intro

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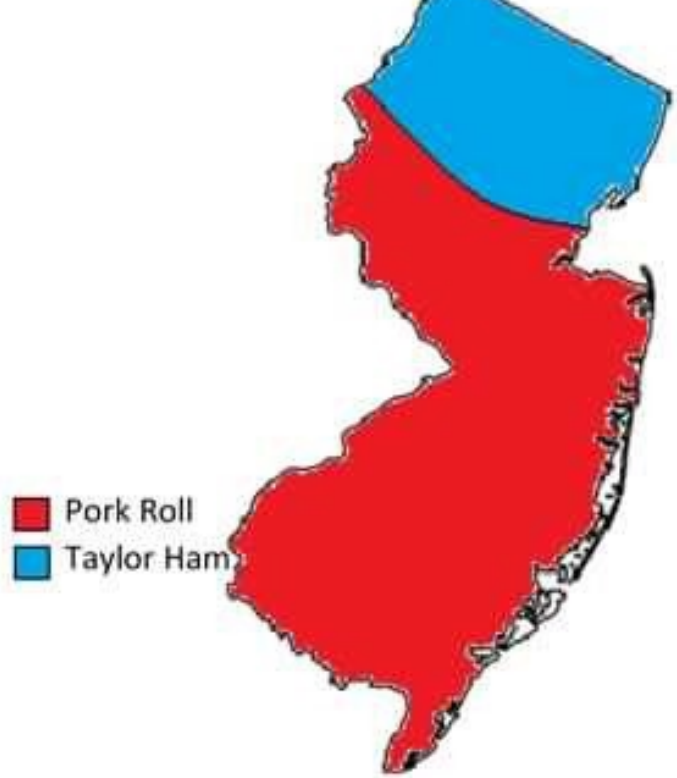
outline


New York Sports Teams
Philly Sports Teams


Tells someone where they live by
Turnpike exits
Parkway exits
Neither


Thinks they are New York
Thinks they are Philly
Pineys
The Shore
Farmlands
Basically Alabama
Hill People
Diversity
Armpit of NJ
Knock-off Vegas


Pork Roll
Taylor Ham


North Jersey
South Jersey
Claims Central Jersey Exists


Driving
Uses their turn signal
Uses their middle finger

outline

no food no drink

- absolutely no food and no drink in the lab!
- use the lounge in the back!!

before we start: extra credit opportunities

- present something we did not cover (has to be GIS, of course)
- present alternative way of doing something that we have covered
- civic engagement: Michael D'Italia
  michael.ditalia@camden.rutgers.edu

about myself

- theaok.github.io

yourself? (see if others overlap: can collaborate!)

- what do you research?
- using any data or want to find any data?
- what do you expect from this class?

weekly labs; do we need that?

- find out good time for weekly labs, say Thu 2-2.30?

2 keys to success

- start early on ps
- ask questions

approach

- applied, data-driven
- you are encouraged to collaborate (prep for class, ps, paper)
- free to choose data/topics as long as relevant to the class
  - bring your own data; kill 2 birds with one stone
  - you need to have some data for this class
  - don't worry, as long as you have any interest, you are likely to find data about it
  - we'll go over data sources in few classes

before and after the midterm

- 1st half basics, go fast
- 2nd half more extras, relax with pace of material but work on paper (final ps/presentation)
- before: basics, data, theory, general
- after: more specific and advanced topics
- more research oriented

communication

- during the class interrupt me as often as necessary
- after the class email me if you have questions – i check email frequently
- everyone got welcome email? no? email me
- stop by my office!

ps tips

- important: people never follow it
- start early
- late ps *not* accepted
- ask questions early!
  - do not hesitate to ask questions
  - there are no “silly” questions
  - it is normal to get stuck and ask questions when learning new software
- in class: ask questions / tell me to go slower if needed (i have an impression that i go too fast sometimes)

class website=syllabus

- slides are linked from the syllabus
- i try to post about a week ahead, but tentative only
- print, if you like, right before the class–i am updating continuously
- let's see ps directions and esp mediawiki

the difference

- this class is different from other classes
- fundamentally this class is about software
  - and hands-on, applied, usage of it
- it is impossible for me to cover everything that you may bump into
- that's why it is key for us to communicate well
  - don't hesitate asking the questions
  - use email extensively (eg couple times per day)

outline

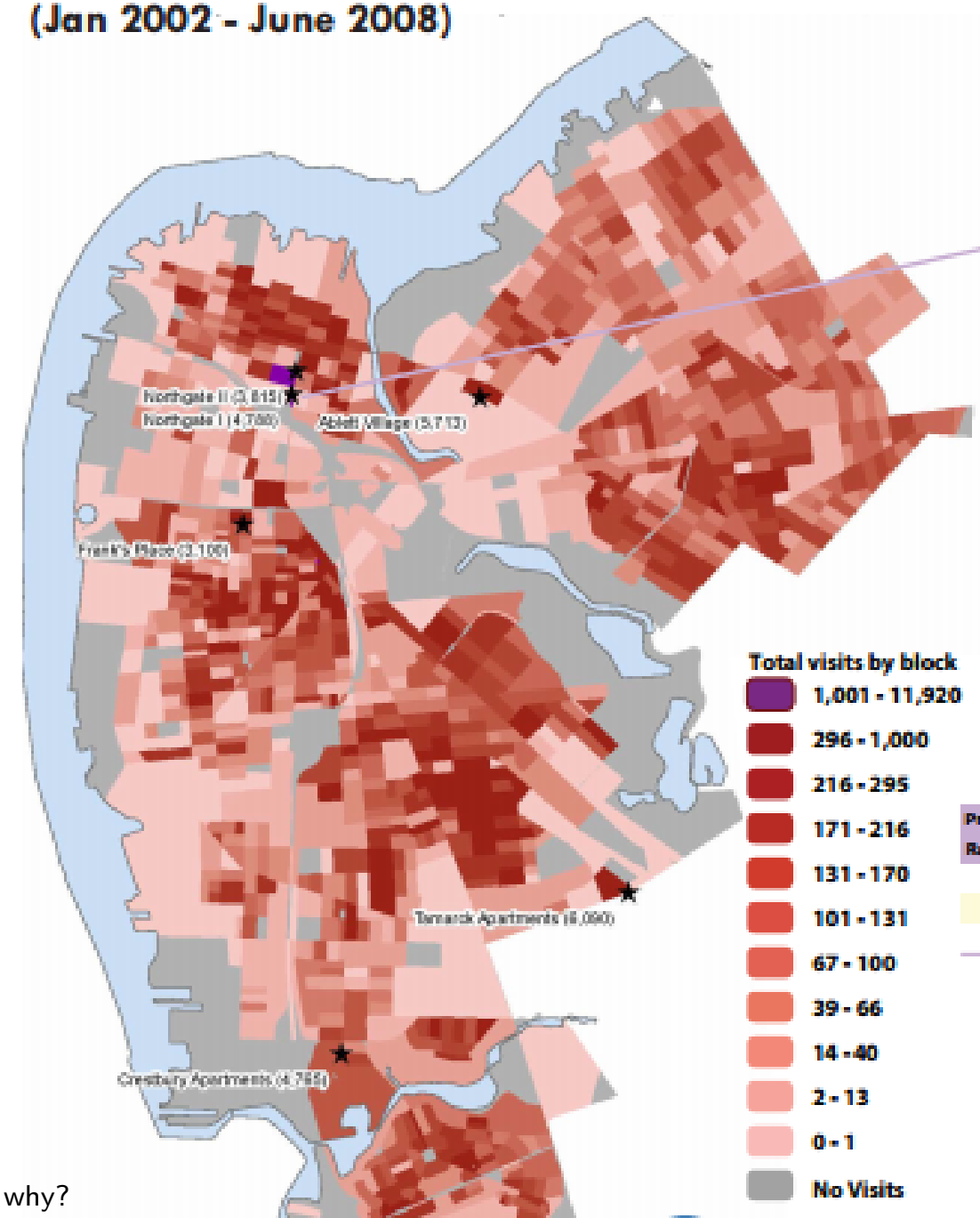
a general thought about maps

- maps are always useful
- no matter what you study it always takes place somewhere and place matters
- so you should use maps for whatever you study in *all* other classes
- and all other projects outside of school
- it will always help with understanding of what is going on

so what? geography matters!

- with maps you get insight you won't get otherwhise
- oftentimes all you have to do is to map it
  - and think **a lot** about what you have mapped
  - and what it really means
  - eg Dick De Veaux: faulty devices around Rocky Mountains
  - eg Cooper's Hospital dr Brenner: map ER visits home addresses
  - send nurses to homes and cut costs dramatically and improve health (i think!, correct me if i am wrong!)

Inpatient and Emergency Room Visits in Camden, NJ
(Jan 2002 - June 2008)



Northgate I Public Housing

	Visits	Patients	Charges	Receipts	Collected
Cooper	3,172	749	$42,144,897	$4,994,658	12%
Lourdes	811	337	$7,848,899	$1,028,611	13%
Virtua	805	331	$1,742,487	$345,092	20%
2005	838	378	$10,834,420	$1,268,373	12%
2006	738	355	$6,867,995	$881,549	13%
2007	790	369	$7,979,262	$901,181	11%
ED	3882	978	$6,150,592	$864,019	14%
Inpatient	906	408	$45,584,781	$5,504,342	12%
Total	4,788	1,078	$51,735,374	$6,368,361	12%

Primary Diagnosis		
Rank	ED	Inpatient
1	abdominal pain (789.0)	live birth (V3X.0)
2	acute URI NOS (465.9)	chest pain (786.5)
3	chest pain (786.5)	congestive heart failure NOS (428.0)

outline

what is there?

- GIS Geographic Information Systems
  - Geographic: Cities, Roads, Rivers, Countries, etc
  - Information Systems: data, software, programming,
  - like MIS (Management Information Systems) or IT
- GIS=CS(graphics, database/sys adm, coding)+geography
- really, much of the GIS is data management
- geographic=geospatial=spatial (synonymous)

past and future

- much of the gis has been (still is) done with ArcGIS/ArcMap
  - this is more of a dinosaur, however
- the future is open source software like QGIS
- and internet companies like Google

what we'll be doing

- obtain (download, but also eg smartphone/gps), manage and display data
  - a display is usually a map
  - really, this class is mostly about producing maps
- there is much more to the GIS, of course
- this class is applied mapping

maps

- keep in mind that a map is visual representation of data
- there is always a database behind a map
- (database is like spreadsheet, but bigger and fancier)
- or more precisely:
- there is sometimes a map on the top of the database
- so maps is just data in the picture
- the bottom line is data !

why GIS in social science?

- local government
  - zoning, public works (streets, water supply, sewers), garbage collection, land ownership and valuation, public safety (fire and police)
- federal/state
  - natural resource management
  - highways and transportation
- academics: ALL "no matter what you study it takes place somewhere"
  (place always matter)
  - but especially public health/epidemiology and criminology

why GIS?

- businesses
  - retail site selection & customer analysis
  - logistics: vehicle tracking & routing
  - natural resource exploration (petroleum, etc.)
  - civil engineering/construction
- so you see that you can do a lot with GIS
- yes, it gives you specific, marketable job skills

maps are fun!

- let's look at some interesting maps
- see patterns that cannot see otherwise
- absorb easily lots of information
- compare easily

the big sort

- "The big sort
  why clustering of like-minded America is tearing us apart"
- America polarizes by county
  (counties are becoming either R or D)
- `http://www.thebigsort.com/maps.php`

who is your city

- http://www.creativeclass.com/_v3/whos_your_city/maps

outline

server/cloud

- we will try to use apps.rutgers
- why bother with this?
- this is the future, in 10 years everybody will use it
  - so you may get used to it now
- and a part of data management is to use a remote server
  - again GIS≈data management
- faster, more reliable, accessible from anywhere, persistent sessions
- but you can run it on any pc, any OS

today

- first, the difficult part
- connect to apps.rutgers

we'll work on apps

- make sure you have it enabled
- go to `http://netid.rutgers.edu/`
- on the left, click "service activation"
- and activate "apps cloud service"

connect to apps.rutgers

- Either go to `https://apps.rutgers.edu` or `https://apps.rutgers.edu/novnc/` (clunkier, but works on tablets)
- To copy files, you can either `https://apps.rutgers.edu`
- For a nicer interface install `http://winscp.net/`, run it and connect to: Host name: "apps.rutgers.edu"; User name: "your Rutgers NetID"; Password: "your Rutgers password"

but you can just use your PC

- QGIS is open-source
- just google it...
- then you can brig your own laptop and work there...