Management of Urban Forests

Kate Cendrowski
kcendro2@pdx.edu

Research Experiences for Undergraduates (REU)
Computational Modeling  Serving the City

[Logos of NSF, APICS, and Portland State University]
Trees Grow on Money: Urban Tree Canopy Cover and Environmental Justice

- National Center for Environmental Analysis and Synthesis (NCEAS) working group project
  - Analyze the equity of distribution of urban tree canopy (UTC) cover
  - High spatial resolution imagery
    - QuickBird satellite imagery, National Agriculture Imagery Program (NAIP) near-infrared imagery, natural color aerial imagery, LiDAR data
  - US Census TIGER dataset - Census Block Groups for each city
Trees Grow on Money: Urban Tree Canopy Cover and Environmental Justice (Continued)

• Analysis
  ○ Spearman's correlation, ordinary least squares (OLS) regression, spatial autoregressive (SAR) model

• Results
  ○ All cities had income correlation
  ○ Some cities had race correlation
    ■ Arid climates - Water as a limiting factor
    ■ Los Angeles and Sacramento
Relationship to Project

- Working with Professor Vivek Shandas
- Management of Urban Forests
  - US Geological Survey remote sensing data and demographics data
  - How does proximity to trees (and abundance of trees) relate to socioeconomic demographics?
  - Is there a correlation between trees and those demographics?
- Trees Grow on Money: Urban Tree Canopy Cover and Environmental Justice
  - Not focused on environmental justice part of it, but could be after
  - Basically same premise
    - Different data
    - Different methodology
    - Different scope
References