Announcements

- **Check in on map tutorials**
  - First map tutorial write-ups are due by 2:00 PM Mountain Time
    - Wednesday, February 7 for Wednesday lab
    - Thursday, February 8 for Thursday lab
  - Turn in your map tutorials using the Microsoft Form on the Map Tutorial assignment page
- **Readings now up on schedule for remainder of semester!**
  - Also on content pages for each week
  - Additional resources may be posted with lecture slides
- **First Voices of GIS guest next Thursday!**
  - Lee Macholz of Missoula City GIS

Whence Geospatial Data:
All data are spatial

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All Data Are Spatial!

- Knowing the **where** of a phenomenon is fundamental
- **Spatial attributes** may reflect the nature of phenomena (think: 1854 Cholera Outbreak)
- All data are spatial, but **not all data are *geo*spatial**
- Spatial data may not be [*geo*]spatially referenced

Test each other!

Think of a type of data that **cannot be** [*geo*]spatial

Spatial data are everywhere

- CDC Chronic Disease Data
- Early Colonial Texts from Mexico
- Indigenous Territories, Languages, and Treaties

Geospatial Authorities: Who creates, distributes, and maintains authoritative geodata?

What Is Metadata?

FAIR Guiding Principles for scientific data management and stewardship

FAIR data

Findable

- (Meta)data are assigned a globally unique and persistent identifier
- Data are described with rich metadata
- Metadata clearly and explicitly include in the identifier of the data it describes
- (Meta)data are registered or indexed in a searchable resource

Accessible

- (Meta)data are retrievable by their identifier using a standardized protocol
- The protocol is open, free and universal
- The protocol allows for authentication and authorization, as needed
- Metadata are accessible, even when the data are no longer available

Interoperable

- (Meta)data use a formal, accessible, shared and broadly applicable language
- (Meta)data use vocabularies that follow FAIR principles
- (Meta)data include qualified references to other (meta)data

Reusable

- (Meta)data are richly described with a plurality of accurate and relevant attributes
- (Meta)data are released with a clear and accessible data usage licence
- (Meta)data are associated with a detailed provenance
- (Meta)data meet domain-relevant community standards

Bottom Line

- Use **open**, **accessible**, **authoritative** data
- Keep track of **data provenance**
  - Ensure metadata are *standards-compliant*
  - Record and report *operations* you perform on data
  - Archive new data in *federated repositories*

Some authoritative geodata resources:

- The US Geospatial Platform
- USGS National Geospatial Program
  - 3D National Topography Model (3DNTM)
    - 3D Elevation Program (3DEP)
    - 3D Hydrography Program (3DHP)
  - U.S. Board on Geographic Names
    - Geographic Names Information System (GNIS)
  - The National Map
  - TNM Supporting Themes
- Multi-Resolution Land Characteristics (MRLC) Consortium
- US Census Tiger Database

Getting data into ArcGIS Pro

DEMONSTRATION!