

Predictive Policing in Pittsburgh

CAPP-PGH

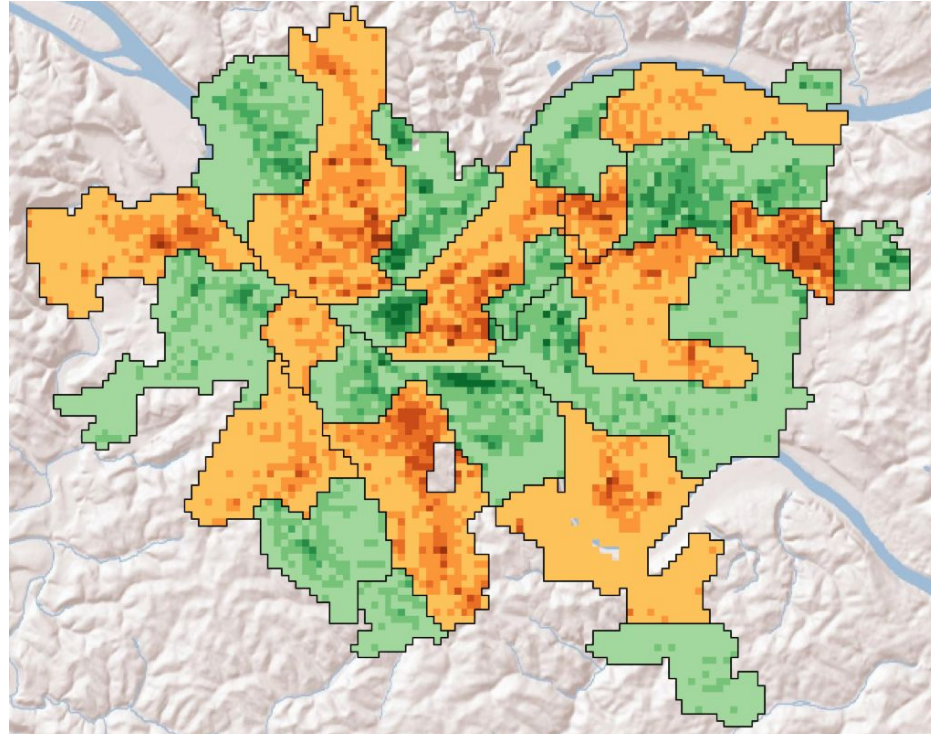
(Coalition against Predictive Policing)

Why we are holding this teach-in?

Predictive policing was officially tested **without public input** from 2017 to 2019

Continuing the use of this technology will itself be a **continuation of the city's and country's racist policing legacy**

Predictive policing in Pittsburgh



How Predictive Policing Works In Pittsburgh



Pittsburgh Metro21 model collects 911 calls & past crime data

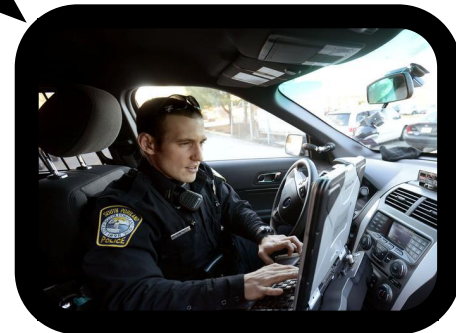


Find patterns in data: geographic & temporal



Generates a map of "hot spots" each week

Police are **deployed on extra patrols** to hot spots



How did Predictive Policing Come to Pittsburgh?

2009: Prof. Daniel B. Neill develops **CrimeScan**, a predictive policing model, for Chicago Police



2014: Pittsburgh Police Chief Cameron McLay
Saw predictive policing as an “unbiased” form of policing



2016: Partnership between Metro21, PBP,
funded by Richard King Mellon Foundation

Richard
King
Mellon
Foundation

Oct 2016: Homewood becomes the pilot area for Pittsburgh
CrimeScan, trial expands to city in 2017, and ended in 2019



CMU's "Urban Laboratory"

"Our partnership with Carnegie Mellon has actually gone to the next stage. **We now have a Memorandum of Understanding with the university, the first of its kind in this country's history**, that allows us to have the university as the research and development arm of city government, and allows the city to be **CMU's urban laboratory**. So, if I want to develop the next generation of traffic lights that use real-time data and sensors that are able to move traffic much more efficiently, **I don't have to put out an RFP. I can just pick up the phone, call the university**, and say, 'I need your team to develop this for me.'"



The Flaws of Predictive Policing: Creation & Execution



Pittsburgh's history of **racially biased arrest records** are reflected in the data **used to train the model behavior**



No Transparency: Model design and inputs are **not public record** so cannot be reviewed or audited



No standard operating procedures exist for how the police are to use the information generated by the model



No community stakeholders are informed or involved, only city institutions

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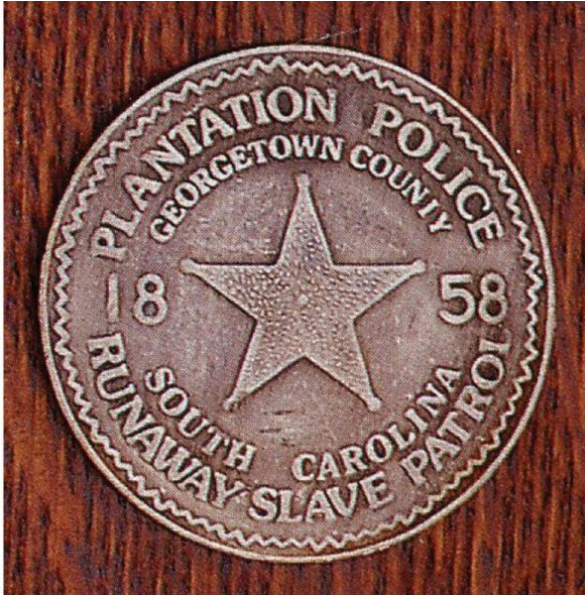
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Machine learning finds **patterns in the past**
in order to make **predictions about the future**

Criminalization: roots in racist history



Source: [America's Black Holocaust Museum](#)

1600s: Legal slavery in the United States

1700s: Slave patrols, Night Watches, Indian Constables

1713: Lantern laws: early “use of technology” to monitor and control black and brown bodies

1914: Jim Crow laws

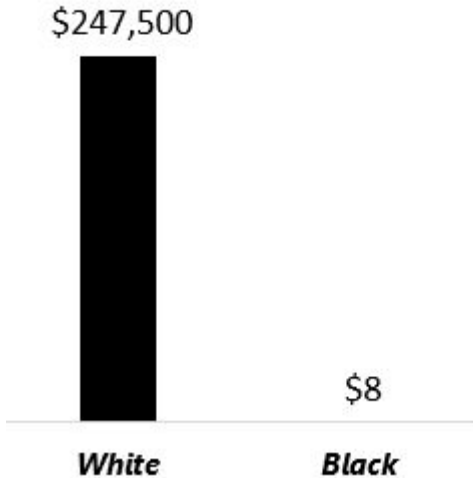
1934: Redlining - creation of the Federal Housing Administration with explicit segregationist policies

1970s - 1980s: War on Drugs

2006: Introduction of predictive policing by UCLA military researchers comparing Latinx youth with Muslim insurgents

History as data

Boston: Household Net Worth (2015)



Source: **Federal Reserve Bank of Boston**

1934: Redlining - creation of the Federal Housing Administration with explicit segregationist policies

- Produced the Race-Wealth Gap


1970s-1980s: War on Drugs

- Mandatory minimums
- Drastic increases in race-based arrests


1993: Broken Windows Policing

- Increased arrests for petty crimes

Broken Windows



infestations. It is well established that signals of urban disorder (e.g., “broken windows”) can lead to or attract criminal behavior that hardens over time. Therefore the two areas proposed for further funding are intertwined; for example, 311 calls for abandoned, run-down buildings and properties are not only targets for clean-up but also likely leading indicators of crime. All told, the proposed work would



A Continuation: Broken Windows Policing

- 1969:** Philip Zimbardo's social science experiment on vandalism
- 1982:** George L. Kelling and James Q. Wilson *Atlantic* piece introducing *broken windows*
- 1993:** Giuliani wins NYC Mayoral race, implements "stop and frisk"

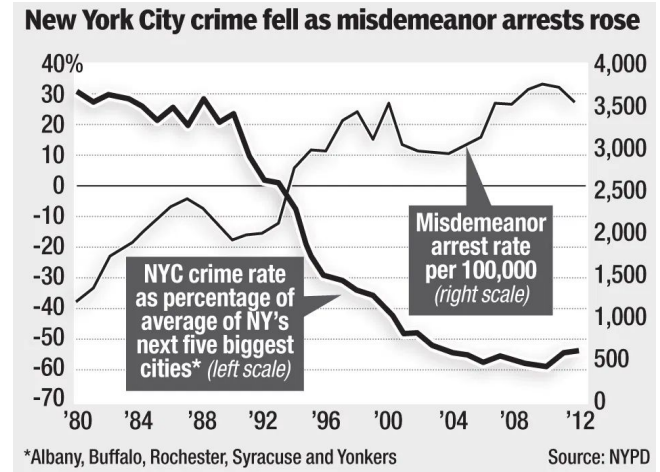


Effects of Broken Windows

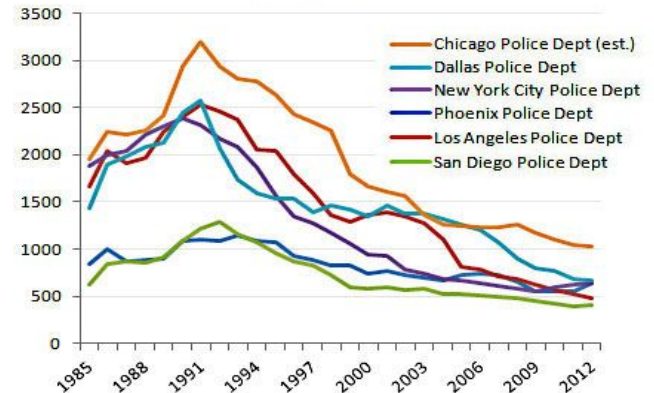
Does not account for drop in crime:
crime dropped nationwide

Instead:

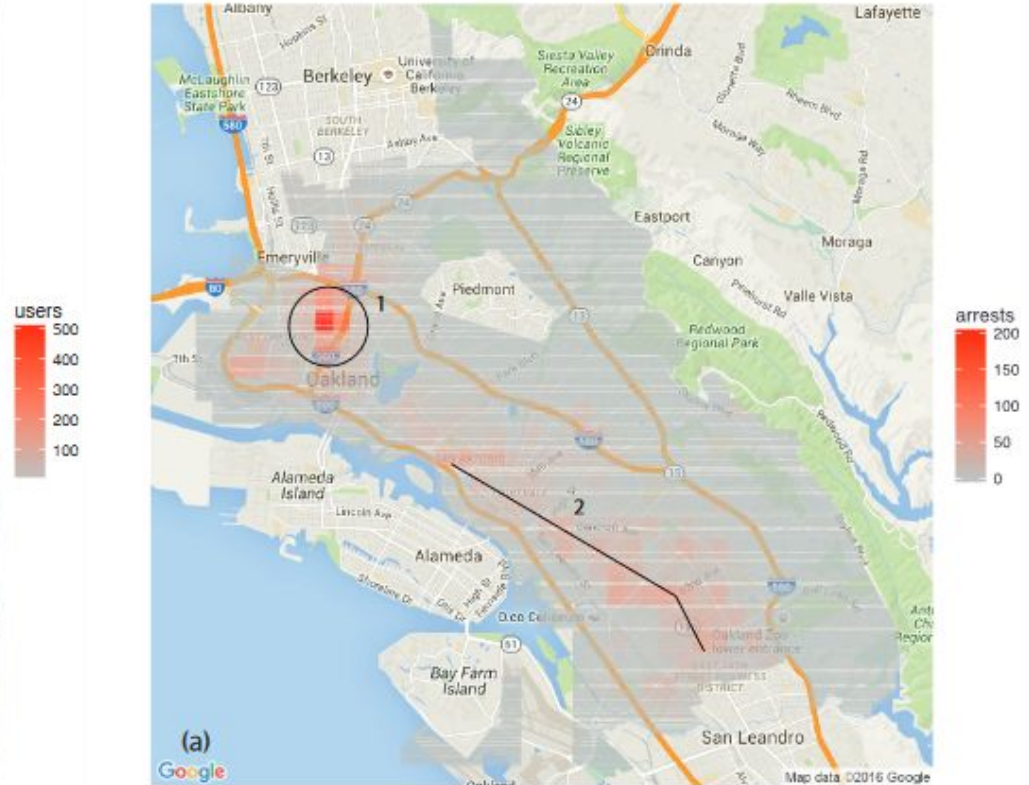
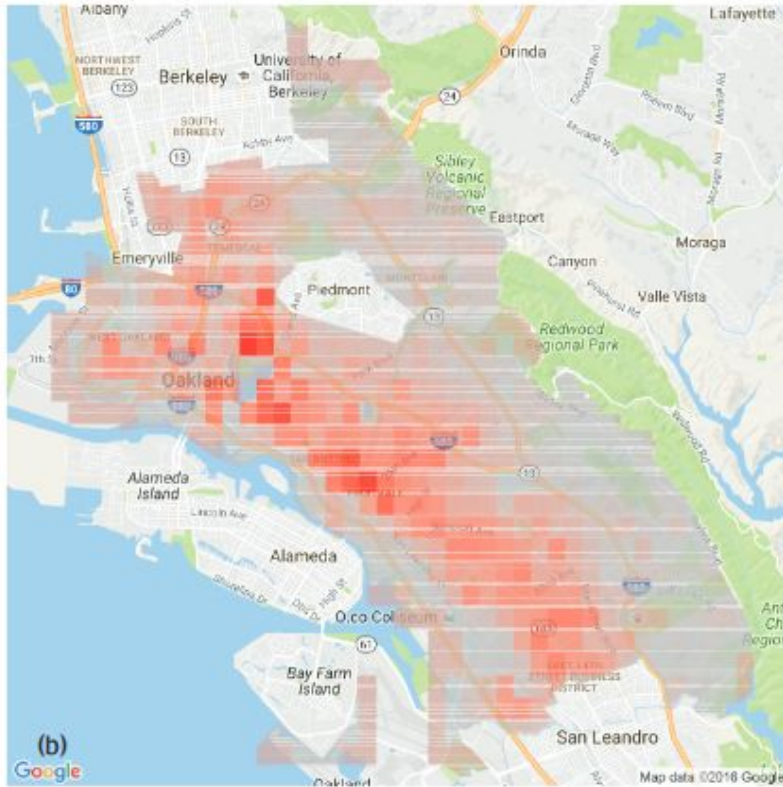
- Increased police misconduct
- Drastically increased misdemeanor arrests
- Disproportionate effects on POC
 - 87% of stop-and-frisks Black/Latino
 - 90% are innocent



Violent Crime Per 100,000 Residents
Six Large American Cities



Arrests reports do not show where crime happens



What's in the Data? Race Disparities in Arrests

Machine learning models learn patterns from data...

**Proportion of Black Violent
Crime Offenders
Nationally**

22%

*Bureau of Justice Statistics, 2018

**Proportion of Black Violent
Crime Arrests in
Pittsburgh**

84%

*University of Pittsburgh Pittsburgh's
Racial Demographics 2015: Differences
and Disparities

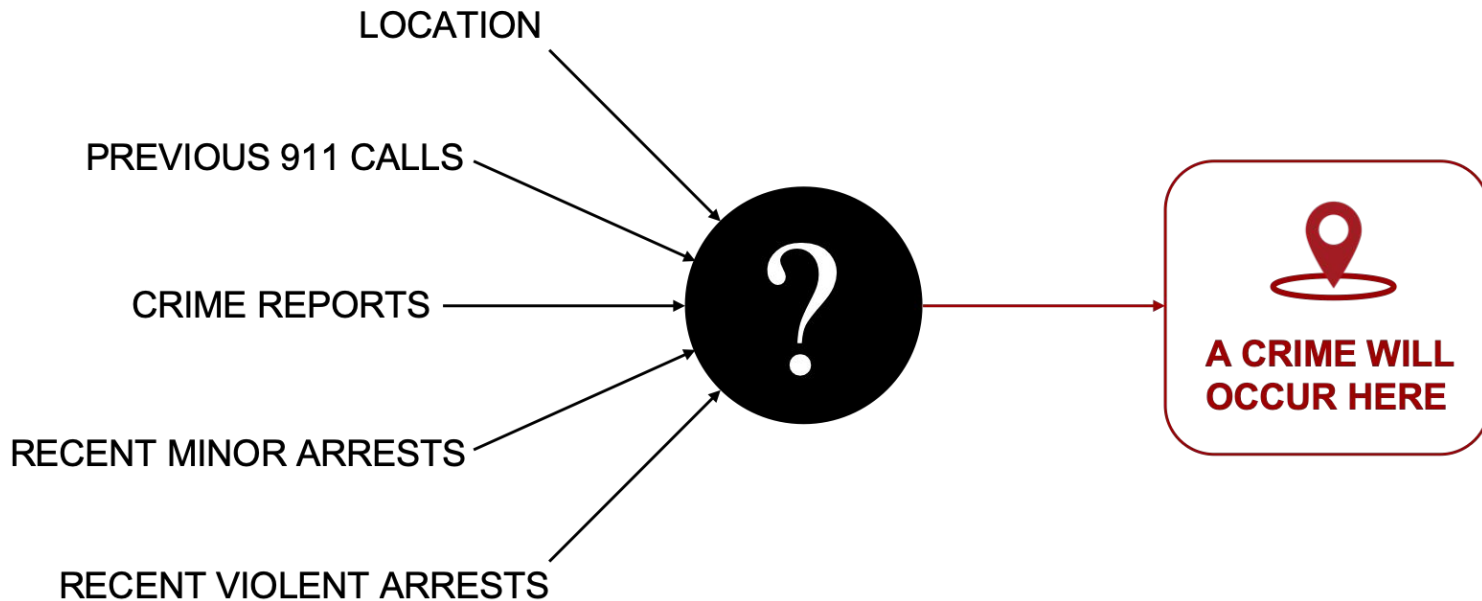
**Black population in
Pittsburgh**

24%

Source: Statistical Atals, Race and
Ethnicity in Pittsburgh, PA

Racist Data in, Racist Results out

WILL A CRIME OCCUR HERE?



Predictive policing doesn't even work!

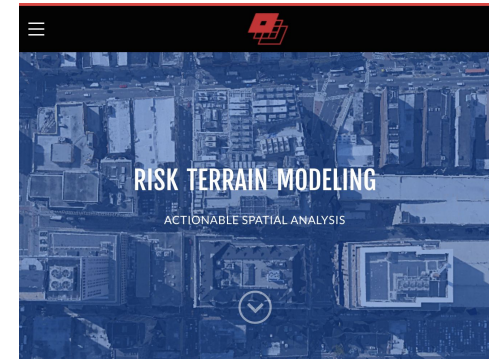
THIRD PARTY REPORTS



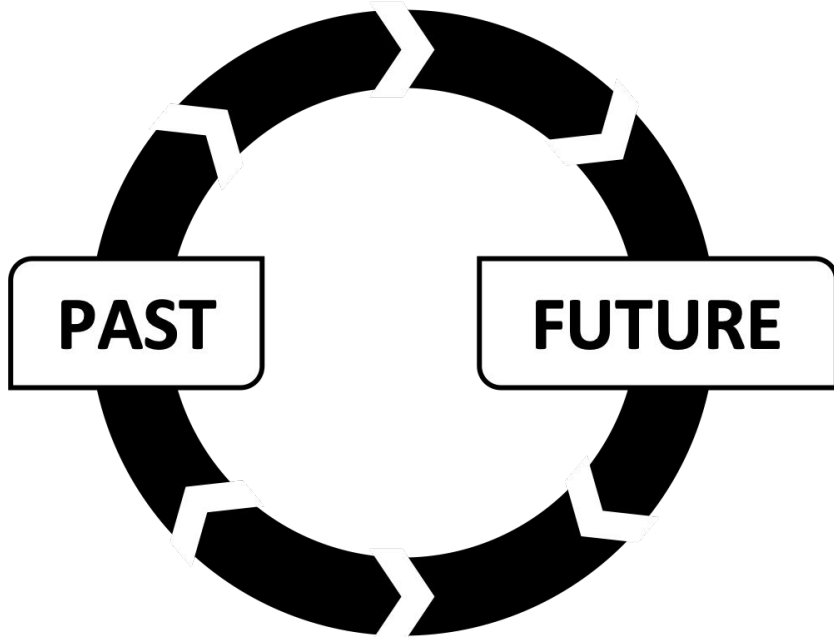
No difference in
likelihood of
shootings between
individuals on/off list

**Higher rates of
arrest on list**

OTHER REPORTS: BY THE CREATORS OF PREDPOL



Predictive policing is *fundamentally* flawed



Machine learning does not **predict the future**, it **replicates the past**

- ML algorithms are tied to their data, and the data is steeped in our racist legacy

Tells cops **exactly what they want to hear: for profit**

- The more seasoned an officer, the more likely they agree with the algorithm

Veil of objectivity on same old policing practices

The Flaws of Predictive Policing: Creation & Execution



Pittsburgh's history of **racially biased arrest records** are reflected in the data **used to train the model behavior**



No Transparency: no public information on predictive policing creation, deployment, and effects from CMU and Pittsburgh Gvt



No **standard operating procedures** exist for how the police are to use the information generated by the model



No **community stakeholders** are informed or involved, only city institutions

No Public Hearings from CMU or Government

Metro21
SMART CITIES INSTITUTE

METRO 21: SMART CITIES INSTITUTE
LUNCH & LEARN

Algorithmic Bias in Criminal Justice

Moderator, Karen Lightman,
Executive Director,
Metro21: Smart Cities Institute

Will Gorr, Professor of Public Policy and Information Systems, Emeritus, Heinz College, Carnegie Mellon University

Dan Nagin, Teresa and H. John Heinz III University Professor of Public Policy and Statistics, Heinz College, Carnegie Mellon University

Alexandra Choukdechova, Assistant Professor of Statistics and Public Policy, Heinz College, Carnegie Mellon University

Friday, November 1
12:00 - 1:00 PM
HAMBURG HALL 1002

From Netflix recommendations to road repairs, artificial intelligence is behind many important decisions governing the ways we live and work. When it comes to deciding the next show to binge, relying on a data-driven predictive model is a relatively low-stakes endeavor. However, these decisions have much greater consequences when applied to criminal justice. This moderated panel will discuss the policy implications of algorithmic bias in criminal justice as well as explore how predictive techniques can assist in equitable decision-making processes.

From: Metro21 <metro21@cmu.edu>
Date: Thu, 31 Oct, 2019, 6:09 PM
Subject: Postponed - November 1 Lunch and Learn
To: Metro21 <metro21@cmu.edu>

Hello,

Thank you for your interest in attending the Metro21 Lunch and Learn session on Algorithmic Bias in Criminal Justice, originally scheduled for November 1.

Due to low attendance and an interest from students who cannot attend due to the DC Colloquium, we have decided to postpone the event until when we can ensure more members of the CMU community can participate.

Thank you and we will be back in touch when we have a new date for the event.

Metro21: Smart Cities Institute
Metro21@cmu.edu

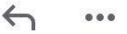
Predictive Policing
Information Sharing &
Listening Session -
Registration Cancelled



Inbox



Metro21 3:15 PM
to me ▾



This event is only for faculty, students and staff currently affiliated with Carnegie Mellon University. Please re-register with your Andrew ID to attend the session.

Open to Carnegie Mellon University community members only.

No Transparency: Model and Data Used

REQUEST

3. *Any code or technical implementations of the Model*

RESPONSE

As per Item C-3, as CMU developed the code, it is not the City's to give. Records involving trade secrets and confidential proprietary information are exempt under RTKL. 65 P.S. §67.708(b)(11).

No Transparency: Deployment

REQUEST

1. *All hot spot documents, particularly the locations of the hot spots identified per police zone per week, used in weekly roll call meetings since Jan 1, 2015. Locations should be provided as granularly as possible, with the date associated with each location's identification as a hot spot.*
4. *A current screenshot of the hot spot dashboard provided to officers through the computers in their vehicle*

RESPONSE

As per Item C-1, providing Hot Spot locations would jeopardize the safety of officers and the effectiveness of crime prevention patrols. These records are exempt under RTKL. 65 P.S. §§67.708(b)(1)(ii); (b)(2).

As per Item C-4, the “hot spot dashboard” available to the Pittsburgh Bureau of Police would jeopardize the safety of officers and the effectiveness of crime prevention patrols. These records are exempt under RTKL. 65 P.S. §§67.708(b)(1)(ii); (b)(2). There is, however a public dashboard which provides crime information on the City’s webpage: <http://pittsburghpa.gov/> Scroll down to Burgh’s Eye View and check the Police Blotter option.

No Transparency: Effects

REQUEST

8. *Any evaluation on the effectiveness of the Model, and data associated with this evaluation*
9. *Any data retention policies*
12. *Information about which regions referenced in Figure 3 of the Model research paper (http://halley.exp.sis.pitt.edu/comet/presentColloquium.do?col_id=16153) are treatment regions, and which are control regions. The figure from the paper is reproduced below.*

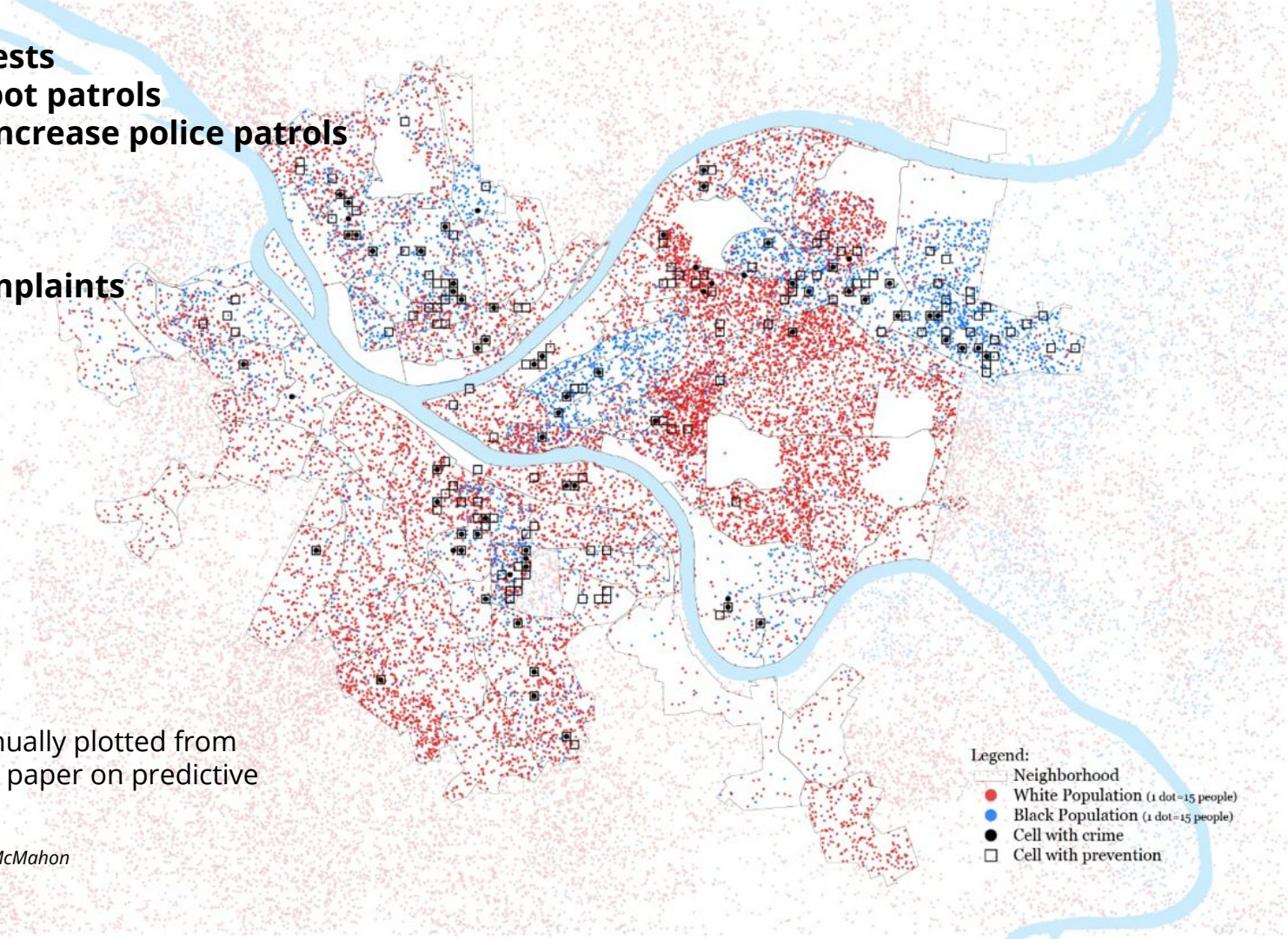
RESPONSE

As per Items C-8, C-9, and C-12, upon diligent search, no responsive City records exist. Additionally, records involving trade secrets and confidential proprietary information are exempt under RTKL. 65 P.S. §67.708(b)(11).

Claim: 4 Arrests
20,000 hotspot patrols
?? Effect of increase police patrols
?? Stops
?? Searches
?? Seizures
?? Police complaints

Hot spots manually plotted from
2014 research paper on predictive
policing

Map made by Ryann McMahan

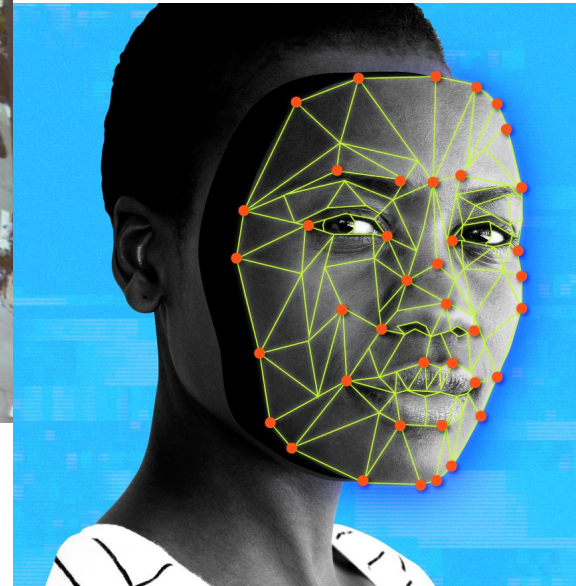


Lack of transparency is an ongoing pattern

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The Flaws of Predictive Policing: Creation & Execution



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No standard operating procedures exist for how the police are to use the information generated by the model



No **community stakeholders** are informed or involved, only city institutions

No Standard Operating Procedures

REQUEST

2. *Use policies and standard operating procedures for the Model*

RESPONSE

As per Item C-2, a policy does not exist.

No Standard Operating Procedures

Lack of standard operating procedures gives police free reign



CHICAGO

“Gang Database” (Strategic Subject List) “intended” to connect potential victims/perpetrators with social services, instead is used to target for arrest:

- 26 people on the SSL list referred to social services, 280 were arrested (2017)



LOS ANGELES

Crime Analysts Chose Hotspots around Skid Row: Hot spots chosen subjectively by LAPD Analysts

Project Laser: Citizens arbitrarily added to list with no prior arrests, based on “referrals” from detectives or patrol officers

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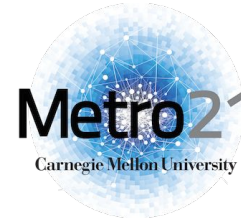


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Community was never involved



Richard
King
Mellon
Foundation

The project's oversight committee—composed of PBP, CMU, and DHS members—will meet monthly in person or via phone conference. Agenda items need to be generated by both PBP and CMU in advance.

Risks:

A risk is that a partnership does not develop between PBP and CMU as outlined above, but instead CMU researchers and the project are viewed as external and barriers to internal operations of PBP.

A second risk is that predictive policing will not prevent crimes in Pittsburgh for any number of reasons. Past CMU research has shown that predictive modeling is accurate enough to support crime prevention in Pittsburgh, so the remaining issues are dosage level (getting it high enough) and type of crime prevention measures taken by field officers (available time is spent appropriately in patrol and COP activities as determined by field officers). These risks are largely minimized by starting with a pilot study in one zone and conducting experiments.

A third risk is that field officers will not carry out prevention work (e.g., intense targeted patrol, problem-solving in partnership with residents), but only respond to 911 calls with a focus on arrest as is usual.

From the project's grant request to the Richard King Mellon Foundation via the RTKR

No community involvement is not new for PGH

Press Release: 22 orgs & 600+ residents support alternative plan to the Mon Oakland Connector



Residents and Community Groups Affected by Proposed Mon-Oakland Roadway release Letter Calling on City Council, Foundations, Academic Institutions, and Public Agencies to Fund Alternative Transportation Proposal Entitled "Our Money, Our Solutions."

ARTICLE VIII: - PRIVACY POLICY FOR PUBLIC SECURITY CAMERA SYSTEMS

CHAPTER 680: - GENERAL PROVISIONS

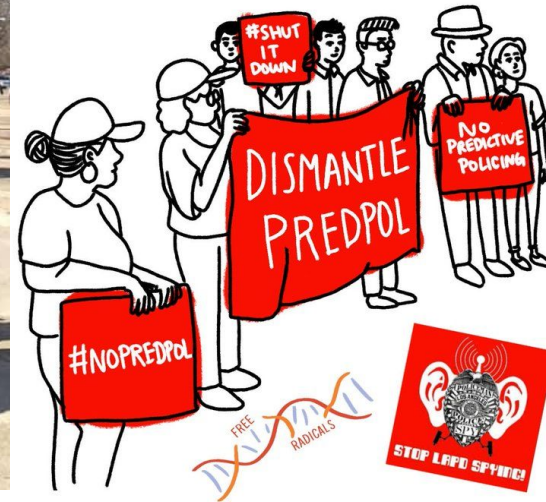
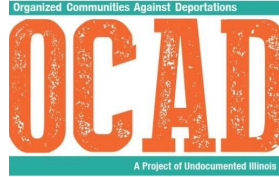
"City Public Safety Camera Review Committee" means a committee consisting of the Mayor or his/her designee, the Director of Public Safety or his/her designee, the President of City Council or his/her designee, one (1) other Council member or designee selected by the Council president, and three (3) members of the public appointed by the Mayor and approved by City Council.

"we're not following the rules right now."
--Mayor Peduto

The Logic and Progression of Predictive Policing



Solidarity Against Predictive Policing



JOIN US TO
DEMAND AN END
TO LAPD'S
RACIST
PREDICTIVE POLICING
PREDPOL PROGRAM

WHEN: 8:45AM TUES
OCTOBER 15TH
WHERE: LAPD HEADQUARTERS
100 W. 1ST ST,
LOS ANGELES 90012

What needs to change?

Asks of City / County

- 1. Ban predictive policing**
- 2. Ban facial recognition**
- 3. Implement a community veto process on surveillance technologies**

What needs to change?

Asks of Carnegie Mellon University

- 1. Fund and organize an independent, third-party audit to evaluate the impact of predictive policing on Pittsburgh's communities, particularly its Black communities.**
- 2. Call for a city- or county-wide ban on predictive policing technologies**
- 3. Mandate that CMU groups and institutes include extensive community engagement on projects that directly affect their communities.**

 Taking Action

Visit this link to send an email to Carnegie Mellon University administration:

<https://capp-pgh.com/CMUAsks>

Email our form letter to City Council, County Council, City of Pittsburgh Department of Innovation and Performance, and Allegheny County Department of Human Services: <https://capp-pgh.com/CityAsks>

Action: City Council

What: Urge City of Pittsburgh City Council to ban predictive policing and give community veto power on surveillance technologies

When: Submit by Friday 7/17, 6pm EST for Saturday's public hearing on police reform 7/18, 12pm EST

How: Sign up to speak at via City Clerk's Office at **(412) 255-2138** by 6 PM FRIDAY, JULY 17. After you've registered, you'll be given the telephone number and access code to join the hearing; or forward comments to the City Clerk's Office via **cityclerksoffice@pittsburghpa.gov** by 6 PM Friday, July 17.

Script: Hi, my name is _(full name)_, and I live in the _(neighborhood)_ neighborhood of Pittsburgh. I am calling in concern of the continued criminalization of Black people through technology that excludes the community. I am appalled by the secretive deployment of predictive policing in partnership with Carnegie Mellon since 2017. Predictive policing relies on our history of racist and biased crime data results in overpolicing of the same Black neighborhoods. To ensure this never happens again, I am calling for a ban on predictive policing as passed by the city of Santa Cruz, and a community veto process on surveillance technologies administered by a citizen board representing the community.

<https://capp-pgh.com/CityAsks>

Action: County Council

What: Urge Allegheny County Council to ban facial recognition policing and give community veto power on surveillance technologies

When: Contact your council member or submit public comment in advance of the next County Council meeting on 8/18

How: Send comments to County Council at apps.alleghenycounty.us/website/CouncilReqComm.asp or call your local city council representative at alleghenycounty.us/county-council/council-members.aspx

Script: Hi, my name is _(full name)_, and I live in _(municipality)_ of Allegheny County. I am calling in concern of the continued criminalization of Black people through technology that excludes the community. I am appalled by the secretive deployment of Clearview AI facial recognition in the County DA's office. Facial recognition would result in a constant surveillance state and disproportionately is biased against racial and gender minorities and has already resulted in the wrongful arrests of Black men. To ensure this never happens again, I am calling for a ban on facial recognition as passed by the City of Boston and other municipalities, and a community veto process on surveillance technologies administered by a citizen board representing the community.

<https://capp-pgh.com/CityAsks>

Thank you!

Questions and comments welcome!

10 min to take action:

CMU Actions: <https://capp-pgh.com/CMUAsks>

Local Gov't Actions: <https://capp-pgh.com/CityAsks>

Visit <https://capp-pgh.com> to stay updated