

Summary Report: Workshop on Towards Scenarios of U.S. Demographic Change

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(On behalf of the Workshop Scientific Steering
Committee)

Science steering committee

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- Mark Montgomery (Population Council)
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Workshop Overview

Goal: Assess key factors involved in the production of long-term scenarios of U.S. demographic change for use in interdisciplinary analysis of social and environmental issues.

Objectives: Improving our understanding of:

- Key user needs for population scenarios, in order to guide the scenario production effort
- Feasibility of producing projections of various population characteristics and geographic scales, limitations and opportunities in terms of data and methods
- Pros and cons of linking U.S. scenarios to global scenario exercises, consider what other socioeconomic factors would be important to demographic projections, and recommend process for carrying forward the U.S. scenarios activity

User Needs (Wants?)

- Higher resolution projections (some exist)
- Long list of population characteristics, but some commonality:
 - age, sex, urban/rural or density, education, health status, income

Methods/Data

- Different views on utility of scenario approach
 - Is it useful? Credible?
 - Demographers can usefully contribute to development scenario development
- Tradeoff between spatial resolution and population characteristics
 - lots of both is unadvisable
- Data an important constraint on this tradeoff, particularly for migration
- National scale, higher resolution methods a young field

Research needs

- Consistent, scalable grid for demographic (Census) data
- Better theory to underpin models/projections (e.g. for urbanization)
- Demography model (and data) intercomparison project
 - Comparison and evaluation of (spatial) projection methods; against historical data, for common future scenarios, against aggregate projections
- Sensitivity of outcomes of interest to demographic factors and scale (what matters at what scale)
- Narrowing the questions/needs?

Population and land cover land use

- Inter-city and intra-city changes are both needed
- Eminent merger of gravity model with city growth model
- Microsimulation
 - Agent based Models
- Mostly bidirectional treatment
 - ICLUS (population to residential density)
 - Locally adaptive growth (land use change to population)
- Data challenges and opportunities
 - US census and NLCD misalignment
 - Traditional approaches have not yielded desirable migration characteristics
 - Emerging data sets (National Urban Change Indicator (NUCI); <1 meter settlement maps)
 - Big Data mining for migration and urban land use

