

What Is This Class???

HES 505 Fall 2025: Session 1

Matt Williamson



>Welcome to Space!!

Today's Plan

- Introductions
- What can we do with spatial data?
- Course logistics and resources
- Testing out RStudio and GitHub Classroom

Introductions

About you?

- Your preferred pronouns
- Where are you from?
- What do you like most about Boise?
- What do you miss most about “home”?
- What is your research?

About Me

- What I do
- My path to this point
- Why I teach this course



The background of the slide is a photograph of a coastal scene. In the foreground, several large, white icebergs with blue-tinted edges float on a calm, greyish-blue body of water. The icebergs are of various shapes and sizes, some appearing as small chunks and others as larger, more complex structures. In the middle ground, a dark, rocky shoreline is visible, with some icebergs resting on the beach. The background shows a vast, open landscape under a dramatic sky filled with large, white, puffy clouds. The overall color palette is muted, with a lot of greys, blues, and whites, giving it a serene and somewhat somber feel.

What can we do with spatial data?

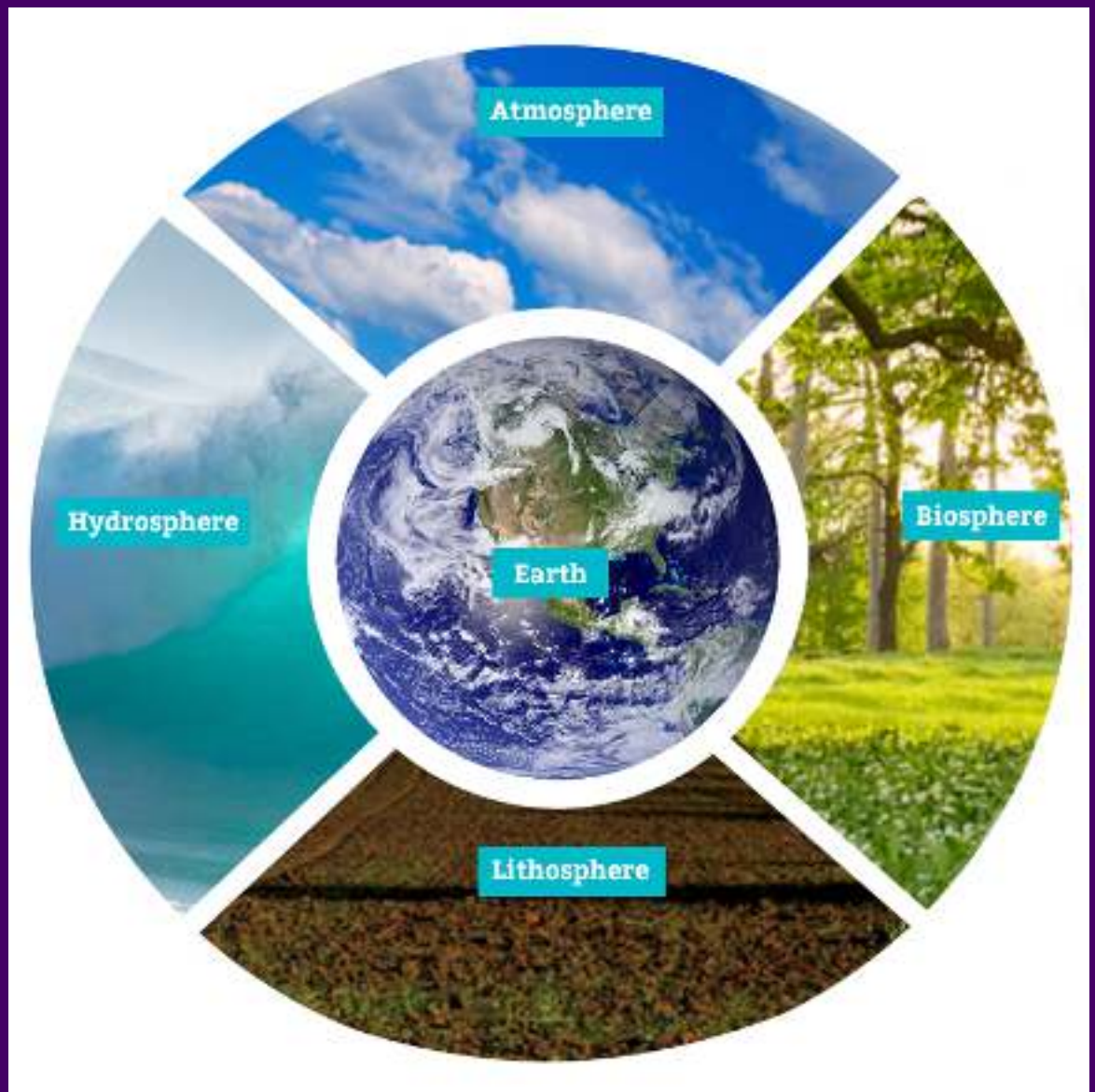
What is geography

- **Geo:** land, earth, terrain
- **Graph:** writing, discourse
- Tuan: **Space** (extent) and **Place** (location)
- Analysis of the effects of extent and location on events or features

Five Themes in Geography

- **Location**
 - **Absolute Location**
 - Latitude and Longitude
 - Map Coordinates
 - **Relative Location**
 - Proximity to other places
 - Directional indicators
- **Place**
 - Physical characteristics (climate, topography, etc.)
 - Human characteristics (culture, language, etc.)
- **Human-Environment Interaction**
 - How humans modify the environment
 - How the environment affects human activities
- **Movement**
 - Migration patterns
 - Trade routes and transportation
- **Region**
 - Spatial boundaries and divisions
 - Regional characteristics and identity

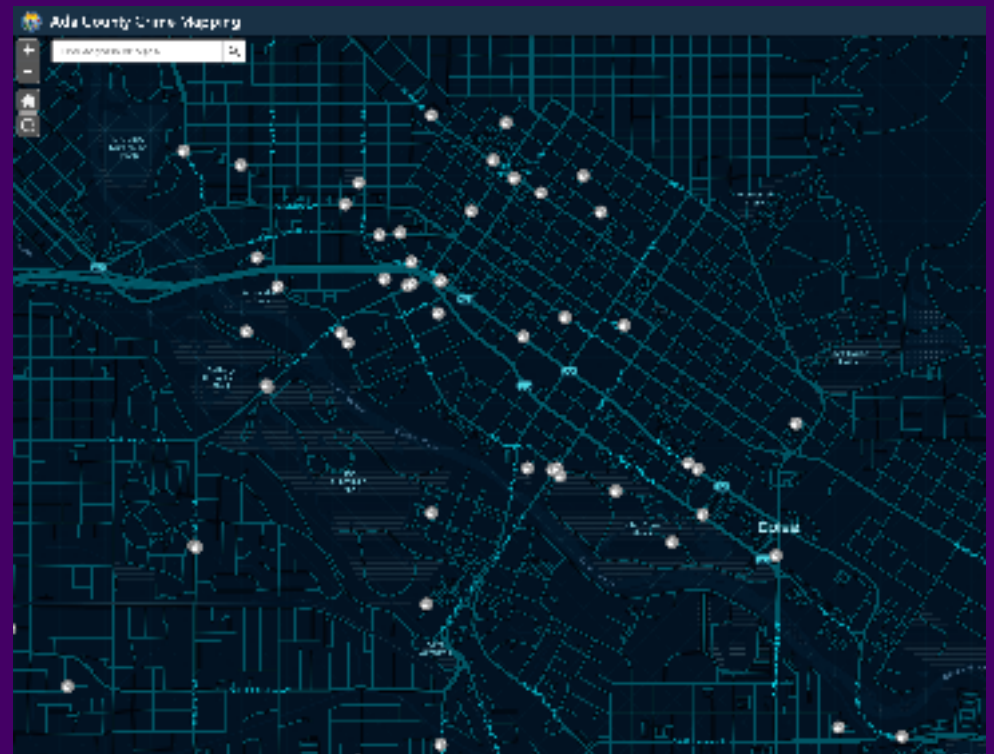
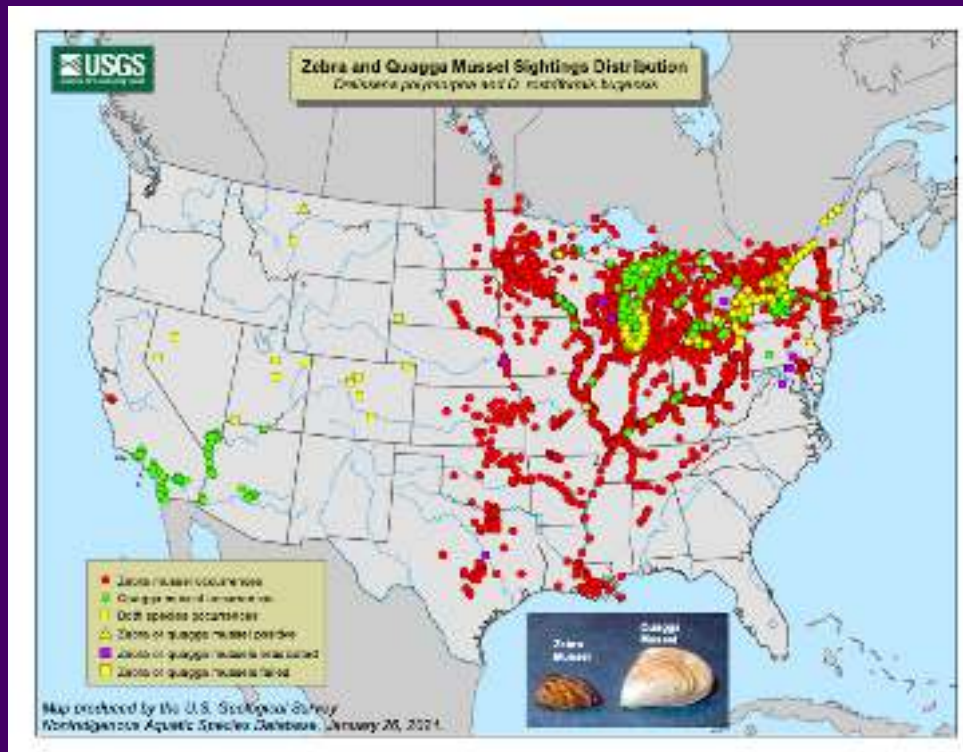
- Location
- Place
- Region
- Movement
- Human-
Environment
Interaction



WGBH Educational Foundation

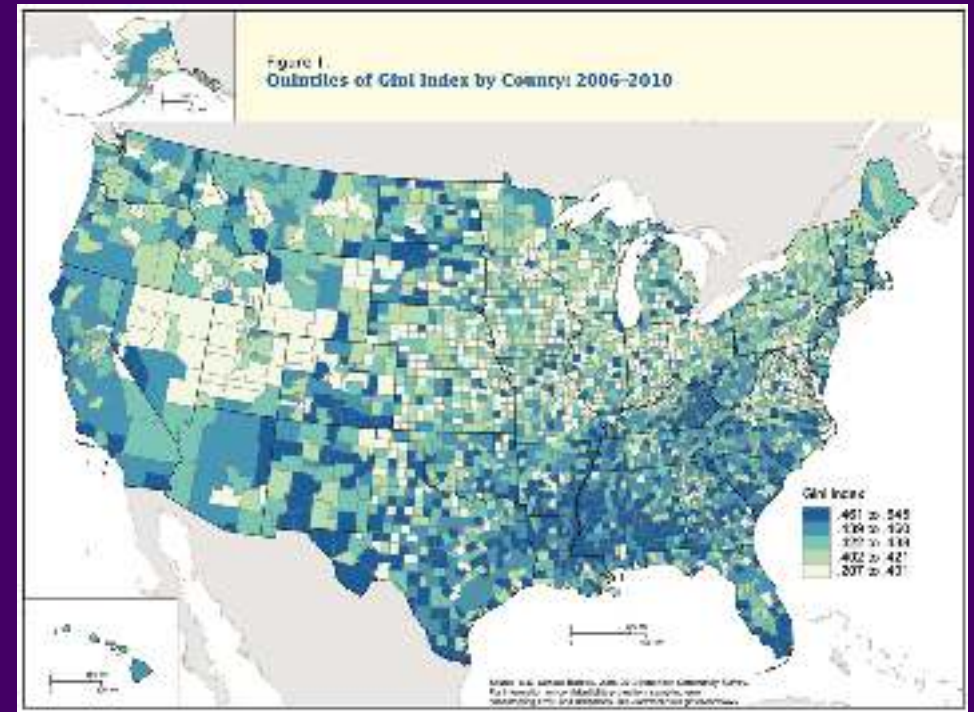
Location

The place (on Earth) of a particular geographic feature



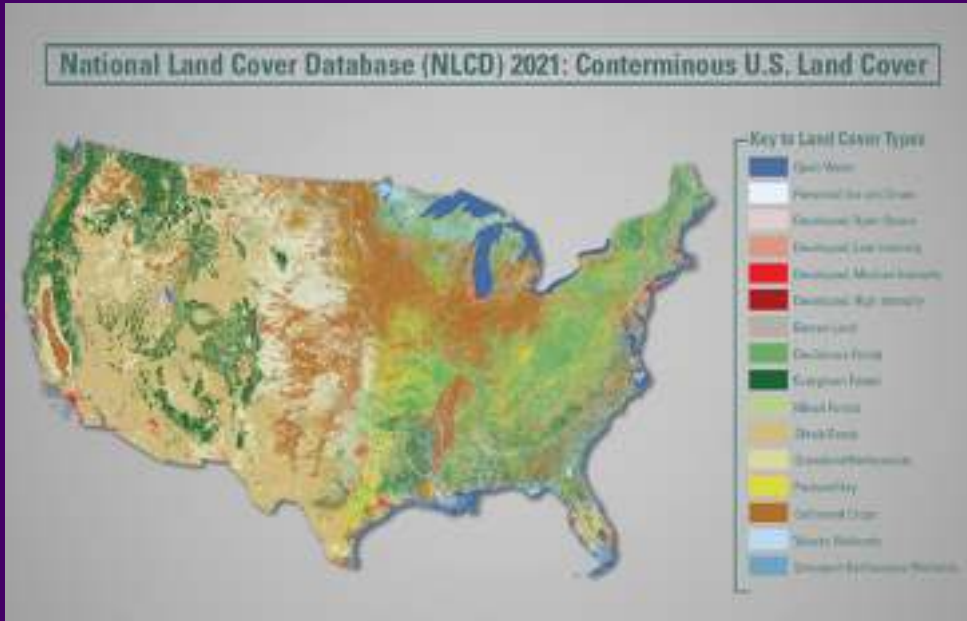
Place

What is a location *like*?



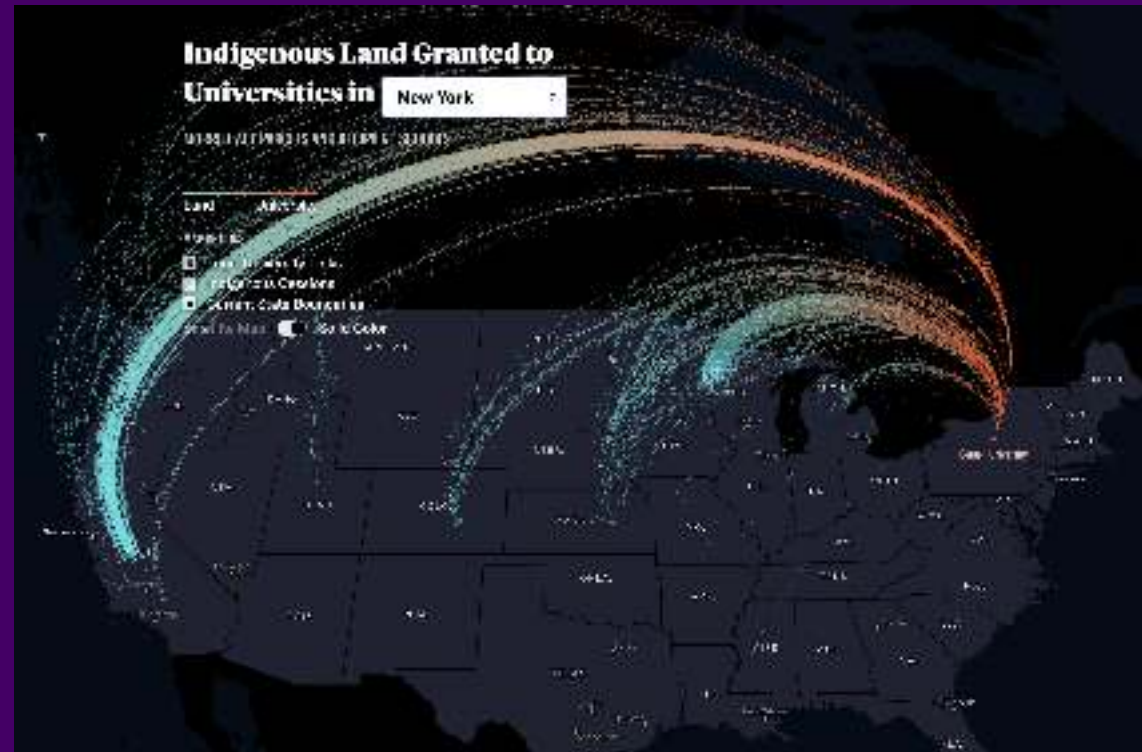
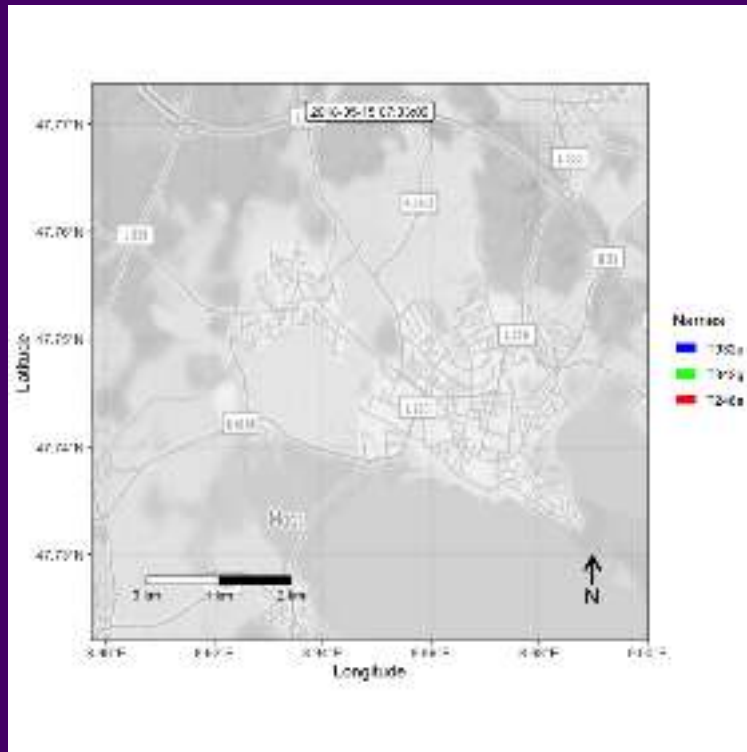
Region

What attributes to different geographies share? What distinguishes them?



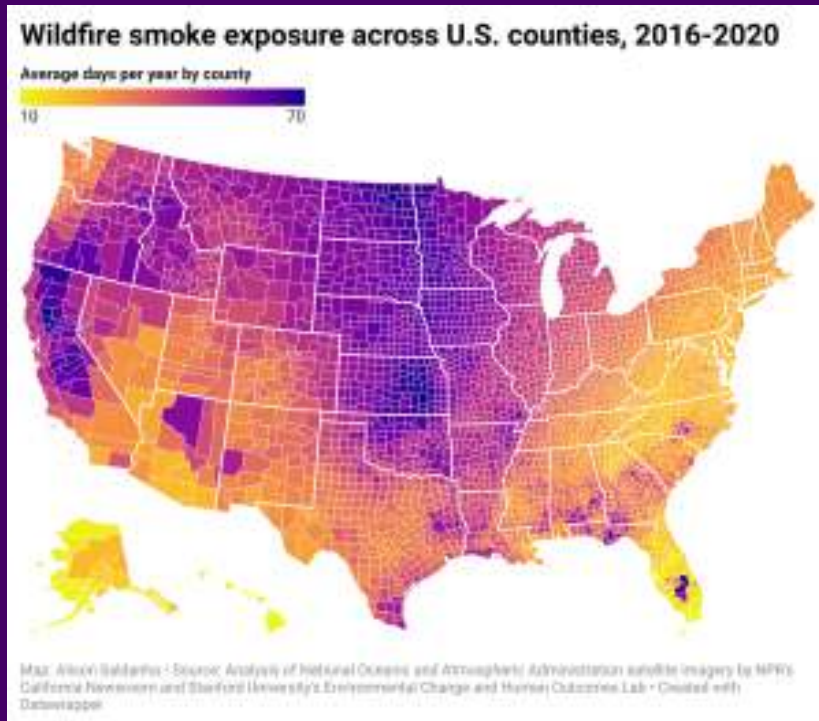
Movement

How do genes, individuals, populations, ideas, goods, etc traverse the landscape.



Human-Environment Interactions

How do people relate to and change the physical world to meet their needs?

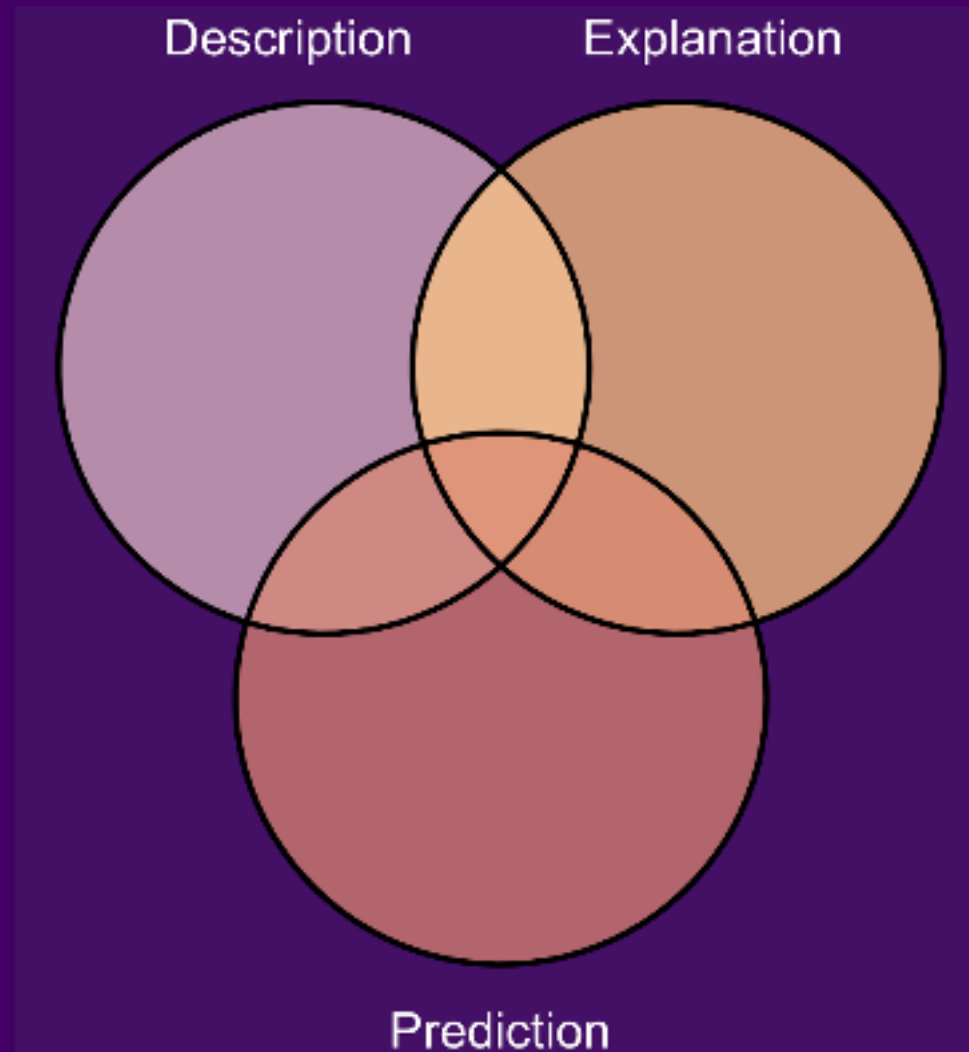


Towards *quantitative* spatial analysis

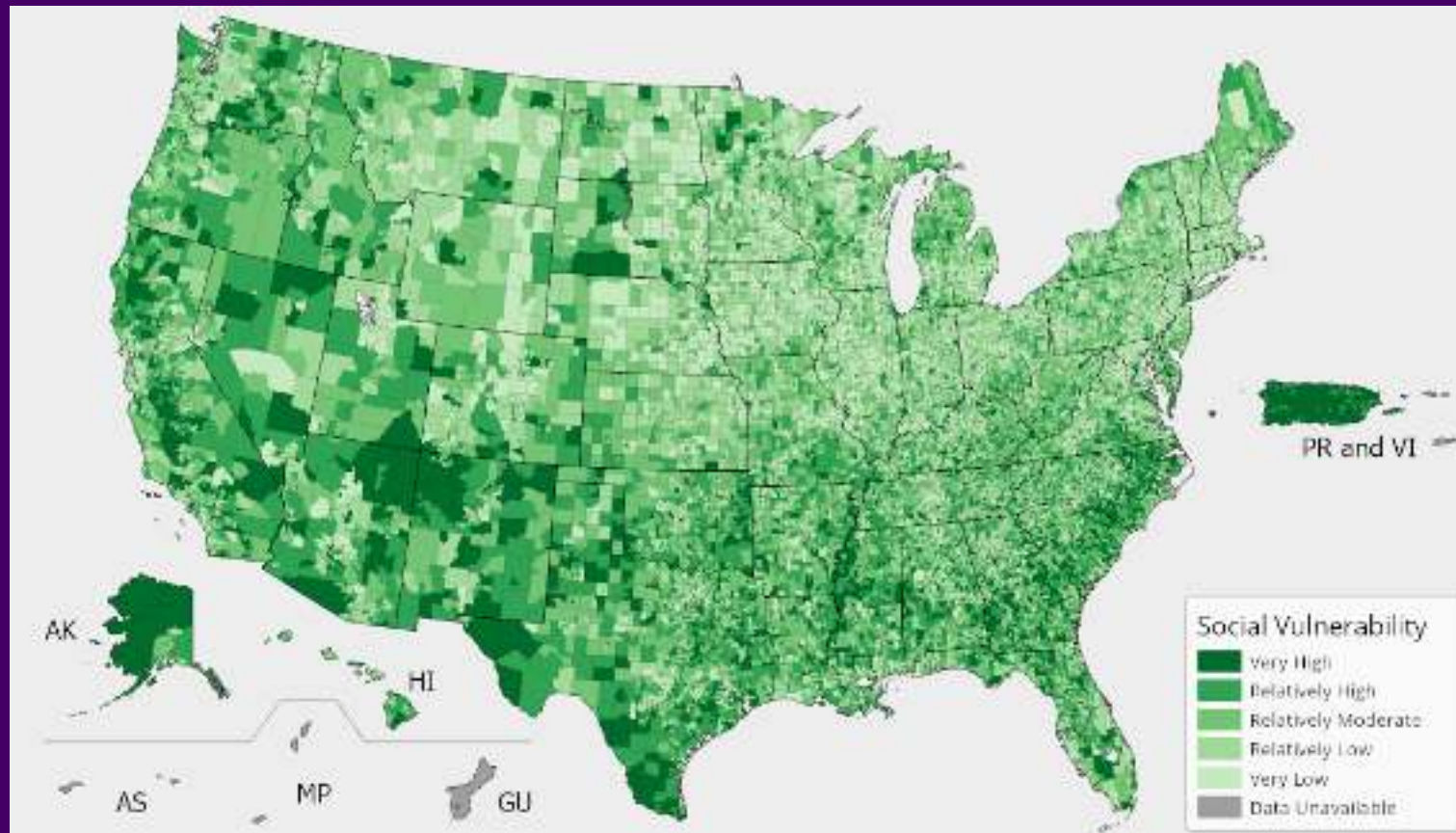
‘everything is usually related to all else but those which are near to each other are more related when compared to those that are further away’.

Waldo Tobler

3 “Faces” of Analysis



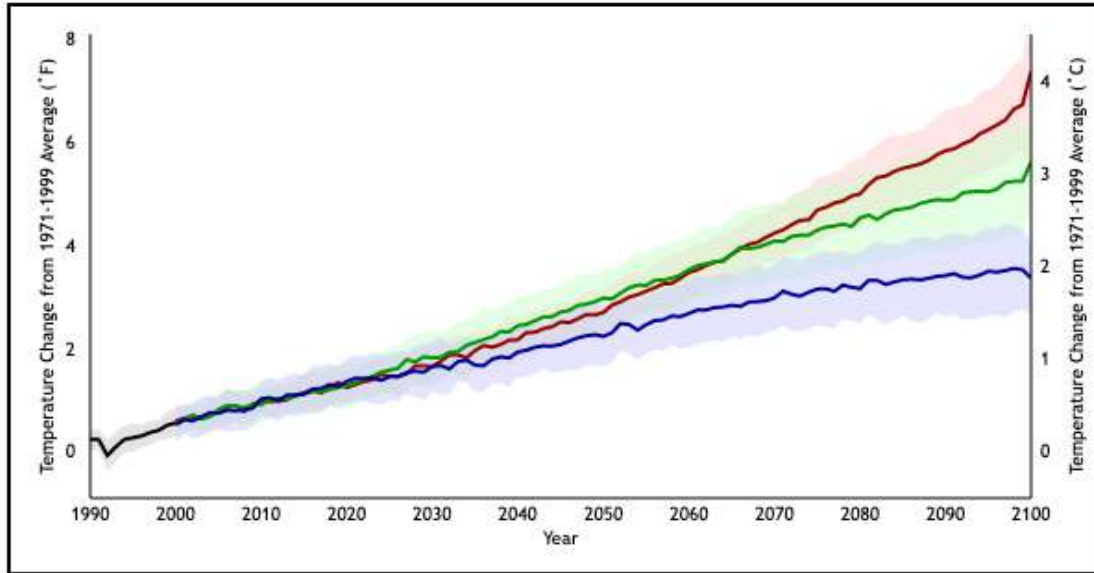
Description



Explanation and Inference

- **Cognitive Description:** collection ordering and classification of data
- **Cause and Effect:** design-based or model-based testing of the factors that give rise to geographic distributions
- **Systems Analysis:** describes the entire complex set of interactions that structure an activity

Prediction



- Extend description or explanation into unmeasured space
- Stationarity: the rules governing a process do not *drift* over space-time

Class Details

Logistics

- Meet on Mondays and Wednesdays
- ~40 min lecture, 30 min practice
- 5 major sections
- A note about readings

“Office Hours” immediately following class

Course Webpage

<https://isdrrfall25.classes.spaseslab.com/>

- Syllabus
- Schedule
- Lectures
- Assignments
- Resources

Assignments

Check out the syllabus for more on grading!

- **Self-reflections (2x)**
 - Your goals for the course
 - Evaluation criteria
- **In-class exercises (30x)**
 - Problem solving
 - Reproducible workflows
 - Muscle memory
- **Final project (1st draft, final draft):** Practice a full analysis workflow; Integrate analysis & visuals to tell a story
- **Homework Assignments (5x)**
 - Integrate skills from the section
 - Practice visualization
 - Build version control habits
- **Code Revisions (5x)**
 - Common issues
 - More extensive feedback

Wrapup

Checking in

1. What can I clarify about the course?

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ASTRONOMICARUM



