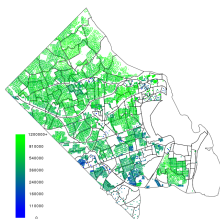


JSM2021 Presentation

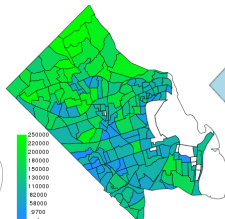
Probabilistic Population Synthesis for Decision Making

Christopher Grubb; Dr. David Higdon; Dr. Leanna House



Household-level Data

housing price
tax amount from real
estate tax assessments



American Community Survey

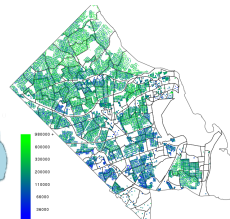
Areal income summary
- by block group
- with uncertainty



Statistical
Sample

SRS from County

housing price
tax amount
income



Household level Imputation

housing price
tax amount
income

- Use population (individual-level) model to combine information at different scales and resolutions
- Population-based inference needs to appropriately capture uncertainty resulting from these different information sources
 - want plausible populations; not just parameters
- Integrate information from
 - simple random samples
 - tabular aggregates from surveys
 - point-level data from tax records
 - other non-standard data sources