



#266: Biased Election Maps: Fighting Gerrymandering in 2020

Date August 15th, 2017

Sponsor [City Base](#)

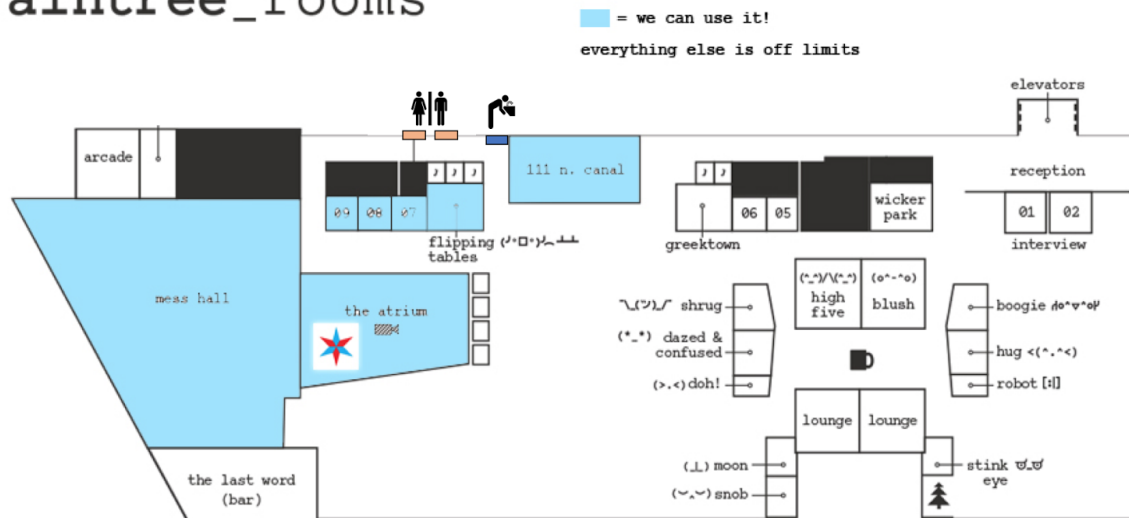
Website chihacknight.org

Hosts: Christopher & Nina

Welcome! Some things to know

- There is food! You are also welcome to take up to 2 non-alcoholic drinks from the 'everyone' refrigerator (not the food in the fridge, please).
- [Twitter](#): share using the **#chihacknight** hashtag. Follow us [@chihacknight](#)
- Join our [Slack](#) channel: <http://slackme.chihacknight.org>
- Wifi: PayPalGuest / SafePayments
- Are you interested in co-hosting? Talk to Christopher/Derek!
- Please keep announcements, job postings, breakout pitches less than 30 seconds
- [Hack Night Radio](#): A collaborative playlist that plays before/after Chi Hack Night
- Braintree space: The rooms in [Blue](#), 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. Don't touch what's not yours - "Scooters, Monitor Plugs, the little floating cloud lights"

Braintree_rooms



Agenda

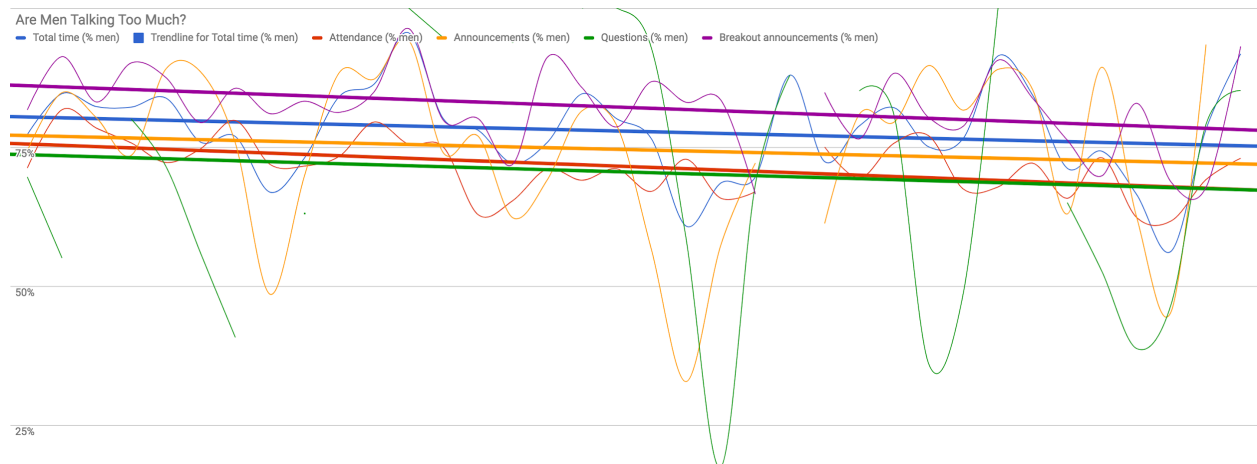
- 6:00 pm Eating and socializing
- 6:15 pm Welcome, house rules & three-word introductions (welcome, first-timers!)
- 6:30 pm Announcements
- 6:45 pm Presentation
- 7:15 pm Highlight breakout groups
- 7:30 pm Break into groups and hack
- 9:30 pm Pack up and leave

Announcements

Moderator Note: Please keep announcements under 30 seconds. If you're present to make an announcement or a job posting please put your name next to the announcement.

Are men talking too much? Let's see? -

ChiHackNight is dedicated to building a diverse and inclusive community. To that end, we use arementalkingtoomuch.com (a Chi Hack Night project by Cath Deng) to get a rough idea of the proportion of not-dudes in attendance at and participating in Chi Hack Night. Since we started measuring this, we've used the data to make small tweaks to our process, resulting in small improvements to both the gender diversity and inclusiveness. But there's still much much more to do! If you want to help improve our D&I, help us hold ourselves accountable by doing the measurements sometimes! Join the [#arentalkingtoomuch](https://twitter.com/arentalkingtoomuch) or talk to Yonatan (@yjkogan) or Andy (@andy) for a super quick crash course.



Also, let @andy know in the Slack channel or in person about misgendering concerns on anyone's behalf (e.g. a message saying '-1 dude' or '+15s non-dude' to adjust the dude count or time) and I'll adjust the stats after the fact. [Running results here.](#)

Should Hack Night join the Code for America Brigade Network?

We are discussing whether Chi Hack Night will join the Code for America Brigade Network. If you have thoughts or questions about this, please share them in the discussion thread on Loomio: <https://www.loomio.org/d/0SH5OV9G/chihacknight-and-code-for-america>. It's helpful to know what kinds of questions you have about becoming a brigade. If you add your questions in Loomio, we can get questions answered in an organized way and document the answers there.

Quick info about Code for America: <https://www.codeforamerica.org/how-tos/start-a-brigade>

Invite to Loomio: <https://www.loomio.org/invitations/8f371f9b8f8f309f2d7e>

University of Chicago TechTeam

TechTeam, housed at the University of Chicago Institute of Politics, is excited to provide teams of talented, committed UChicago students to help local government and community-based organizations with their technological and digital needs, specifically digital outreach (social media/email), website development, and data analytics. We have additionally helped organizations with web scraping, API construction, and app development. You can read more about us and our past work at [our website](#).

We are currently looking for organizations that could use pro bono support in the types of projects outlined above (though feel free to additionally submit other types of technology projects) in the Fall or Winter of 2017. Please fill out [this form](#) to let us know about a technical or digital project that TechTeam may be able to help you with. If you have any questions, please contact John Veillette at johnv@uchicago.edu.

Fantasy Civics

Fantasy Civics is a fantasy sports-style game about Chicago alders! Below is a sneak preview of the new version of the game, which will be released next month to people who have signed up at bit.ly/fantasycivics. Game data is sourced from the city data portal and DataMade's Open Civic Data API.

You can play the staged version of the game at [this link](#) (unfortunately not mobile-friendly... we're working on it!). Please post your feedback on our [ChiHackNight GitHub issue](#)!



Are you ready to play the fantasy sports twist on Chicago city politics?

Below, you can see each alder's score from **April**.

Assemble a roster of five alders and share the link with your friends. Check back at the end of **May** to see whose team scores the most points this month!

[Share Roster](#)

[Get Updates](#)

Your Roster

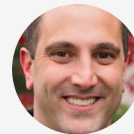
Name	Ward	Total	Breakdown	
 Joe Moreno	1	1228	View	Drop
 Brian Hopkins	2	882	View	Drop
 Pat Dowell	3	761	View	Drop
 Ameya Pawar	47	1127	View	Drop
 Anthony Napolitano	41	437	View	Drop

The League

Name	Ward	Total	Breakdown	
 Ameya Pawar	47	1127	View	Add
 Anthony Beale	9	515	View	Add
 Anthony Napolitano	41	437	View	Add
 Ariel E. Reboyras	30	803	View	Add
 Brendan Reilly	42	1824	View	Add
 Brian Hopkins	2	882	View	Add
 Carlos Ramirez-Rosa	35	957	View	Add

Anthony Napolitano

Ward 41



Scores from 4/1/17 to 5/1/17:

Category	Score
Fulfilled rodent baiting request	14
Fulfilled graffiti abatement request	12

Events

Please only list events coming up in the next 2 weeks

[R-Ladies Chicago: August Meetup](#)

R-Ladies is a global initiative to promote gender diversity in the R community. Our goal is to make R more popular and accessible especially among women. Anyone with an interest in R is welcome. This is our second Meetup and we're looking for women to lead a workshop on an R for data science topic. Dinner will be provided (thanks MSFT!)

Wednesday, August 23, 6-8pm, Microsoft Technology Center, 200 E. Randolph St. Suite 200 (Questions? Sponsorships? Email me at angela@rladies.org)

Cyber Defence Competition - Jakob

Argonne National Laboratory is hosting its third Cyber Defense Competition (CDC) on December 2, 2017. At this competition, students are given the responsibility of keeping an Industrial Control Energy System (ICS) running in spite of attacks from the Red Team, keeping their network secure, and providing 100 percent uptime of systems for Green Team members who test the functionality of the energy system. Argonne is unique in that students are able to interact with real, functional ICS devices at the competition. While we are trying to grow our presence and visibility with students, we are especially interested in increasing the amount of females applying for our CDC. In year one, seven teams competed and one female was present on a team. In year two, we had fifteen teams compete, with two females present. We would like

to dramatically increase the number of females present for year three. If you know of any students interested in competing in our third CDC, please encourage them to visit cyberdefense.anl.gov for more information.

Chicago Women Take Action

[CWTA](#) is a local group with a depth of knowledge of political pressure points for ways to make change, and is interested in two-way knowledge sharing with folks who are doing things with tech. They will be sharing a list of issue committees going forward, but this [general meeting](#) devoted to strategy, tactics and areas of focus is the best entry point if for those interested in opportunities to engage with CWTA. **Monday, August 21 6pm** at Bar Louie, 47 W Polk.

[Digi.City Connects Chicago Roundtable](#)

Please join us for a discussion on Chicago's smart city efforts that will focus on economic development and digital infrastructure. Digi.City is honored to host an esteemed panel to explore how governments, industry and communities can collaborate to expand the social and economic benefits of 21st century technology. (Tom Schenk Jr and Christopher Whitaker on the panel)

[Connect Chicago August Meetup](#)

At the next Connect Chicago Meetup, we'll have a conversation about technology training programs supporting Chicago's senior population. We'll hear from two important local projects: [Microsoft's DigiSeniors](#) Curriculum & the [Chicago Public Library's Digital Learn Platform](#). Come join the conversation and help fuel an equitable tech ecosystem in Chicago! Meet and network with computer trainers, nonprofit professionals, technologists, community advocates, and fellow residents who care about digital inclusion in Chicago. Please RSVP by 12pm on 8/17 so we can get an accurate count for lunch and provide building security with a list of attendees. Thank you!

Jobs

Post your civic technology, government, research & journalism jobs here! Job postings will carry over to next week.

City of Chicago Director of Digital Experience and Design

New position to oversee UX for the city's online projects

https://www.cityofchicago.org/content/dam/city/depts/dhr/general/Deputy_CIO_DoIT-Digital_Experience_Design_Posting.pdf

Chicago Foundation for Women: Data + Web Associate

The Data and Web Associate administers the foundation's fundraising database, ensuring data accuracy and integrity. This position is responsible for data analysis, applications support, list management, business process and other services related to information and web systems used by the Development and Communications team. The Data and Web Associate also assists with the management of the Foundation's website and design.

The deadline to apply is Friday, August 11. [The full job description is available here.](#)

eSpark Learning has 3 open engineering roles, if you're interested in Ed Tech and want to have an impact in education in this country please reach out to meghan@esparklearning.com or check out our website <https://www.esparklearning.com/company/careers>
Thanks!

Strata Decision Technology has multiple open .NET Developer, Big Data Software Engineer and QA Engineer roles. Strata's healthcare analytics platform is used by 1 in 5 hospitals in the country! Check out open positions at: <http://stratadecision.theresumator.com/apply/>. Please contact Sana at srazvi@stratadecision.com if you're interested.

Civis Analytics has 2 open engineering roles. Civis is a fast growing, Chicago-based data science company that strives to make the world a better place using data. We're looking for a DevOps engineer and a Senior security engineer to join our growing tech team! If you are interested, please email Nollie at nbrown@civisanalytics.com or apply directly [online!](#)

Cook County Forest Preserves Hiring Graphic Designer

<https://cookcountyil.taleo.net/careersection/jobdetail.ftl?job=00120683&lang=en#.WXfRdO0Vfw4.twitter> (this posting is no longer available)

beyond.uptake -- Technical Project Manager (Jay)

beyond.uptake is the philanthropic and civic innovation arm of **Uptake**, a Chicago-based predictive analytics SaaS platform provider. We leverage the power of data to create predictive analytics solutions for nonprofit, philanthropic, and government partners. We are looking for a Technical Project Manager to coordinate social sector projects.

https://uptake.com/careers?gh_jid=762147

Snap Research Scholarship: (for undergrads and Masters' students)

<https://snapresearchscholarship.splashthat.com/>

American Astronomical Society: Junior Level C# Software Developer

(Open Source Alert: This is an open source coding position; ask Karl Fogel for more.)

AAS Seeks Junior Level Software Developer for WorldWide Telescope

We live in an exciting era of astronomical discovery. We can map the night sky with telescopes placed in high altitude deserts, we have peered into the early universe with telescopes orbiting the Earth, and we have witnessed geysers explode off of one of Saturn's 62 moons. From the vast diversity of astrophysical phenomena in our Universe come the challenge of visualizing and sharing this new knowledge.

The American Astronomical Society's [WorldWide Telescope](#) project enables terabytes astronomical images, data, and stories to be viewed and shared among researchers, exhibited in science museums, projected into full-dome immersive planetariums, and taught in classrooms from middle school to college levels.

The American Astronomical Society is seeking a highly motivated contract software developer to help implement new features to support the sharing and manipulating of astronomical data. The ideal candidate is a junior level developer with astronomical knowledge.

Requirements:

- 2-3 years C# programming experience
- Experience with 3D graphics

We get excited about candidates who:

- Have expertise in astronomy
- Have knowledge of the Virtual Observatory and astronomy data standards
- Experience with image processing algorithms
- Have experience with open source software
- Have experience with cloud-based services

If you are interested in serving as a contractor for this project, please submit your CV, a letter of interest, and all programming certificates you have obtained to rfp@aas.org. The letter of interest should include your experience programming and collaborating on similar projects and at least three business references.

Chicago Transit Authority (Elias)

CTA is hiring an Analyst to join its Performance Management team. You'll work with business units throughout the agency to identify performance goals, source and model necessary data, and provide insightful analyses and reports. Additionally, you'll assist on new initiatives in business intelligence and predictive modeling. Prior experience with big data, SQL, and R and/or Python are strongly preferred. To learn more or apply: email your resume to Elias Mechaber (emechaber@transitchicago.com) AND submit to https://irecruitment.transitchicago.com/OA_HTML/lrcVisitor.jsp

Jack Thorne - Senior Software Engineer
jack@kilmer.io

Presentation Notes

Please add a line before typing to ease collaborative note-taking.

Fighting gerrymandering in the year 2020.

Metric Geometry and Gerrymandering Group (MGGG), organized by Tufts University. They have a future conference at UW Madison on October 12-15, 2017.

Gerrymandering = "G" - it's too long to type out every time. Not illegal, or unconstitutional.

Pennsylvania is a good example: 13 seats to R, 5 seats to D in a state that is almost evenly split between D and R voters.

Why is the difference so big?

It's deliberately drawn that way by the reps in power who control the redistricting process that benefits their party. No party has said they're against the G in their favor, but in the current situation, with early voting (EV) and automatic voter registration (AVR), it ends up getting politicized.

1812 - a guy named Gerry (Gary) drew a district that looked like a salamander, or a Gerrymander, according to a political cartoon drawn at the time.

How does a state get gerrymandered?

Well, the Census counts the people in the country every 10 years (decennial Census), which sets how many districts each state gets, and then states are supposed to redraw the district boundaries so that each has equal population.

No federal rule on how districts should be drawn. Alaska has 1 district.

This map shows how each state does it. In some states, there's an independent commission while in other states the legislature does it.

History

In the early 1900s, there was no requirement that states had to redraw boundaries after each Census.

1942 Supreme Court justice Felix Frankfurter - he didn't want the Supreme Court to get involved.

1962, [Baker v. Carr](#) - Frankfurter falls - lawsuit that said an urban district had fewer reps per capita than a rural district.

There was a big shift in the 1960s!

Something about racial intent.

2013 - Voting Rights Act from the 1960s is being challenged. Section 5 was thrown out. It said districts in areas that have had discriminatory voting practices in the past should get special scrutiny. Newly drawn districts would have to be reviewed by the Justice Department. But only

0.1% of plans have been rejected by the Justice department, but that doesn't mean we should get rid of the regulations. It would get worse without that oversight!

There might be another big shift in 2020, because of advances in "big data", GIS, and algorithms.

Could you draw a map that is ruled unconstitutional?

Partisan G is becoming a more serious issue. The SC is still cautious about this, and there's a case coming up in the court about a Partisan G issue. The last time G was in the SC, Texas redrew the districts in the middle of the decade.

Justice Kennedy talked about the use of technology in G/redistricting.

If you could come up with some standards, the court would like to see them!

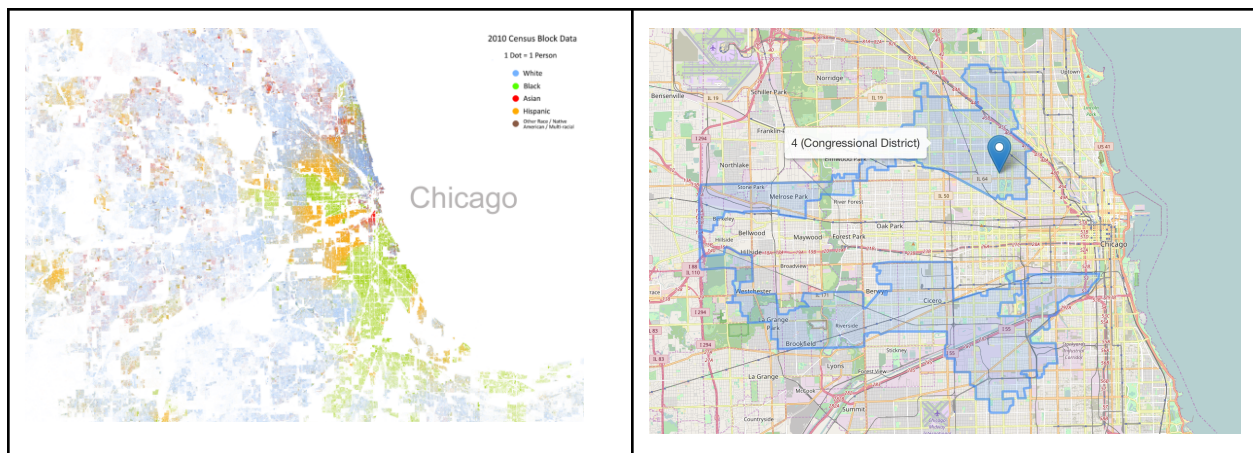
The "G school" I went to, we learned that we have to be able to "prove it" and be able to explain it to a judge like Justice Kennedy.

It's really easy to use technology to draw a Partisan G map, but we are trying to use technology to draw non-partisan G maps, by using algorithmic mapping.

Brian Olson has created an algorithm that draws "compact" district.

Please stop!, Nick said. Ones like Olson's are drawn entirely by computer, and without taking into account an individual's fairness in representation in Congress.

How many of you have seen [this map](#)? It's Congressperson Luis Gutierrez (4th) district. And how many of you have seen [this map](#)?



It's the point map the NYT made that shows the location of people by race. When you overlay them, you see that the 4th District is almost entirely Hispanic. This is called a Majority-Minority district.

If you have a JPG of the map shown in the presentation, which overlaid the two Congressional districts with the racial dot map, please add it to these notes.

What's a good way to represent minorities in congress? If there's a "community of interest" (i.e. Hispanics), they should be able to elect someone that represents them, and their community shouldn't be split up into multiple districts.

Challenges to the map have happened in Lowell (Texas?), and in Minneapolis (first Hmong, Somali, and Hispanic city council members). There's a growing collection of stories that highlight what happens if you redistrict the "right" way or the "wrong" way.

Example: NC's 12th district.

The proposed district was struck down on the basis that it was racially-motivated. The state's defense was that it was (legal) partisan gerrymandering.

- Moon Duchin, a math professor at Tufts, founder of MGGG, using curvature geometry.
- (missed this one)
- Supercomputers (Yan Lui, Wendy Cho) - the computer creates millions of districts and maps, that compares the maps to real world maps that are identified as partisan and biased. (Did I summarize that correctly?) [University of Illinois](#), paper in [Election Law Journal](#)

github.com/gerrymandr - Script for Leaflet web maps to add compactness scores to your map, based on your choice of 4 methods. [Methods explained by Azavea](#)

1. Polsby Popper - ratio of the area of the district to the area of a circle whose circumference is equal to the perimeter of the district
2. Schwarzberg - ratio of the perimeter of the district to the circumference of a circle whose area is equal to the area of the district.
3. Convex hull - ratio of the area of the district to the area of the minimum convex polygon that can enclose the district's geometry.
4. Reock - ratio of the area of the district to the area of the minimum bounding circle that encloses the district's geometry.

Why does "compactness" matter?

>> One of the "traditional" redistricting principles, low compactness is considered to be a sign of potential gerrymandering by courts, state law and the academic literature. More often than not, though, compactness is ill-defined by the "I know it when I see it" standard. Geographers, mathematicians and political scientists have devised countless measures of compactness, each representing a different conception, and some of these have found their way into law. (from the [Redistricting Nation glossary](#))

"The battle for our tomorrow starts today" (Terminator TV series). I think it applies to our democracy, too. The 2020 Census starts next year.

Q&A

"Is there a mathematician in the room?" - Yes, and Mark said: You can measure the average connectedness between people and the center of the district, you want to have some sort of community. Well, it's whatever metric is important or fair, is it proximity to other people.

(sorry, I stopped listening to all of the questions after the first one)