TEXTS**

Sanderson, Eric. “Mannahatta: A natural history of New York City.” 2013. ISBN: 1419707485 /978-1419707483

**COURSE REQUIREMENTS**

The class meets once a week and attendance is mandatory. If you know in advance they you not be able to attend a lecture, please contact the professor or TA with as much notice as possible.

Each session will follow the format of an hour of instruction, followed by an hour of class discussion on readings and lecture content, concluded with an hour of hands on learning. It is expected that students have completed all required reading prior to class and are prepared to discuss the content of the reading. Midterm projects will consist of performing an analysis on provided data. The final project will require students to apply the methodology and analysis learned from the midterm on data of each student’s choosing.

The final grade consists of the following:

Class participation and attendance	15%
Homework	15%
Midterm	30%
Final	40%

Midterm: You will be provided data on both Richmond and Tompkins counties. The assignment is to use Carto to visualize this data in a manner that supports an argument regarding the

relationship between public transit access and public health. You will write a 5-7 page paper explaining your methods, findings, and limitations of your analysis. One class will be dedicated to students presenting their maps and results.

Final: Applying the practical cartographic skills learned from the midterm and synthesizing the reading material from the course, you will find a dataset corresponding to a geographical region of your choosing to investigate the relationship between public transit access and public health. Data visualization and/or maps created in Carto or a GIS of your choosing is required to present your results. You will write a 7-10 page paper explaining:

- The nature of public transit and public health in their region
- Why you chose this region
- Explain your data (where it was found, how easy it was to find, how reliable it is , etc.)
- Results of your analysis (also, what weren't you able to learn?)
- The strengths/weaknesses of geographical inquiry

Exam day class will be dedicated to students presenting their projects.

I follow the Hunter College grading system that can be found at:

<http://catalog.hunter.cuny.edu/content.php?catoid=32&navoid=7880>

Because I am an adjunct lecturer, I may not be able to resolve an INC grade for the course if the issue is not resolved before the course is over. For more information on INC grades, follow: <http://catalog.hunter.cuny.edu/content.php?catoid=32&navoid=7753>. For any circumstances where an INC may be necessary, please contact me ASAP.

The grade of credit/no credit (CR/NC) is available only if you have completed ALL of the course requirements—taken all quizzes, exams, submitted all writing assignments, and made your final presentations. CR/NC forms can be submitted up to 15 minutes prior to the start of the scheduled final exam period on May 21, 2018.

## **ACADEMIC INTEGRITY**

CUNY and Hunter College regards acts of academic dishonesty (e.g., plagiarism, cheating on examinations, obtaining unfair advantage, and falsification of records and official documents) as serious offenses against the values of intellectual honesty. The College is committed to enforcing CUNY Policy on Academic Integrity and will pursue cases of academic dishonesty according to the Hunter College Academic Integrity Procedures. Plagiarism, dishonesty, or cheating in any portion of the work required for this course will be punished to the full extent allowed according to Hunter College regulations. PLAGIARISM will not be tolerated and all university rules regarding its occurrences will be strictly followed.

## **ADA POLICY STATEMENT**

In compliance with the American Disability Act of 1990 (ADA) and with Section 504 of the Rehabilitation Act of 1973, Hunter College is committed to ensuring educational parity and

accommodations for all students with documented disabilities and/or medical conditions. It is recommended that all students with documented disabilities (Emotional, Medical, Physical, and/or Learning) consult the Office of AccessABILITY, located in Room E1214B, to secure necessary academic accommodations. For further information and assistance, please call: (212) 772- 4857 or (212) 650-3230. If you need disability-related accommodations for your work in this course, please let me know.

## **HUNTER COLLEGE POLICY ON SEXUAL MISCONDUCT**

In compliance with the CUNY Policy on Sexual Misconduct, Hunter College reaffirms the prohibition of any sexual misconduct, which includes sexual violence, sexual harassment, and gender-based harassment retaliation against students, employees, or visitors, as well as certain intimate relationships. Students who have experienced any form of sexual violence on or off campus (including CUNY-sponsored trips and events) are entitled to the rights outlined in the Bill of Rights for Hunter College.

- a. Sexual Violence: Students are strongly encouraged to immediately report the incident by calling 911, contacting NYPD Special Victims Division Hotline (646-610-7272) or their local police precinct, or contacting the College's Public Safety Office (212-772-4444).
- b. All Other Forms of Sexual Misconduct: Students are also encouraged to contact the College's Title IX Campus Coordinator, Dean John Rose (jtrose@hunter.cuny.edu or 212-650-3262) or Colleen Barry (colleen.barry@hunter.cuny.edu or 212-772-4534) and seek complimentary services through the Counseling and Wellness Services Office, Hunter East 1123.

CUNY Policy on Sexual Misconduct Link:

<http://www.cuny.edu/about/administration/offices/la/Policy-on-Sexual-Misconduct-12-1-14-with-links.pdf>.

## **COURSE SCHEDULE**

Jan 29: Like Hitler Won: Lecture

- Class outline for semester: homework assignments, midterm, finals
- Introduction: How highways and the jet engine came to define transportation after World War II
- Introduction to Carto (led by TA Paul Racco) – basics
- HW assignment 1: Devise your own Sustainability Index

Feb 5: A Tale of Two Counties - 1: Lecture + Discussion (led by Racco)

- Collection of HW1, discussion of results
- Lecture on geographic framing: scale, visualization, and data presentation
- Looking at Richmond and Tomkins through the GIS lens (presentation of MTA internship work)
- HW Assignment 2 (Due in 2 weeks): Create a Plan for Geographic Analysis of Richmond County (Staten Island)

- Deliverable: 2-3 pages: what factors would you use?
- We are not expecting conclusions, but this will be a exercise in data exploration and innovative methods to mash-up the data.
- “I will study...”
- Learning outcome: Data determines the questions that can be asked.

Feb 12: Lincoln’s Birthday – College is closed

Feb 19: President’s Day – College is closed

Feb 20 (Tuesday follows Monday schedule): Mid-Term Project kick-off: Discussion

- HW 2 is due. Student presentation of work and discussion on results.
- How can these questions be analyzed in CartoDB?

Feb 26: The Disruptors 1: TNCs, Bike Shares & EVs: Lecture

- Guest presentation by representative from either Uber, Lyft or Via
- Introduction to Autonomous / Electric vehicles.

Mar 5: The Disruptors 2: BikePed: Guest Lecture

- Jules Flynn, The spectrum of non-motorized transportation is large – guest lecture by representative of Citibike

Mar 12: A Tale of Two Companies: Lecture

- Comparing Siemens of Germany and Pullman Standard of the United States
- Midterm assignment discussion

Mar 19: The 350,000 feet view: Guest Lecture

- Cassie Flynn, Advisor to the Prime Minister of Fiji as COP 23 President & Global Climate Change Advisor at the United Nations (UNDP)
- Continue discussion of Staten Island geographic analysis plans (HW2).

Mar 26: Mid-Term Student Presentations

Apr 2: Spring Recess

Apr 9: Green Buildings + Counting Carbon: Lecture

- How green are “green buildings” really?
- What part does location play
- The role of transportation in the national greenhouse gas inventory
- Why it gets overlooked?

Apr 16: Transit Avoided Carbon: Lecture

- Measuring and creating a value stream and a marketplace for Transit Avoided Carbon

Apr 23: A Carbon Marketplace: Guest Lecture

- What does it look like today and what might it look like in the future?

Apr 30: Final Presentation prep: Discussion

- Final project: Take Carto + material covered in course and apply it to a geographical area of your choice. What can you tell us and show us with a map about the relationship between public transit and public health in this area?

May 7: Master Lecture / Meet the Author: Lecture by Edward Glaeser, author of required reading "Triumph of the City".

May 14: Class meets at regular hours - attendance optional. Class will discuss data issues, technical issues, brainstorm about the final presentation.

May 21: Final Presentations