

# Environmental Economics: Using maps in place-based learning and research

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## Employing maps to explore the environmental make-up and history of place

- Identifying environmental themes/topics; conducting research; obtaining data
- Using NYC Open Data and NYS Open Data: student teams researched and selected datasets relating to a local environmental issue.
  - Examples:
- Carto (mapping): setting up student accounts; reviewing the program's features and capabilities; working with sample Open Data – adding features, legends
- Conducting research on the selected issue to further explain the significance/implications of the mapped data.

## 1. Mapping project:

One team of students examined relationship between respiratory illnesses, air pollution, and economic costs

- Students accessed NYS Health Data that identified concentrations of airborne pollutants across the state's counties and a corresponding dataset that identified asthma emergency room visit rates at the county level.
- Designed a map identifying geographic areas (by county) in NYS with highest incidence of asthma and related health problems.
- Examined the data on asthma rates, the students found that one of the state's highest rates was found in the Bronx.



### PA: Asthma Emergency Department Visit Rate Per 10,000 ...

Based on [Prevention Agenda 2013-2018 Tracking Indicators: County Most Recent Data](#)

This chart shows the asthma emergency department visit rate per 10,000 for the most recent year by county. It also shows the 2017 objective. This chart is based in one of three datasets related to the

Find in this Dataset

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Indicator	Disparity	Event Count/Rate	Average Number of Denominator/R...	Measure Unit
Asthma emergency department visit rate per 10,000...	No	248	15,418	ED visit rate
Asthma emergency department visit rate per 10,000...	No	15	2,421	ED visit rate
Asthma emergency department visit rate per 10,000...	No	7,102	108,932	ED visit rate
Asthma emergency department visit rate per 10,000...	No	72	10,107	ED visit rate
Asthma emergency department visit rate per 10,000...	No	616	49,637	ED visit rate
Asthma emergency department visit rate per 10,000...	No	45	4,592	ED visit rate
Asthma emergency department visit rate per 10,000...	No	32	4,119	ED visit rate
Asthma emergency department visit rate per 10,000...	No	703	57,002	ED visit rate
Asthma emergency department visit rate per 10,000...	No	81	7,048	ED visit rate
Asthma emergency department visit rate per 10,000...	No	26	5,264	ED visit rate
Asthma emergency department visit rate per 10,000...	No	17	2,665	ED visit rate
Asthma emergency department visit rate per 10,000...	No	18	2,820	ED visit rate

More Views

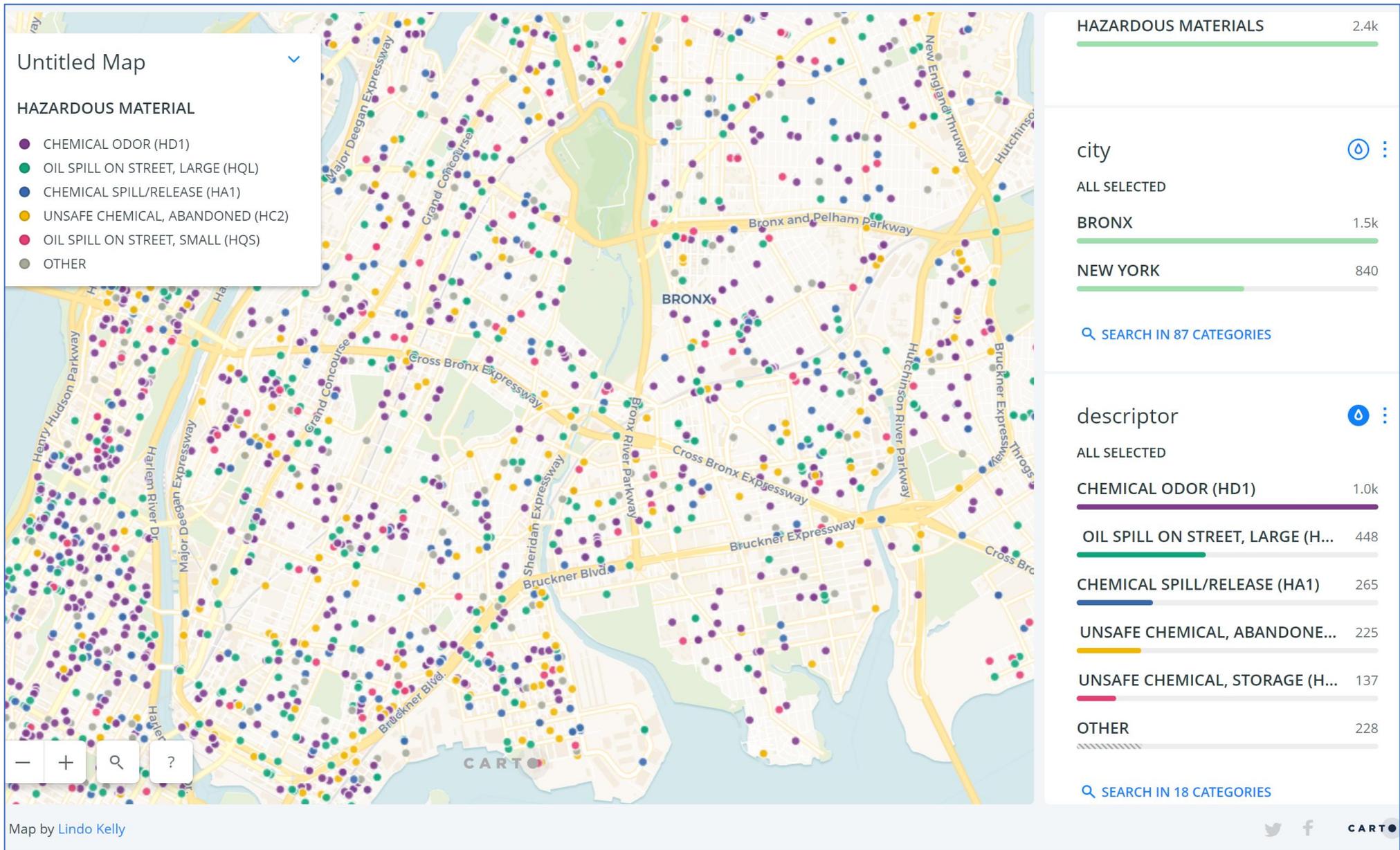
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Search views

- PA: Age-Adjusted Heart Attack Hospital... Updated January 24, 2017
- PA: Asthma Emergency Department Vi... Updated January 24, 2017
- PA: Percentage of Preterm Birth by Co... Updated January 24, 2017
- PA: Rate of Hospitalizations for Short-T... Updated January 24, 2017

## Causes?

- Were the higher rates linked to airborne pollutants?
- Students examined key findings from the South Bronx Environmental Health and Policy Study (2009), that linked health outcomes to obsolete **industrial sites**, a sludge processing plant, **waste transfer stations** and high **traffic congestion** located in close proximity to densely populated residential areas.
- Mapped the location of these sites together with the areas of the county corresponding to highest asthma rates.



S. Munoz, Md Khan, E. Kellezi, K. Charlot Hazardous Materials Sites in NYC; ECON 2505 ID, Fall 2017

## 2. Making connections

Connecting the data on their map to the issues of poor health outcomes and the environmental and economic costs imposed by the sites:

- Presented a critical analysis that made the important connection between the collection and presentation of data and its significance
- Made a meaningful connection to the environmental justice movement, highlighting community efforts to have the sites closed or relocated.
- Showed how data – and access to it – can be a vital source of community empowerment - organizing to force the closing and relocation of toxic sites to non-residential areas

### 3. Summary paper

- Students prepared a 2-page summary of describing the data they chose and why this particular data/topic was chosen.
- Discussed the environmental significance of the mapped data. What kinds of problems (or positive information) does the data point to?
- What form of remediation was taken or is recommended to address the problem? How does the research on health and economic costs support the recommendation action?
- Importance of what was learned from the process and specific conclusions drawn from this project