GEOG 491/891: Special Topics - Spatial Analysis in R

Week 06.01: A quick discussion on point pattern analysis + bonus

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Today's schedule

- Open discussion
- Point pattern
- Activity

Anything to discuss? Questions?

Chapter 6 is more extensive and more advanced than we really need to get into

So we're adapting

today's setup

```
library(tidyverse)
library(GISTools)
library(sf)
library(tmap)

# data:
#cumulative rainfall for 2008
precip <- sf::read_sf("./data/Precip2008Readings.shp")
neb <- sf::read_sf("./data/Nebraska_State_Boundary.shp")
```

Map the data as we would normally

```
tm_shape(neb) + tm_polygons() + tm_shape(precip) + tm_dots(col='navyblue')
```

A more interactive way to use tmap

```
tmap_mode("view")
tm_shape(neb) + tm_polygons() + tm_shape(precip) + tm_dots(col='navyblue')
```

Change it back to the standard "plot" view

```
tmap_mode("plot")
tm_shape(neb) + tm_polygons() + tm_shape(precip) + tm_dots(col='navyblue')
```

Interpolation

- How does it work?

KDE vs. IDW vs. Kriging

Jargon, ahoy!

Returning to our task from a few weeks ago:

1. Find your team
2. Make a plan, how are you going to answer the following...

How large is the harmful algal bloom (HAB) in Missisquoi Bay?

Which monitoring station(s) could have detected the HAB?

How much area (in the entire lake) has a CICyano value greater than 0.10?

... only once you have a plan should you start writing code

For this week

- Chapters 7
- Practice, practice, practice
- Lab 02 - keep working