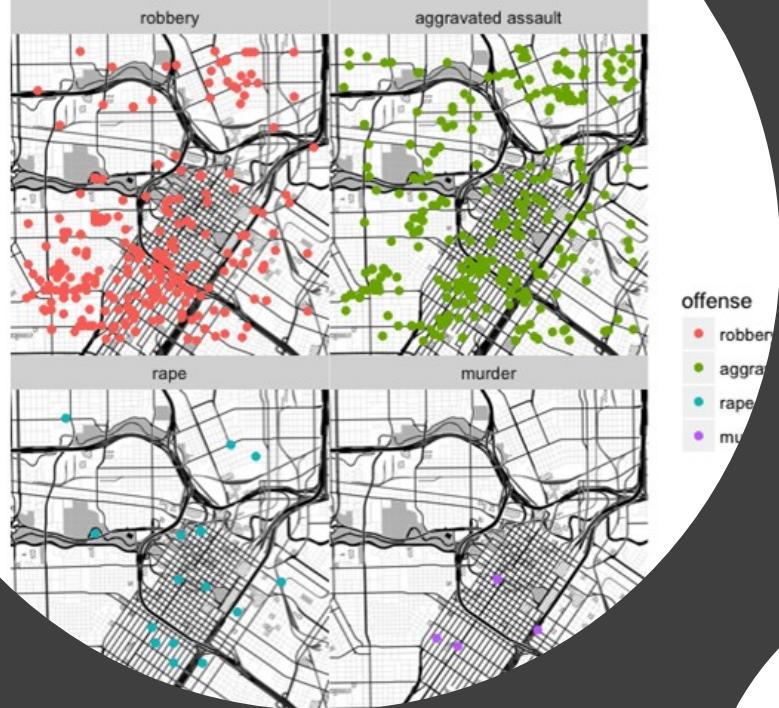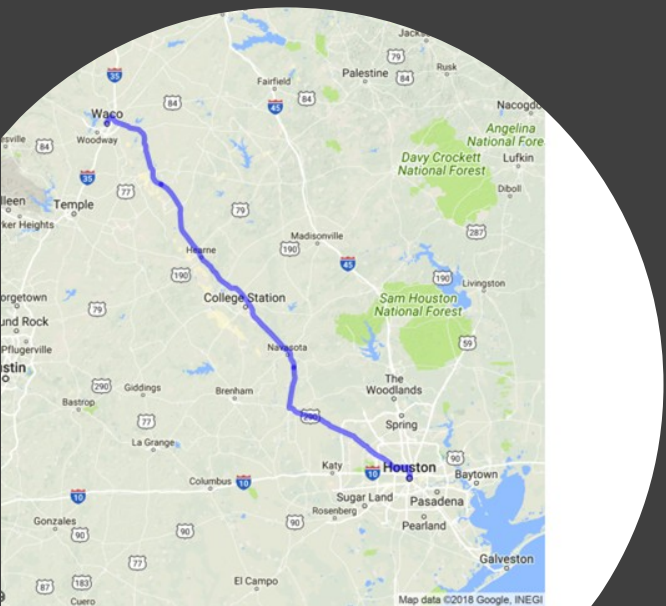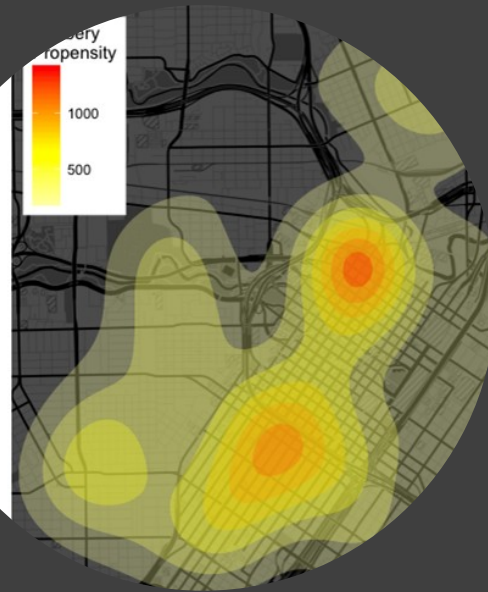# ggmap
Spatial Visualization with ggplot2

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- a collection of functions to visualize spatial data and models on top of static maps from various online sources (e.g Google Maps, Stamen, Osm, Cloudmade)

- plot maps from ggmap, and then use ggplot2 to plot points and other geoms *on top of the map*

HOW IT WORKS

The basic idea driving ggmap is to take a downloaded map image, plot it as a graph using ggplot2

Plot additional content layers of data, statistics, or models on top of the map.

In ggmap this process is broken into two pieces

- (1) downloading the images and formatting them for plotting, done with get_map
- (2) making the plot, done with ggmap.

GET_MAP

- provides a general approach for quickly obtaining maps from multiple sources

- Explore different kind of maps

- 4 map "sources" to obtain a map raster, and each of these sources has multiple "map types"

stamen: maptype < - c("terrain", "toner", "watercolor")

google: maptype < - c("roadmap", "terrain", "satellite", "hybrid")
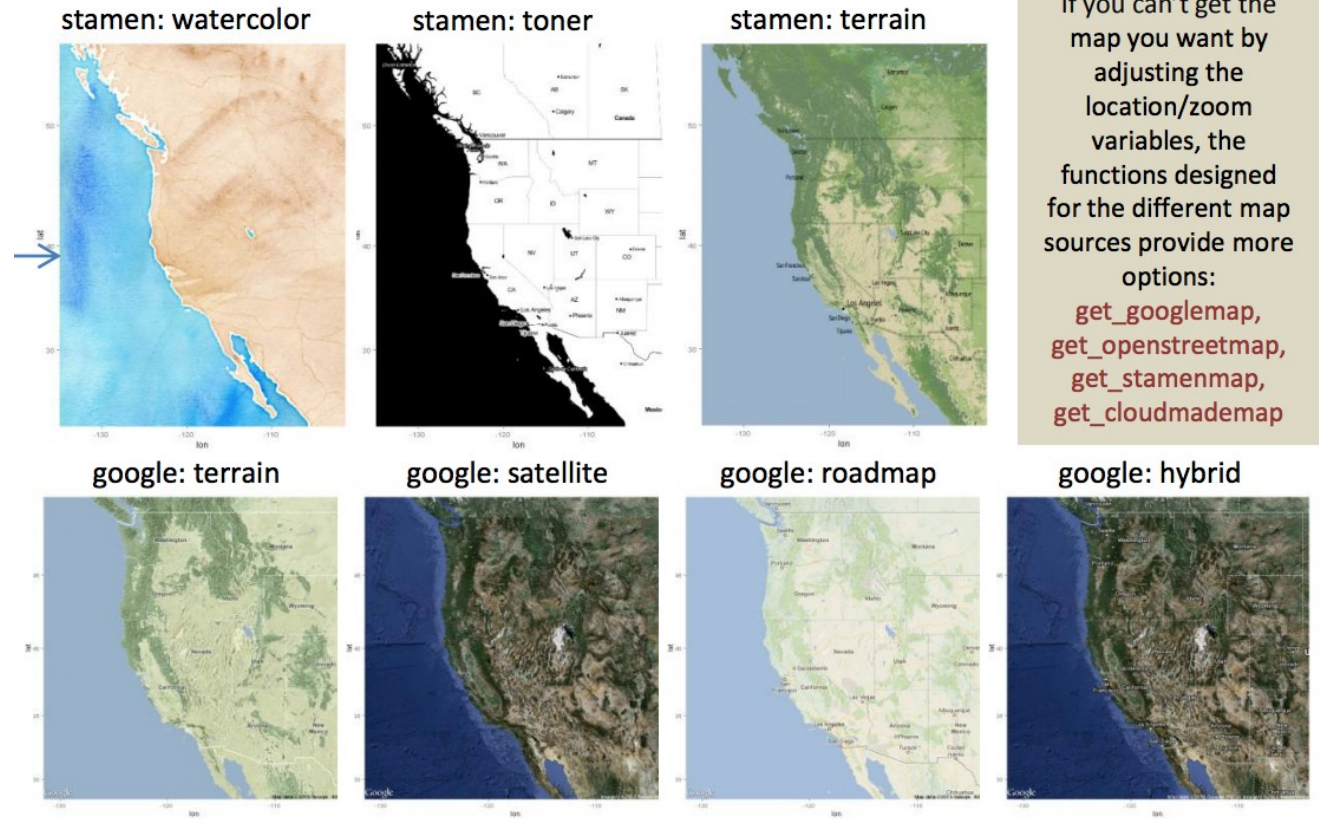
MAPPING SEATTLE CRIME


```r
library(ggmap)
library(dplyr)
library(ggplot2)

# GET SEATTLE CRIME DATA
download.file("https://vrzkj25a871bpq7t1ugcgmn9-wpengine.netdna-
ssl.com/wp-
content/uploads/2015/01/seattle_crime_2010_to_2014_REDUCED.txt.zip",
destfile="seattle_crime_2010_to_2014_REDUCED.txt.zip")


# UNZIP THE SF CRIME DATA FILE
unzip("seattle_crime_2010_to_2014_REDUCED.txt.zip")


# READ CRIME DATA INTO AN R DATAFRAME
df.seattle_crime <- read.csv("seattle_crime_2010_to_2014_REDUCED.txt")


# SEATTLE GGMAP
map.seattle_city <- qmap("seattle", zoom = 11, source="stamen",
maptype="toner",darken = c(.3,"#BBBBBB")) map.seattle_city

# CREATE SCATTERPLOT
ggplot() + geom_point(data=df.seattle_crime, aes(x=Longitude,
y=Latitude))

# ADD TRANSPARENCY AND COLOR
map.seattle_city + geom_point(data=df.seattle_crime, aes(x=Longitude,
y=Latitude), color="dark green", alpha=.03, size=1.1)
```
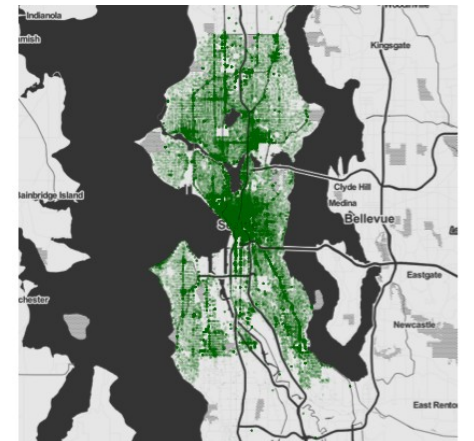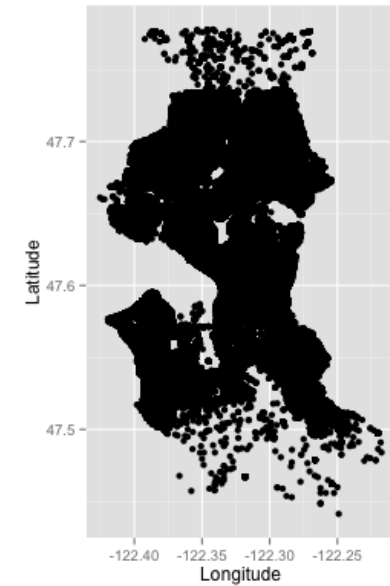
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