



Social Indicators Research for Arctic Communities (SIRAC)

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The Arctic Environment Is Changing Rapidly

- Changes in ecosystem services?
 - Local observations
- How are arctic people adapting?
 - Observe changes in social indicators



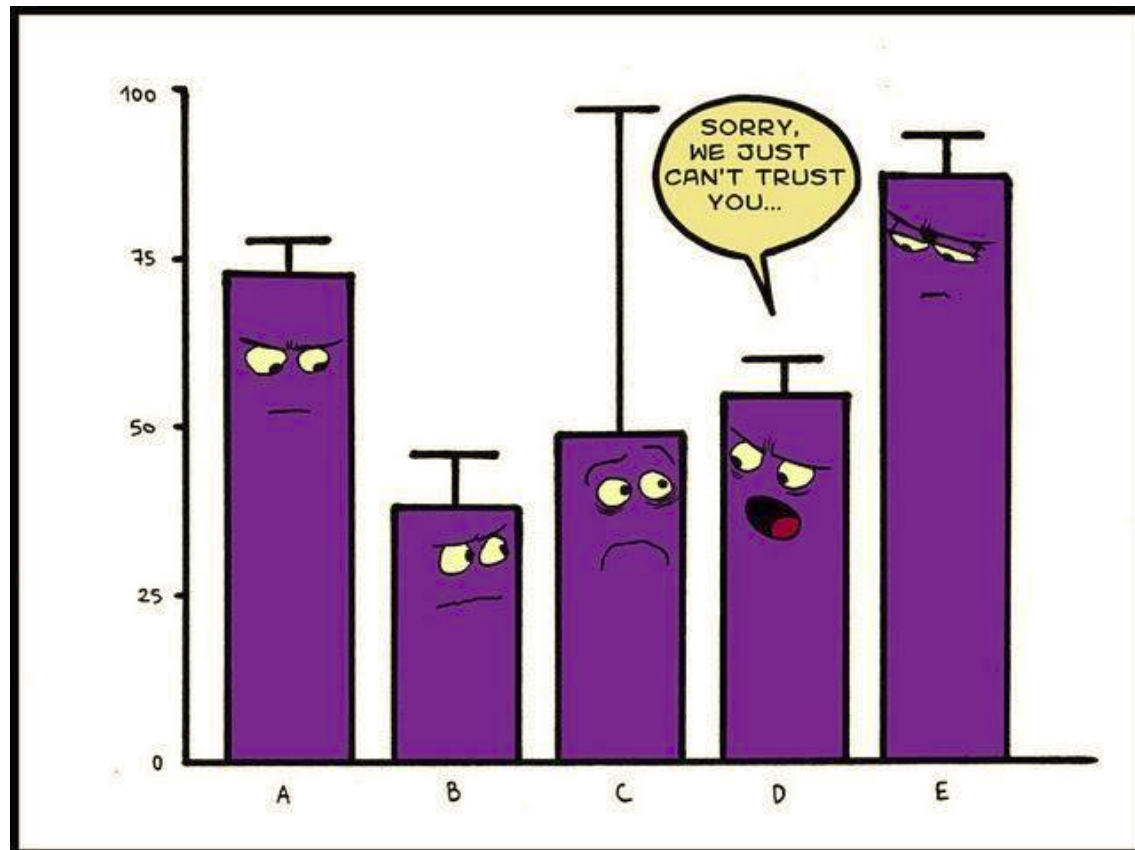
US Census Bureau Data:

Dominant Role in the Observing System for Arctic Residents

- Provides key indicators for four of six indicator domains identified by AHDR/ASI
 - Material well-being: income and employment
 - Health and demography: population change
 - Education: educational attainment
 - Cultural integrity: language use
- Includes all regions and all communities
- Only systematic source of information on indigenous people

Changes in Survey Design After 2000 Census

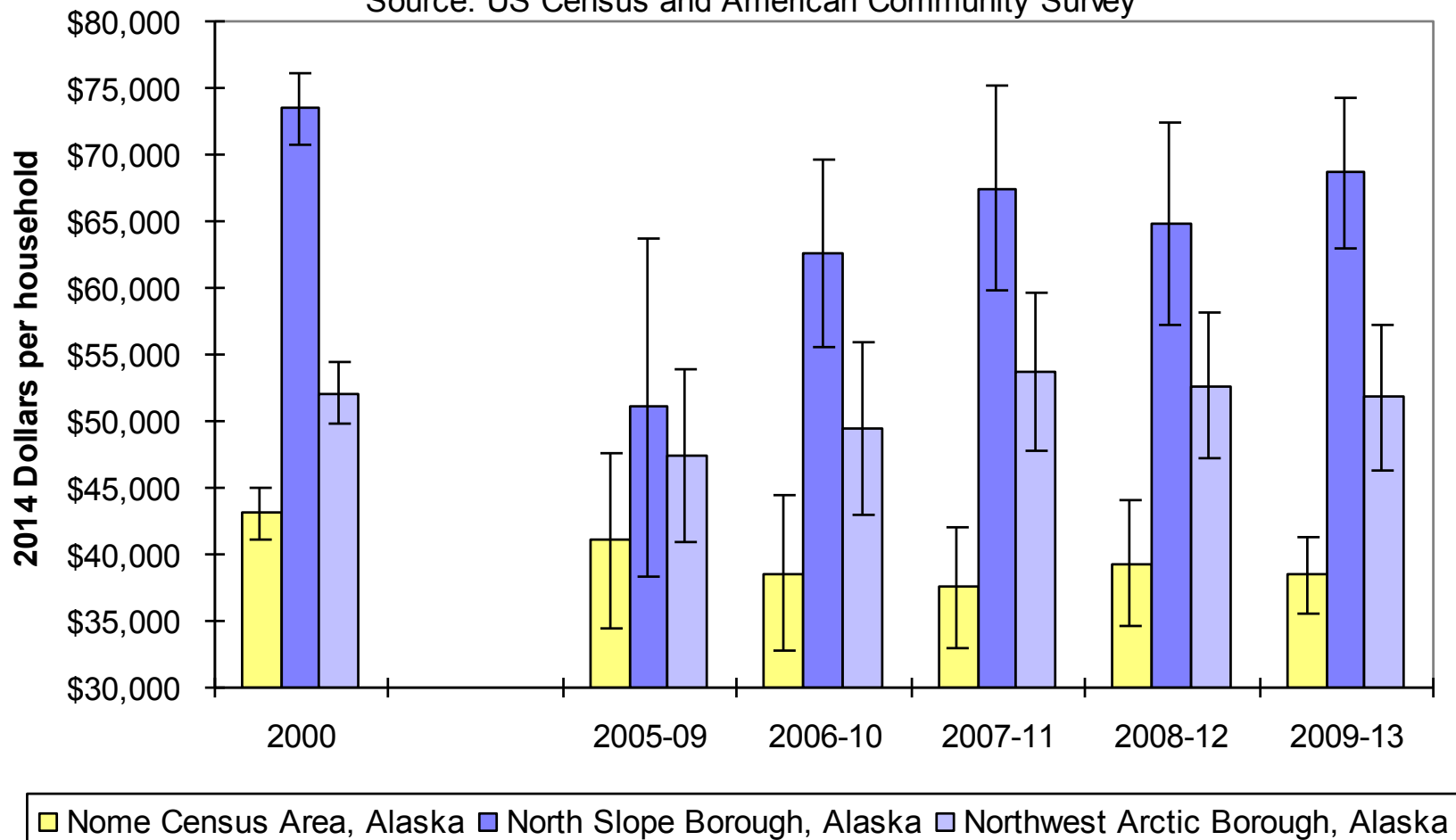
- From decadal survey to annual survey
- Large pulse sample to smaller continuous sample
- Consequences for reporting results for small areas
 - Reported as 5-year moving averages
 - Substantial loss of precision



Community and regional differences that were easily distinguished in 2000 now difficult to observe.

Median Income for Households with American Indian or Alaska Native Householder, Adjusted for Inflation

Source: US Census and American Community Survey



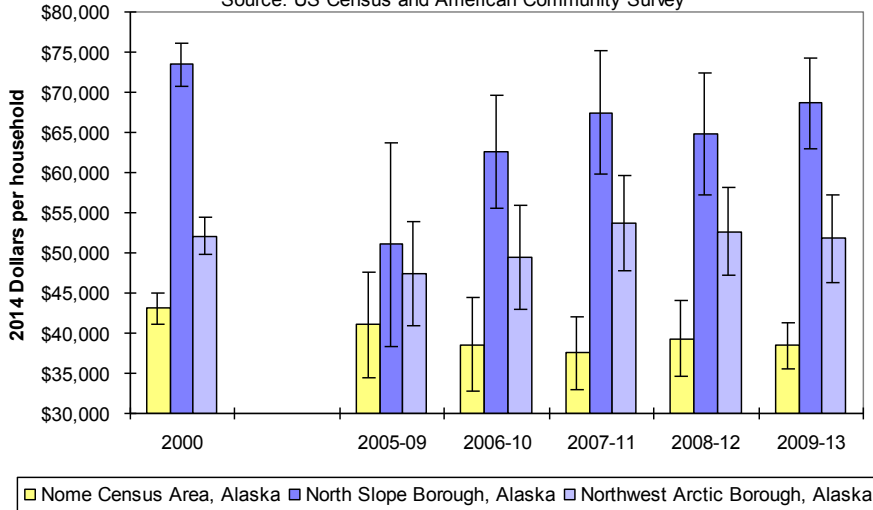
Social Indicators Research for Arctic Communities (SIRAC) project

Work underway at Census Research Data Center

- Understand and quantify sources of loss of precision with transition from Census Long Form to the American Community Survey (ACS)
 - Number of valid observations each year for key indicators
 - Determine sample variance due to inter-annual variation
 - Effect of surveying estimated rather than known population
- Design and test methods for “reanalysis” of reported ACS indicators to reduce margins of error
- Produce publicly available synthetic annual community-level data from reanalysis

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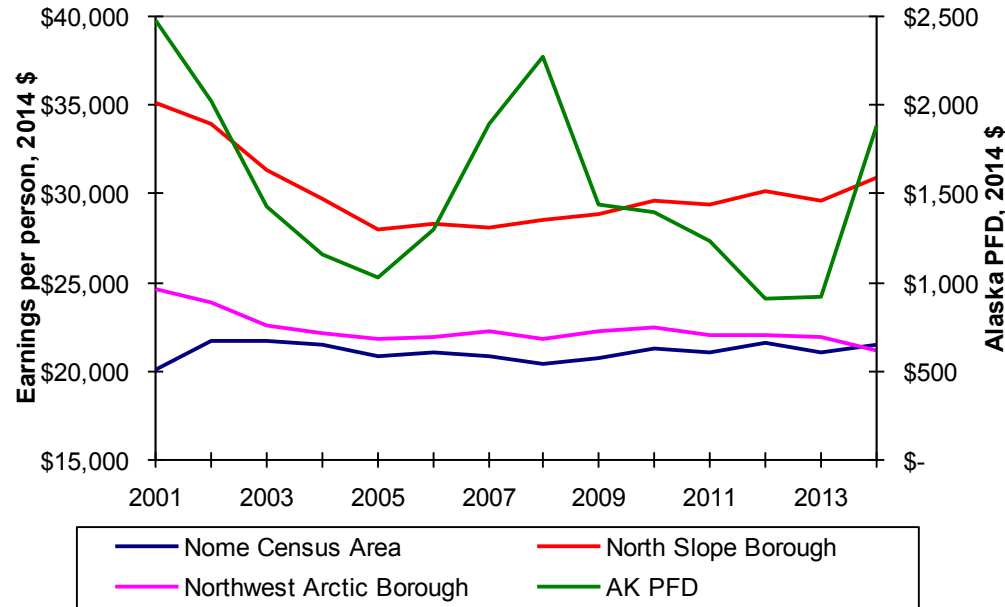
Source: US Census and American Community Survey



Reducing spatial and temporal errors in small area 5-year moving averages

Average Earnings per Person Age 16 and older and Alaska Permanent Fund Dividend Amount

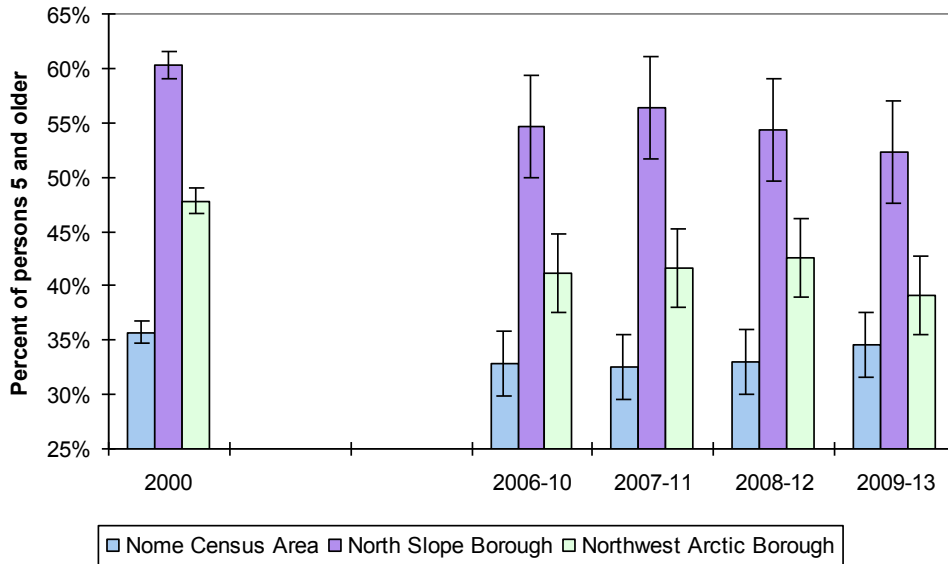
Source: Alaska Dept. of Labor and Workplace Development



Find independent observations that are highly correlated with census indicators and develop predictive model.

Percent American Indian and Alaska Native People Not Speaking English at Home

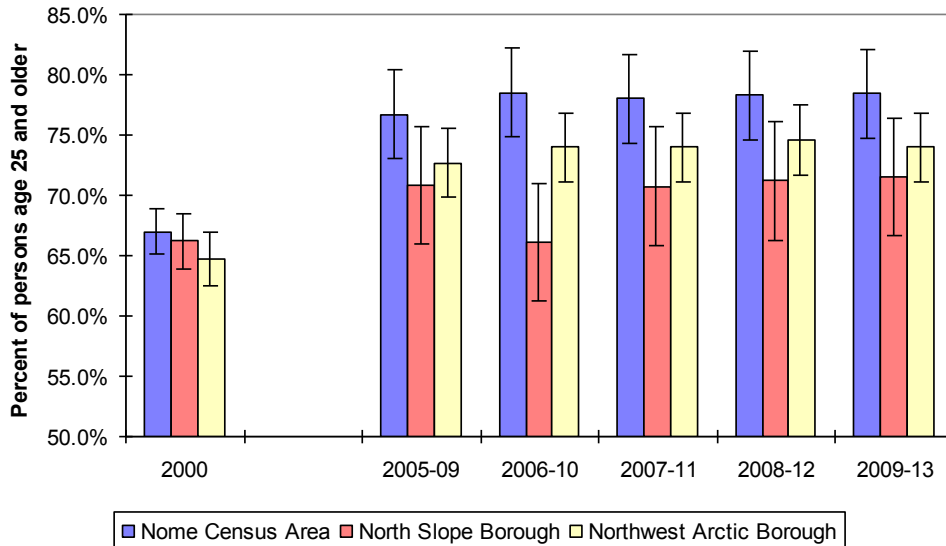
Source: US Census and American Community Survey



Reducing spatial and temporal errors in small area 5-year moving averages

Percent American Indian and Alaska Native People with a High School Degree

Source: US Census and American Community Survey



Slowly changing indicators may be trending up or down over time.

Stay tuned....

