Agenda

• Introduction
• 5 Example Projects
  - GIS & Python
  - Spatial Modeling with GIS
  - GeoComputation
  - Capstone in GIS
  - Spatial Data Design
• Other Projects
• Conclusion
• Questions & Discussion
Introduction

Data Management

Project Management

Spatial Analysis
Cumulative Non-Negative Elevation Gain: Calculating Elevation Change on Wasatch Front Roads

• What is Cumulative Non-Negative Elevation Gain?
• What was my objective?
• How did I make my calculations?
• In what direction can future work be taken?
Spatial Modeling with GIS
Spatial Modeling with GIS

The GREENBike Model:
An Agent-Based Approach to Model a Bike Share Program

- What are Bike Sharing Programs (BSP)?
- Why are BSP ideal for being represented as an agent-based model?
- What emergent behaviors were captured by the model?
GeoComputation
GeoComputation

A Gi Statistic Analysis of Municipal Water Consumption in Texas

- Can linear and non-linear data reduction methods be compared?
- Why $G_i$?
- Can GeoComputational methods replace traditional quantitative spatial analysis?
Capstone in GIS
Capstone in GIS

Visualizing Roadway Safety Data; A New Approach

• How can roadway related safety data be presented to the public in a meaningful way?

• Can a data management project lead to a sophisticated analytical result?
Spatial Data Design
Spatial Data Design

Anytown, USA: Designing a Spatial Database

• How can a municipality store its spatial data in a database?
• What steps are needed to create a logical, conceptual, and physical model of the data?
Other Projects
Other Projects

Machine Generated TAZ: Using GRASS to Automate the Delineation of Transportation Analysis Zones in Salt Lake County

- Open Source Software should not be seen as a “no-cost” substitution for commercial software!
Other Projects

Bicycle Ridership in Salt Lake County Utah

- A bigger dataset does not mean a higher likelihood of significant findings
- Bike trip productions and attractions are spatially auto-correlated

Creating Trust: The feasibility of Agricultural Water Redistribution in Utah

- Applying geographic thought while communicating complicated ideas to a wide audience
Conclusion
Conclusion

Why there?

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Questions?