



## #333: Racial Disparities in Illinois Traffic Stops

**Date:** Jan 22nd, 2019

**Sponsor:** Chi Hack Night Community

**Website:** [chihacknight.org](http://chihacknight.org)

**Hosts:** Emily & Josh L

**Speakers:**

- Rachel Murphy, staff attorney, ACLU-IL
- Mollie Pettit, data visualization / data science freelancer
- Chris Kucharczyk, data scientist, IDEO

### Welcome to Chi Hack Night!

Find this **agenda** at [chihacknight.org](http://chihacknight.org) — next to the RSVP and details button

Join our [Slack](http://slackme.chihacknight.org) channel: <http://slackme.chihacknight.org> (Many groups use this to communicate.

Download it now <https://slack.com/> and get ahead of the curve!)

Thank you to our sponsor **ChiHackNight Community** for the Empanadas!

Everyone can edit this document.

### Tonight's agenda:

**6:00 pm** Eating and socializing

**6:15 pm** Welcome, house rules & three-word introductions (welcome, first-timers!)

**6:30 pm** Announcements

**6:45 pm** Presentation

**7:20 pm** [Breakout group pitches](#)

**7:30 pm** Break into groups and hack

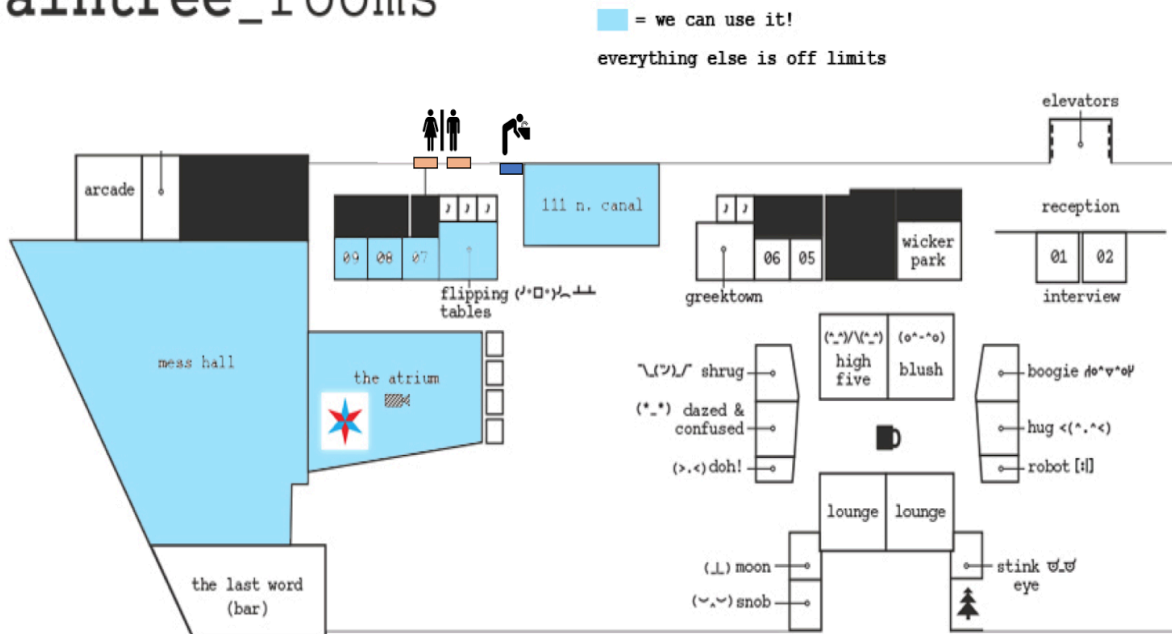
**9:30 pm** Pack up and leave

### Food, drink, and the Braintree office:

- Food: Food is in the cafeteria. Please don't take too much! \*define too much << if you're asking, you took too much
- Drink: You can take up to 2 non-alcoholic drinks from the 'everyone' refrigerator (If you see any food near the drinks you're reaching for, you're in the wrong fridge) **Q: is the coffee fair game? No.**

- Braintree space: The rooms in **Blue** [see map below the fold] we are welcome to use. Everything else is off limits please! **Please do not disable or disconnect anything in the Braintree rooms.** If you need help, ask one of the Braintree staff.

## Braintree\_rooms



### Apps, wifi, and social media:

- Wifi: PayPalGuest / SafePayments (on the whiteboard to the right of these screens)
- Join our [Slack](http://slackme.chihacknight.org) channel: <http://slackme.chihacknight.org> (Many groups use this to communicate. Download it now and get ahead of the curve!)
- [Twitter](#): share using the **#chihacknight** hashtag. Follow us [@chihacknight](#)
- [Facebook](#): we got a page! You can like us there.
- [Instagram](#): share using the **#chihacknight** hashtag. Follow us [@chihacknight](#)
- Subscribe to our newsletter! Get the latest and greatest in Chi Hack Night news & updates by checking out our weekly newsletter. Sign up [here](#).
- Left something at Chi Hack Night? Email [chicagooffice@getbraintree.com](mailto:chicagooffice@getbraintree.com)
- **NEW JOKE** for you at bottom\*

### Be nice:

- Please keep announcements, job postings, breakout pitches less than 30 seconds
- Please read our [Code of Conduct](#)
- P.S. Are you interested in co-hosting? Ask in the Slack channel **#co-hosts**

## Introductions

- Introduce yourself.
- Keep it to 3 words.
- Warm welcome to the newcomers!

## Announcements — 1/22/2019

- *If you're here and have an announcement for the group, please add any information here in the appropriate section (general, events, or jobs).*
- *Put your name and the date next to it in parentheses.*
- *Keep announcements under 30 seconds.*
- *If you will not be present, please make a note that you are not here to announce it.*

## General Announcements

### Chi Hack Night has incorporated as a non-profit!



On December 31, 2018, Chi Hack Night officially incorporated as a non-profit organization!

### Donate to Chi Hack Night!

Our event will always be free and accessible to all but we need your help to keep it going!

Ways you can donate:

- When you register on Eventbrite: <https://chihacknight.eventbrite.com/>
- On Venmo: <https://venmo.com/chihacknight>
- Cash (give it to Derek Eder, Emily Drevets or Katie O'Shea)

  **Bonus!** Donate \$100 or more and get a Chi Hack Night swag pack! It includes a Chi Hack Night t-shirt, coffee mug and 4 Chi Hack Night stickers! If you have donated \$100 or more and have not gotten your swag, talk to the co-hosts!

### Chicago Municipal Election

On **Feb 26th, 2019**, Chicago will hold a municipal election to elect a new **Mayor** and members of the **City Council**.

### Chi Hack Night Publishes First Academic Journal Article

The City of Chicago and Chi Hack Night have published their first joint, peer-reviewed scientific article on predicting *enterococci* in Lake Michigan. The paper is the result of a 2-year joint project between Chi Hack Night (Kevin Rose, Matt Sweeney, and Scott Beslow), DePaul University interns, and the City of Chicago. The paper was published in the peer-reviewed journal, *Water Research X*, as an open-access article so it can be widely read and distributed

without payment or subscription. The paper introduces an innovative new way to improve water quality predictions, in this case, a 300 percent improvement over existing methods.

This project had over 1,000 volunteer hours donated to the city through in-kind labor. This summer, it will be the subject of the plenary session for the annual American Society for Microbiology (ASM) *Microbe* conference with 10,000 microbiologists from academia, industry, and health care. See the paper at <https://doi.org/10.1016/j.wroa.2018.100016>

## Event Announcements

### Women's Package Development Workshop with R-Ladies Chicago

Curious about package development, but not sure where to start? This workshop is for you! Run by R-Ladies Chicago, the goal of this workshop is to empower you to start contributing back to the R ecosystem with package development. Applications now open through **February 2** - more information here: <http://forwards.github.io/edu/chicago/>

Saturday, February 23, 2019 @ UChicago, all day

*Please share with qualified women/non-binary individuals who would be interested! No previous experience creating an R package is required, though familiarity with R is helpful.*


### [What we learned at rstudio::conf](#) (next R-Ladies Chicago Meetup)


**January 28 (upcoming Monday) - 6-8pm, free pizza**


Start 2019 the right way! Hear about different topics from `rstudio::conf(2019)`.


#### • What we'll do:


We'll be recapping `rstudio::conf`, an annual conference about all things R and RStudio! Each of our co-organizers attending the conference will give a lightning talk on a cool topic or tool they learned about at the conference. Get ready to learn about cutting-edge tools and new ways to make R work better for you.

 Deep Learning - Caroline Williams

 File Structure & File System Operation - Amy Yang

 Shiny - Natalie Jorion

 Reproducible Research - Katherine Simeon

 Base R vs. the Tidyverse - Ola Giwa

 Tidyverse Developer Day & Contributing to open source - Angela Li

### 2019 UIC Urban Innovation Symposium | January 25th (Free Registration)

The 2019 UIC Urban Innovation Symposium will return to its roots by focusing on collaborative creativity to solve a plethora of problems challenging the urban environment. The format will include expert deep dive lectures on specific topics as well as standard panel discussions to deliberate with experts and innovators within their respective fields. The discussions will touch on Claiming Spaces: The Role of Public Art as Place-maker; The Language of Environmental Justice; Future of Co-ops; Zoning, Land-use,

& Affordable Housing; Neighborhoods & Sustainable Design; and Transportation Equity. Don't miss this opportunity to explore perspectives different from your own, and come away with renewed energy for conversation and collaboration! **Information & register (free) at:**  
<http://www.uppsa.org/urban-innovation-symposium>

#### **Chicago Data Viz Community Meetup - two upcoming events:**

- [Tableau Public Intro Workshop](#) (tomorrow Jan 23rd at G2Crowd). Tableau Public is a free tool useful for exploring data and for creating interactive charts, maps, and data dashboards. We'll walk through building your first dashboard, which we'll use to play with data looking at Chicago's tree canopy. Come prepared with your laptop, power cord, and curiosity.
- [D3.js Workshop](#) (Jan 31st, location to be announced soon; **posted today!**). We'll walk you through how to create your first D3.js bar plot, complete with some fun interactions! This will be a beginner's workshop and no background knowledge of D3.js or javascript necessary.
- Join to be kept up to date on [upcoming talks and workshops](#) Feb, March, and beyond!

#### **Chicago Data Visualization Group Meetup: Data & Human-Centered Design**

The Chicago Data Viz group is resuming meetups in 2019 by kicking-off with Ann Conway, a design strategist who works with organizations worldwide to solve messy problems at the intersection of user needs, business opportunity and data. She is an Adjunct Faculty at IIT Institute of Design and teaches the course "Designing Data Driven Services". Ann will discuss how human-centered design can improve the outcomes of data science projects. This year, meetings will be held at The Connectory on the 5th floor of Merchandise Mart. [RSVP](#) -- currently a waiting list but often frequently changes.

#### **Happening at Metis (1033 W. Van Buren St. Chicago, IL 60607)**

- Metis One Day at Bootcamp - Saturday, January 26th 10am - 3pm (<https://bit.ly/2S0oT1H>)
  - Familiarity with beginner Python, Computer with Anaconda installed
  - Intro to Machine Learning, Intro to Pandas, Intro to Regression
  - Project: Predicting House Prices with Regression
- Metis Open House - Thursday, January 31st 6pm - 8pm (<https://bit.ly/2UbwVCk>)
  - Food and beverage will be served/hear from Metis Senior Data Scientists and Metis Chicago alumni, see a Metis capstone project presentation



#### **ChiHackNight Out! Tonight!**

Come join other hack-nighters for a bite to eat and a bite to drink after the presentation and breakout groups. We'll be heading to Monk's pub, 205 W Lake St, Chicago, IL 60606, at around 9:15 (after hack night).

(this is a production of the fun congress)

## Upcoming Chi Hack Nights

Chi Hack Night is booked out several months in advance. Here's what we have planned coming up! Remember that RSVP is mandatory, so [sign up for these dates in advance!](#)

- 1/29 *Open Hack*
- 2/5 City Bureau: [documenters.org](http://documenters.org) (find locations, dates, times and official records for your local government's public meetings)

**Check out the #events channel in Chi Hack Night Slack! Join:** [slackme.chihacknight.org](https://slackme.chihacknight.org)

## Job Announcements

**Check out the #jobs channel in Chi Hack Night Slack! Join:** [slackme.chihacknight.org](https://slackme.chihacknight.org)

### Senior Prescriptive Analytics Data Scientist, Cook County Assessor's Office

Salary: \$80,000 - \$100,000

The Senior Prescriptive Analytics Data Scientist supports the Chief Data Officer in maximizing the value of enterprise data. This entails creating or improving links between isolated databases and data stores, making data easier to find online, making it easier for analysts and policy makers to quickly access and transform data into the new formats and knowledge, and lowering the cost of consuming and using data. [Full job description here](#) Contact [rross@cookcountyassessor.com](mailto:rross@cookcountyassessor.com)

**BallotReady** is hiring! We are hiring [Remote Researchers](#) and a [Data Director](#) role. Please spread the word as we gear up for 2019 municipal races in Chicago and beyond and check out <https://about.ballotready.org/job-opportunities>.

**Chicago Transit Authority** is hiring an analyst in the Performance Management department. Ideally this person would have experience using SQL, Excel, and Python or R. For more info please go to <https://www.transitchicago.com/careers/> and search for job #180000A9.

**Civis Analytics** is hiring Software Engineers, Applied Data Scientists, Tech leads and more! See out postings at: <https://grnh.se/a5d8a4121>

Civis Analytics helps organizations use data to gain a competitive advantage in how they identify, attract, and engage their audiences. With a powerful combination of best-in-class data, cutting-edge software solutions, and an interdisciplinary team of data scientists, developers, and survey science experts, Civis works with leading public and private sector organizations to make data-driven decision-making essential to how they do business.

**onShore Security** is hiring a sysadmin / devops person for all GNU/Linux work.

Contact Karl Fogel ([@kfogel](https://twitter.com/kfogel) / [kfogel@opentechstrategies.com](mailto:kfogel@opentechstrategies.com)) for details. I used to work at onShore and am friends with the owners. It's a good shop, and I recommend applying if you might fit. I get no commission for any hire -- just want everyone to be happy :-).

**Hearken** is hiring: see [www.wearehearken.com/careers](http://www.wearehearken.com/careers) for more information; see also their Twitter feed at <https://twitter.com/wearehearken>. All positions are remote-friendly. Open positions include: Managing Director, Product Manager (both deadline Feb. 8), Business Support (junior role, Chicago preferred, deadline Jan. 28).

**Modern Healthcare**, a Chicago-based national magazine importantly covering the ins and out of this top topic, is looking for an [information technology reporter](#). [nina.sandlin {at} gmail](mailto:nina.sandlin@gmail.com) can put you in touch with a non-HR person who can tell you more about the position and work environment. This journalist will cover the tech side of healthcare, including the multi-million \$ field of healthcare records and the security of those records.

**Whai Technologies** is hiring for two new positions. We're looking for a full time front-end engineer, and a contract UX designer. We're a brand new Chicago-based company with the goal of democratizing AI and data science techniques for small businesses. Our approach focuses on transparency, rather than creating black-box systems to harvest any/all user data. You can find listings for both positions [here](#), and you can send any questions about the company or the roles to Soren Spicknall in the Chi Hack Night Slack group.

**Vertical Trail [not here to present]** is a consulting firm which delivers cloud-based & data-driven tech solutions. We are currently hiring several positions, including:

- 1) Data Engineer
- 2) Software Developer(s):
  - UI/Angular/JS
  - Python
- 3) Cloud Engineer
- 4) More here: <https://www.verticaltrail.com/company/careers/>

If you have any questions, please feel free to message me our VP Tim (mail, <https://www.linkedin.com/in/tim-hughes-9335482/>).

## Presentation Notes

*Help us take notes and share relevant links during the presentation! Check out old presentations on the [Chi Hack Night YouTube channel](#).*

Link to website: <https://illinoistrafficstops.com>

Link to Python Package: <https://github.com/JustDSOrg/itssutils>

Link to Data:

<https://www.dropbox.com/sh/71mshhpdsvidz01/AACwY9ymsgJVHE2BmDSIS4eoa?dl=0>

Data from Illinois Traffic Stop survey -- about to expire in July 2019. ACLU wants it to continue. This is from when police stop drivers and they fill out a card about various information re: driver.

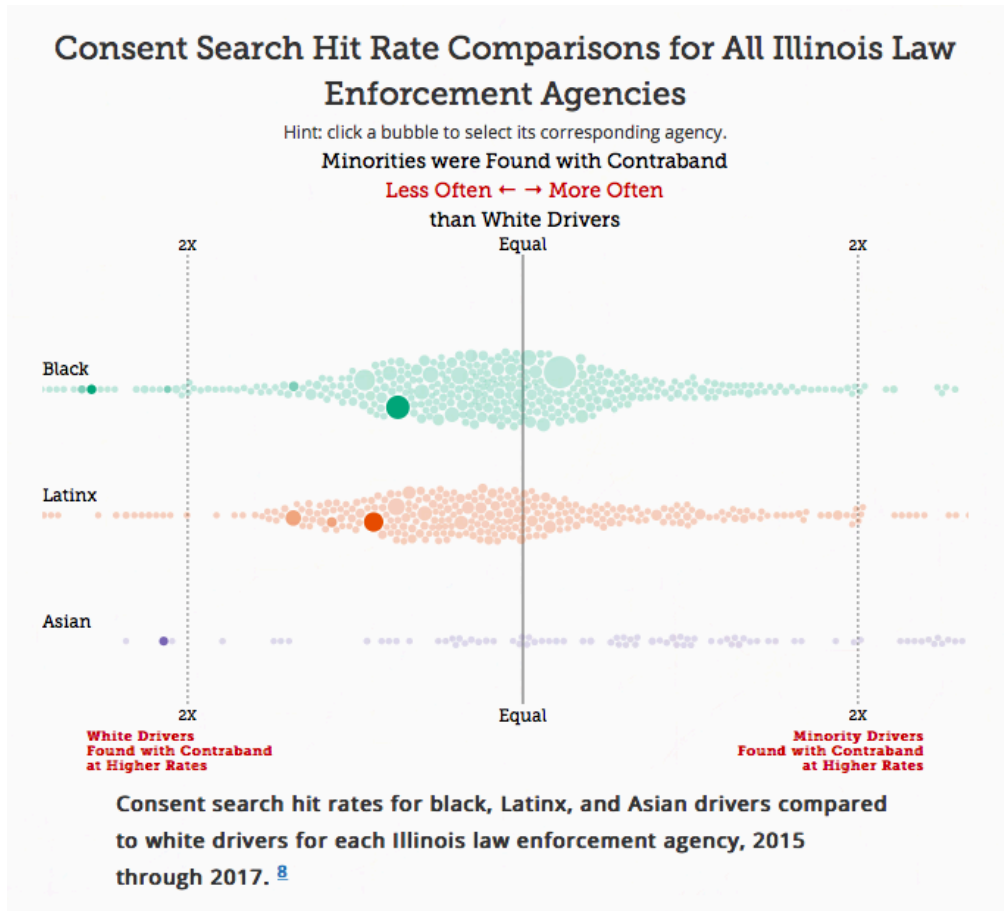
Questions to answer:

- Visualizing data to convey information in an easy to understand way
  - Representing rate comparisons - if rates between white/black/hispanic are equal, should be along  $y = x$  line
  - Problems with looking at the graph and not knowing what it meant
  - How much more likely were minority drivers to be searched than white drivers?
- How to show statistical significance within a visualization?
  - Used opacity to draw the eye to results that were significant
  - Also included individual bar graphs

Contraband hit rates need to be looked at:

- Significantly statistically different rates at which contraband is found between minorities/whites -- more often found with white drivers





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- Police ask to search minority drivers significantly more than white drivers
  - Though there is an option to say no, people feel like they have to say yes
- Next steps:
  - Call your representative to encourage the traffic stops survey to continue (bill will change name)

## Presentation Questions

Please add your questions here. Hosts will select questions from here. If you see a question place a \* by it, and it'll get moved higher up the chain.

Example:

“Q: What happens to Mickey Mouse when he rides the Mad Hatter’s Tea Cups?”\*\*\*\*

A: He becomes Disney!!

Q: Is it a police allocation problem? Ie. high violation areas get lots of police, then police need to do something.

*A: That's something that collecting the data allows us to tackle. Focus in project is on consent searches -- these are discretionary searches, gives a different story than just pulling ppl over. Focus is on things that happen after search is made. Don't look at stop rate.*

Q: What are some of the challenges of working in a team of technical and nontechnical collaborators? How did you overcome those?

*A: Not many, but possibly teasing out the nuances of statistical significance. What are p-values, and is that number just arbitrary? Getting a visual early helped with barriers of technical communication.*

Q: Is there data on individual people/police ID numbers conducting stops?

A: Don't release that data publicly, also record beat location (just numbers) -- some depts publish. But data is dirty. They have it, but don't release info publicly. There are certain departments that you can figure that out for, ie Chicago?

Q: What are concrete plans for this project going forward?

A: Continue collecting data; public and law enforcement agencies should take a look and evaluate where disparities are. Example of Urbana -- chief of police looked at it, talked with community, and numbers improved. Want to also find places where numbers are improving: often has to do with new leadership. Want to highlight success stories as model for other depts to follow.

Q: How to address the argument that it's just a few bad cops, as vs. a systemic issue?

A: Check out book called [Pulled Over](#): makes case that it's policies, unconscious bias that leads to this. One example of agency policy that led to disparities: Illinois State Police - pull over everyone for investigatory stops, then use that as an opportunities to investigate other crimes → leads to disparities when you do these investigatory stops (that are basically racial profiling).

Q: Any research into racial identity of police?

No information available, so no.

Q: Can you talk a bit about your tech stack and some challenges faced when handling and manipulating the data?

We mainly used Python and pandas. The data are right on the edge of being too big for memory - this was the fastest + easiest way for us to move quickly. In hindsight, and perhaps moving forward, it would make sense to stick this into an actual database.

Part of the challenge is that data from before 2011 has different fields, so it makes it hard to do a longitudinal analysis. Putting all of it in a NoSQL db would probably be a good idea.

Q: Have you released the code used in your analysis?

Yes: <https://github.com/JustDSOrg/itssutils>

Released as a package on pip - repo also contains a starter notebook.

Q: How do you anticipate law enforcement agencies finding your site? Do you know if they're currently using it?

The site just launched last Monday, but the data from is available from the Illinois Department of Transportation to anyone who requests it. We don't know which agencies have been using the data, but all agencies know that the data is collected since they have to report it. We're open to suggestions on ways to bring agencies to this website.

Continued on the hypothetical pull-over:

There is a qualitative difference between Psychology and Sociology.

Psychology does not equal micro-sociology. Sociology does not equal macro-psychology.

If the discipline of policing is discriminatory, then it does not matter what sort of 'cultural awareness training' folks go through.