



## **2019 Summer Diversity Fellowship Final Presentations**

### **Catalina Anampa Castro and Cori Marson**

**Neighborhood Characteristics of Public Housing Residents in 1940** — with Associate Professor Ryan Allen and IPUMS Spatial Analysis Director David Van Riper

Fellows worked with Dr. Allen and Mr. Van Riper to analyze and compare the descriptive trends and patterns among public housing residents and their neighborhoods in 1940. The project compares residents living in public housing projects to residents in adjacent census enumeration districts. The students' primary responsibility was to identifying enumeration districts (EDs) adjacent to the enumeration districts containing public housing in 1940, assembling data from the 1940 census for these adjacent EDs and generating descriptive statistics for the public housing residents and the neighborhoods around public housing developments. Fellows created data visualizations based on descriptive statistics and other exploratory data analysis.

### **Alysha Alloway and Cole Anderson**

**Developing and Visualizing New Types of U.S. Census Mapping Data** — with Professor Steven Manson and IPUMS Research Scientist Jonathan Schroeder

Fellows worked with Dr. Manson and Dr. Schroeder to develop new mapping data products and craft online visualizations that use the new data to illustrate interesting features of the U.S. population. They were interested in adding several new types of data: water bodies, roads, centers of population, generalized boundaries (providing less detail than our existing data), and/or line data for boundaries and coastlines (to complement our existing polygon data). Fellows derived the new data from original Census Bureau sources using GIS tools, and helped to identify interesting subjects for visualizations that combine the new mapping data with census summary data (e.g., changes in neighborhood race and ethnicity throughout the U.S., etc.). Fellows also generated the visualizations and integrated them into a blog post on the IPUMS website.

## **Berenger Djoumessi Tiague and Margie McMillan**

**Optical Character Recognition for Data Tables** — with IPUMS Research Scientist Tracy Kugler and Assistant Professor Evan Roberts

Fellows worked with Dr. Kugler and Dr. Roberts to develop workflows for the optical character recognition (OCR) process on a new IPUMS product. Our new IPUMS product is creating a database of population and agriculture statistics, derived from censuses and surveys, from around the world. Census prior to 2000 are often only available in paper form. In order to unlock these data from their paper form and load them into our database, we must scan the volumes and then use OCR to convert the scans to data. OCR for data tables poses unique challenges due to the structure and content of the information. The challenges and methods to address them are less well studied than OCR for textual information. Fellows explored the application of existing OCR tools to scans from published census volumes and performed quality checks on the OCR output developed from the new workflows.

## **Michael Huynh and Joey Pedtke**

**Examining the Short-Term Social Patterning of Encore Adulthood Family Living Arrangements** — with IPUMS Research Scientist Sarah Flood and Professor Phyllis Moen

Fellows worked with Dr. Flood and Dr. Moen to examine the ways family living arrangements remain stable or change over a 16-month period for encore adults (ages 50 to 75) in the United States and the extent to which family living arrangement and poverty level dynamics are socially patterned. Their focus is on age and gender-specific patterns. Fellows used panel data from the Current Population Survey (IPUMS CPS) to construct family living arrangement patterns and performed sequence and cluster analyses using R to empirically identify constellations of family living arrangements. In addition, fellows created tables and figures to demonstrate relationships between family living arrangement constellations, income levels, and demographic characteristics. Fellows conducted multivariate analyses to understand the social patterning of family living arrangement constellations.

## **Aparna Ramen & Isabella Swanson**

**Social Contact Structures and Time Use Patterns in the U.S.** — with Assistant Professor Audrey Dorélien and MnRDC Administrator Rachelle Hill

Fellows worked with Dr. Dorélien and Dr. Hill, to examine how U.S. contact patterns vary over time, space, and based on individual characteristics. The aim originally was to answer the following questions: What are the key social determinants of social mixing/contact patterns? How do social contacts vary significantly by age, gender, race/ethnicity, for people residing in the U.S.? And how do contact patterns change during times of high/low temperatures or during periods of inclement weather? This project aims to describe and quantify U.S. social contact patterns in ways that are useful for infectious disease modelers, with the end goal of illustrating that social contact data can be used to better predict/forecast and control the incidence of influenza and other infectious diseases. Fellows used data from the American Time Use Survey, Stata, and GIS software.

