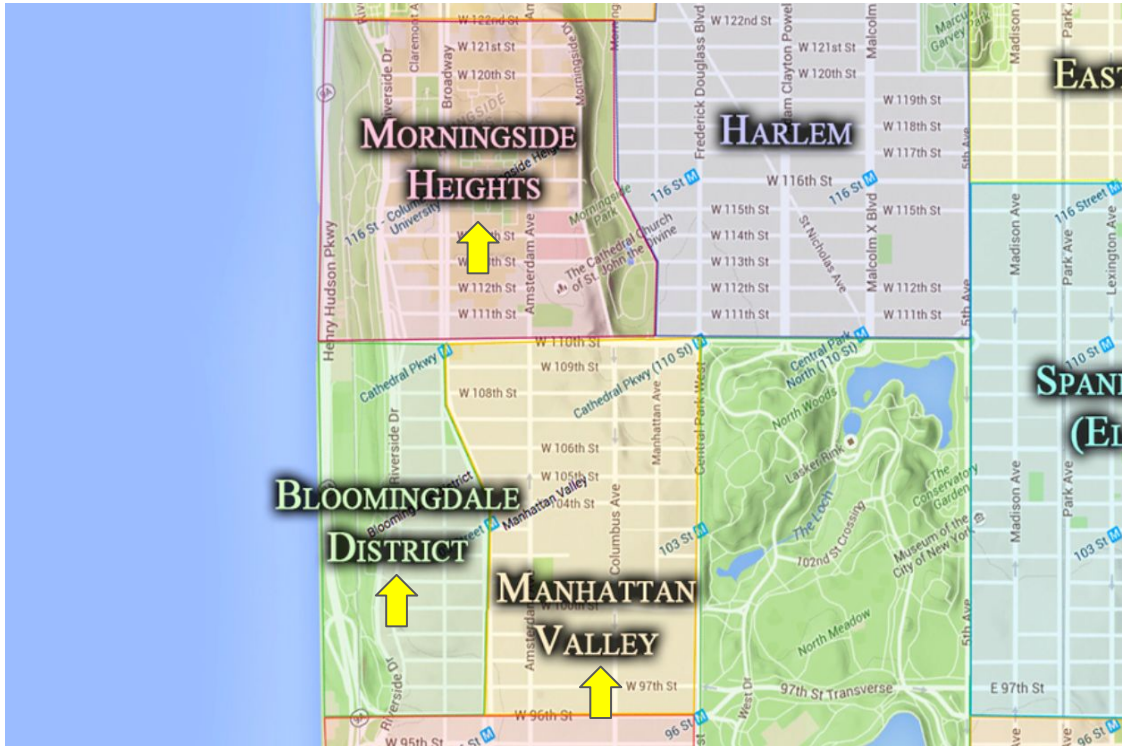# Pedestrian Secondhand Smoke

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Idea Pitch
03/21/2024

COLUMBIA
GSAPP

Study Summary & Site Location

The purpose of this study is to examine exposure to secondhand smoke in respect to people's pedestrian movement throughout the neighborhoods to the south of Avery Hall.

Sensors & Data Collection

Sensor	Purpose
Particulate Matter Monitors (Air Quality)	Measures concentrations of particulate matter throughout the air released from cigarettes.
Nicotine Detectors (Air Quality)	Measures concentrations of nicotine the air to detect tobacco smoke.
Polymer Film Sensors (Air Quality)	Measures nicotine vapor molecules from secondhand smoke using polymer films.
Physical Push Button/GPS	Push button if you see a smoker. Records your location with a time stamp of where you saw the smoker.

Data Visualization

Data Type	Purpose
Points	Points will display the points where smokers that were observed. Date and times will be recorded.
Lines	Lines will display the walking routes.
Polygon	Polygon representation of air quality and nicotine concentration.

Data Type	Purpose
Cluster	Cluster analysis to determine high smoker areas.
Time Series	Points on the map will be observed over time.
Visualization	How much smoke that would fill someone's lungs.

The Sensors

Source: Vernier™ Go Direct™ Respiration Belt

Source: Conscious Clothing

Source: Angel Devil Production

Source: The Week

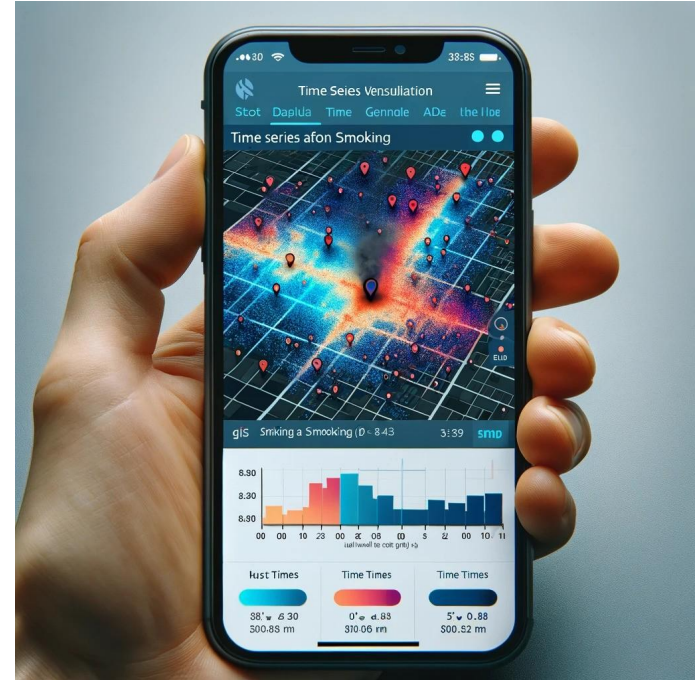# Technology & Prototype

Phone Recording

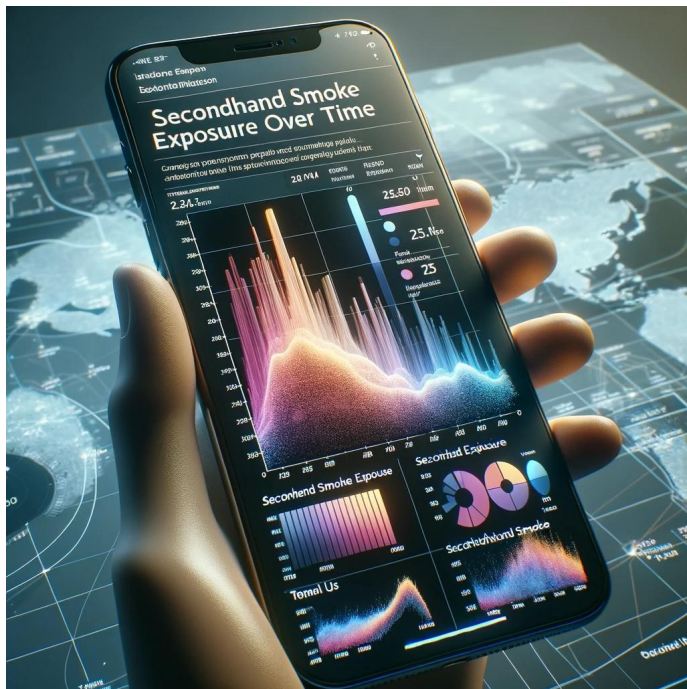**Collective Point Map**

Data Analysis Prototype

Hotspot/Cluster Analysis

Time Series

Personalizing Smoke Exposure

Smoke Exposure Levels

Air Quality Levels

Thank you!

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