What are Geospatial Technologies?
Geospatial Technologies, Definition:

“Technology relating to the collection or processing of data that is associated with location.”
Common Examples of Geospatial Technologies:

- **Global Positioning Systems (GPS):** A satellite-based geolocation system that functions worldwide and is accessible to the public via GPS units.

- **Remote Sensing:** The acquisition of images and information from afar.

- **Geographic Information Systems (GIS):** Information systems enabling the creation, organization, and presentation of data in a spatially referenced form, as well as the production of maps and charts.
1: Signals Broadcast
GPS

2: Triangulation
3: End User
Why GPS is useful

- Records a location point associated with all observations
- Helps with data management
- Investigators can easily revisit the same site for long term research
- Allows others to verify results
Remote Sensing

- Images and data collected remotely
  - Often by satellite, but other platforms also exist
- Information stored digitally, transmitted electronically
- Often includes information invisible to human eye
- Fully georeferenced
Remote Sensing

- High Resolution
  - Best for observing “human scale” phenomena
  - Highly targeted
  - Narrow field of view

- Low-Resolution
  - Best for regional phenomena
  - Collected systematically
  - Wide area collected with each pass
Remote Sensing

- **Multispectral**
  - Images in color
  - Able to discern material types
  - Post-processing often required
  - Higher cost

- **Panchromatic**
  - Black and white
  - Wider field, more coverage, less expensive
  - More difficult to interpret
Why use GIS

- Synthesizes different types of geospatial data
- Reveals spatial patterns
- Simplifies confirmation of observations by others
Putting it all together

Sample workflow:

- Imaging Platform (Satellite, UAV, etc.)
- Remotely-sensed imagery
- Location Data
- GPS Satellites
- GPS Receiver
- GIS Analysis

Outputs:
- Maps
- Documentation
- Evidence
Questions?

#AAAS_GTHR