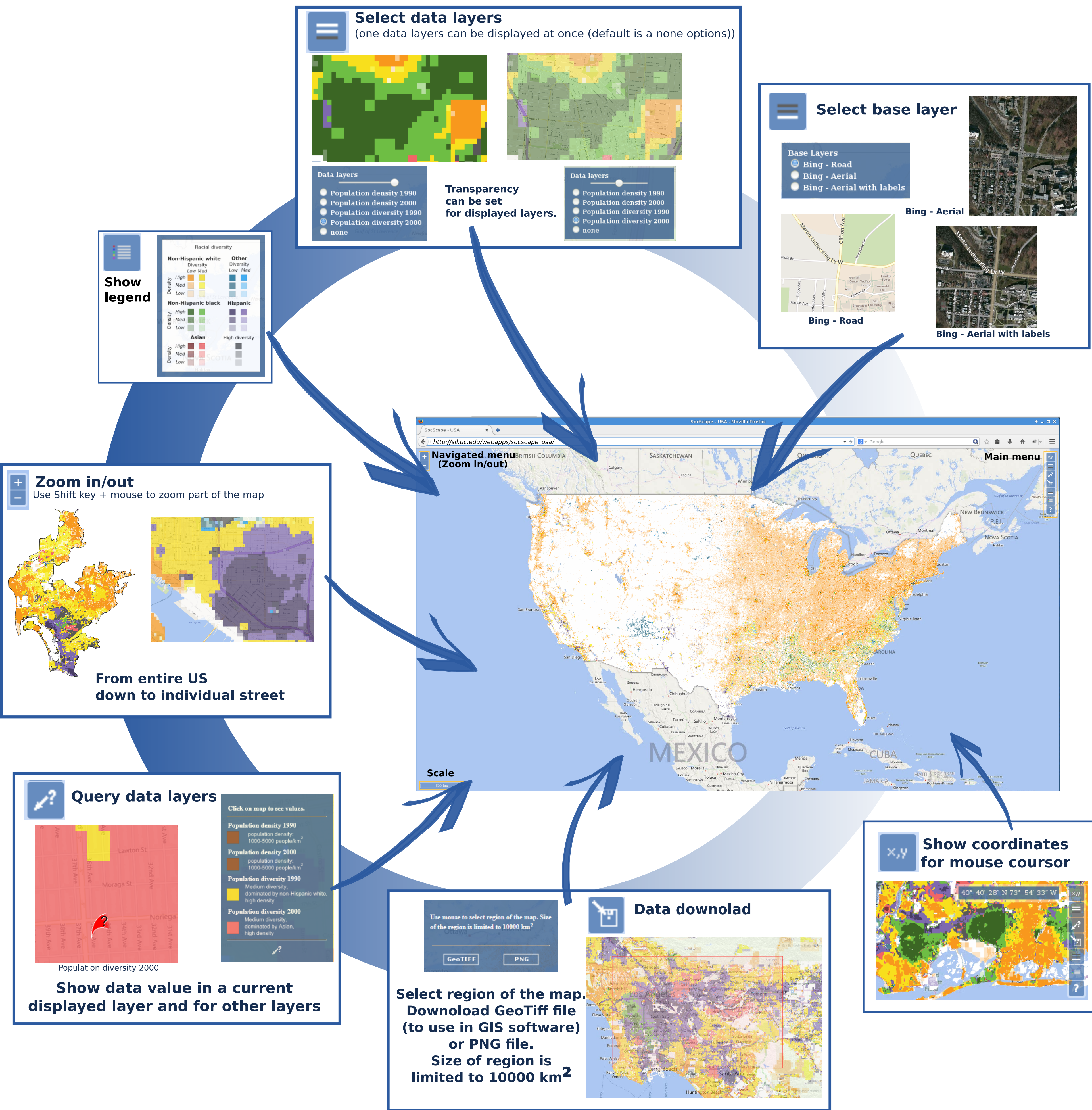


SocScape

Exploring High Resolution Demographic Grids

http://sil.uc.edu/webapps/socscape_usa/

SocScape (Social Landscape) geodemographic map online



SocScape is:

- a GeoWeb application designed to explore racial diversity and population density for the entire United States.
- a computerized map application, which works much like a Google Maps.
- a web-based tool, which works also on mobile devices (like smartphones, tablets).

Currently, we have gridded population and race/ethnicity. Future work will concentrate on gridding additional variable (age, income), making available additional maps and on calculating grids for the 2010 Census variables.

SocScape can be useful for:

- Exploring racial diversity in 1990 and 2000 in metropolitan area.
- Exploring racial diversity in 1990 and 2000 in rural and small town for entire U.S.
- Detecting change in spatial dynamics of racial diversity.
- Fast and intuitive exploration of racial diversity at different scales (from the entire U.S. down to individual street).
- Downloading population and diversity data for future analysis in external GIS software.
- Downloading map as an PNG image for use in publication.

WEB APPLICATION FOR SPATIAL EXPLORATION OF RACIAL DIVERSITY OVER THE ENTIRE UNITED STATES AT 90 M RESOLUTION

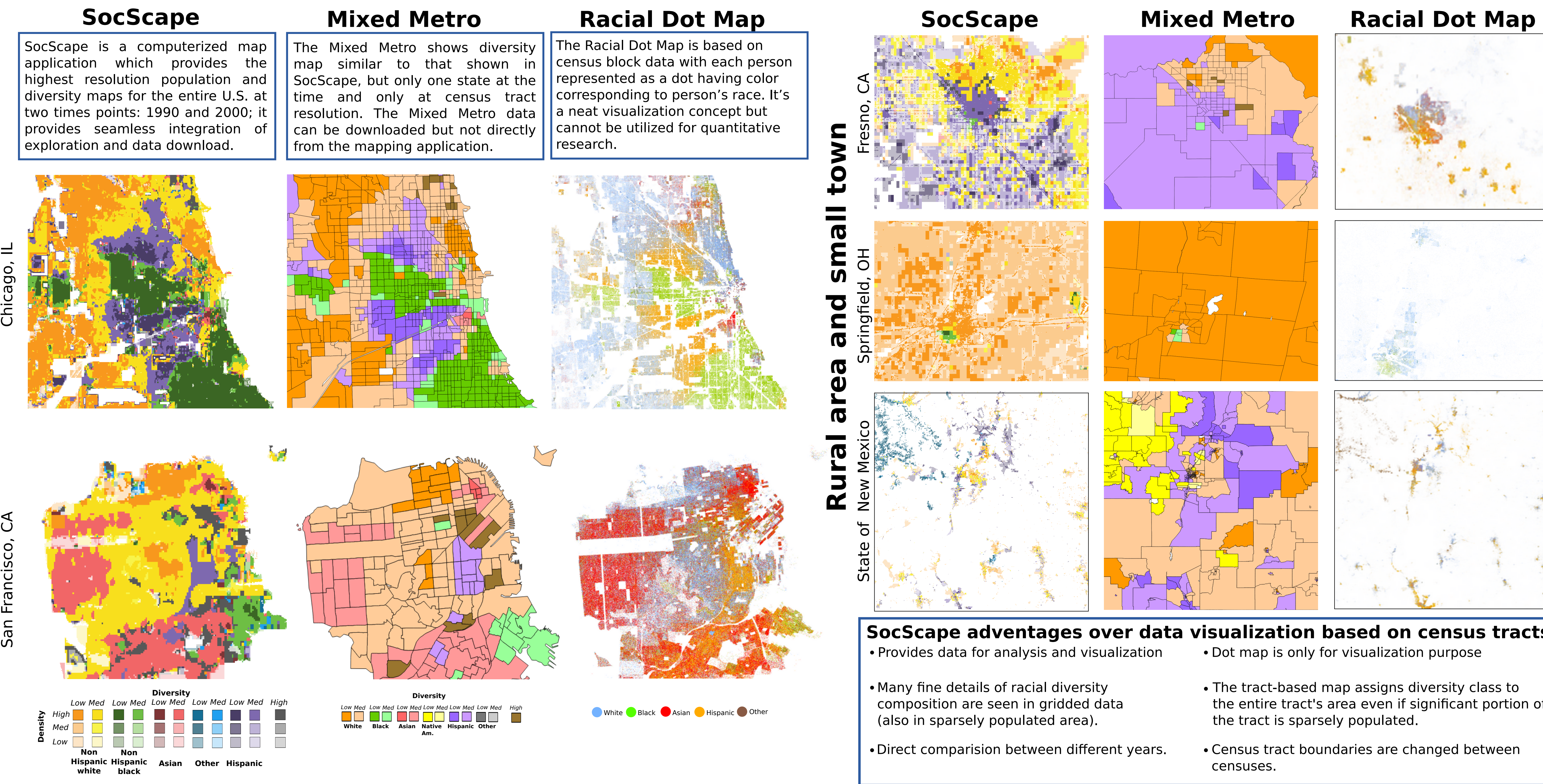
Anna Dmowska, Tomasz F. Stepinski and Paweł Netzel

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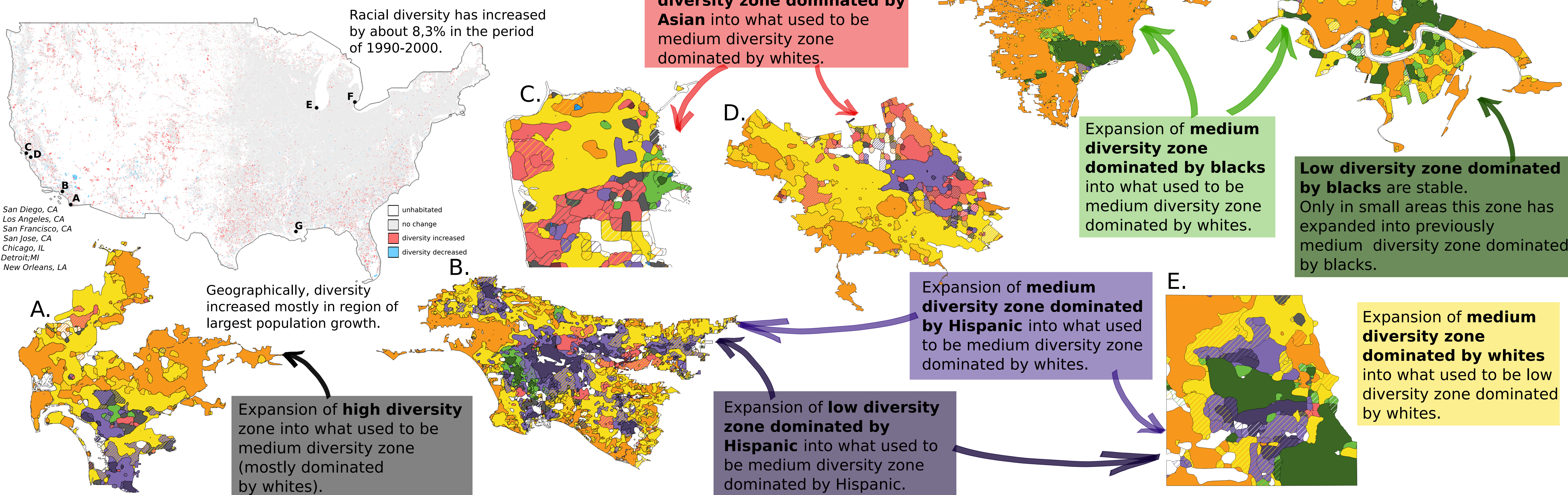
Space Informatics Lab
Department of Geography
UNIVERSITY OF Cincinnati

Mapping racial diversity

Example of visualization of spatial distribution of racial diversity in existing web applications:
SocScape (Social Landscape), **the Racial Dot Map** (<http://www.coopercenter.org/demographics>)
Mixed Metro (<http://mixedmetro.com/>)



Spatial dynamics of racial diversity



Demographic data layers

Demographic layers include maps of population density and racial diversity calculated for two time points, 1990 and 2000. These demographic grids have been calculated from census blocks using dasymetric modelling technique. Dasymetric modelling disaggregates census blocks into grid cells using land cover as auxiliary variable. Specifically, SocScape uses 30 m resolution National Land Cover Datasets or NLCD (<http://www.mrlc.gov/>) to sharpen the distribution of U.S. population.

Population density

Population density layers are classified into 11 classes (see legend). The original, unclassified 90 m resolution population density grid for the entire U.S. can be downloaded from <http://sil.uc.edu/> (390 MB).



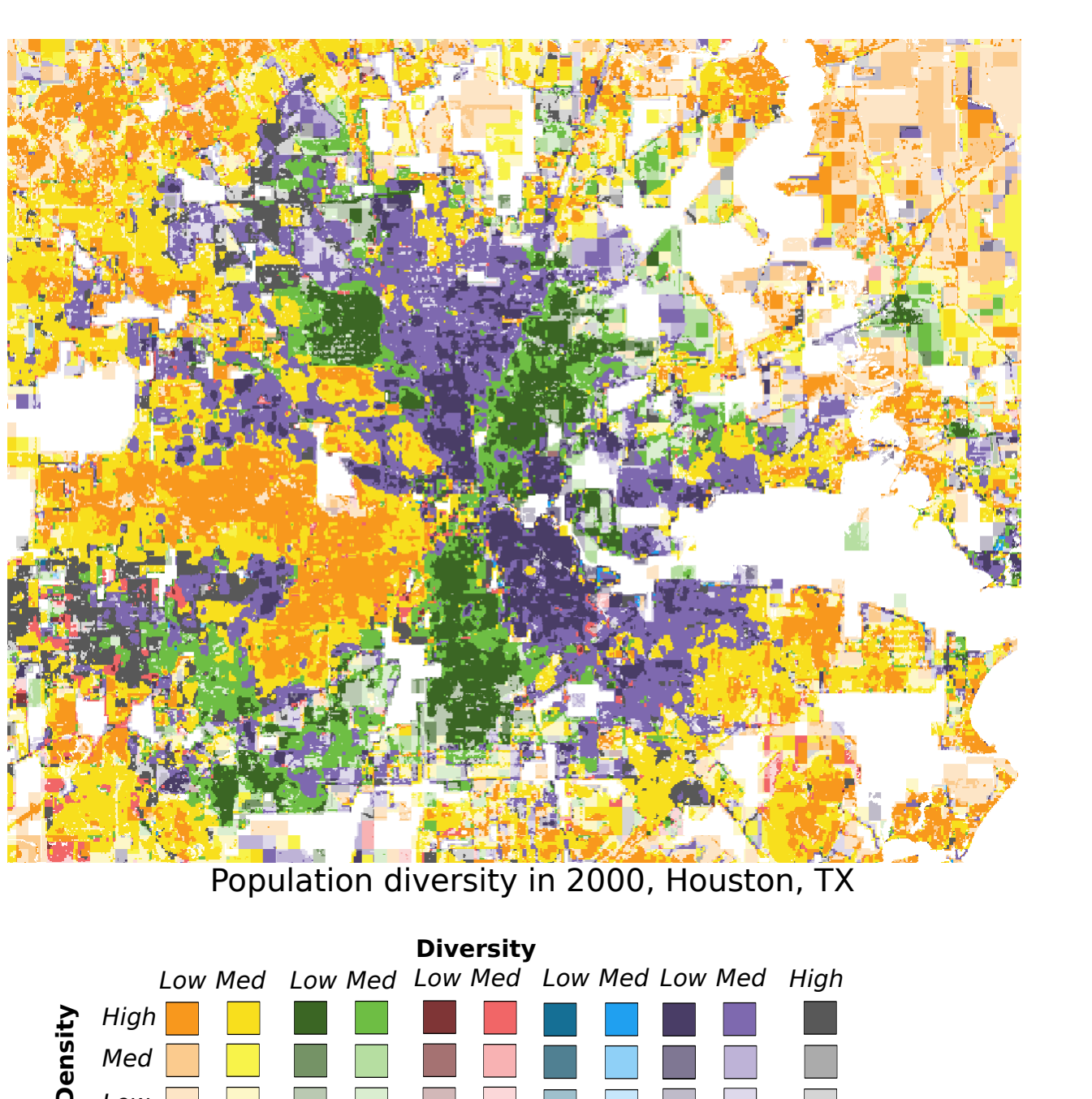
Racial diversity

Racial diversity - map with 33 categories derived on the basis of:

racial diversity - determined on the basis of standardized informational entropy (E):
(a) **low diversity** class ($E < 0.41$ and dominant race more than 80% population);
(b) **high diversity** class ($E > 0.79$ and dominant race less than 50% population);
(c) **medium diversity** otherwise.

dominant race: Non Hispanic White, Non Hispanic Black, Asian, Hispanic, Other (Native American and Hawaiian)

population density: (a) **low density** (less than 3 people/km²), (b) **medium density** (3-30 people/km²), (c) **high density** (equal to or greater than 30 people/km²)



Change map

Temporal change between spatial data is usually shown by side-by-side comparison of two maps corresponding to two different years (i.e. 1990 and 2000).

We show temporal change in racial diversity composition in a single map.
Unchanged area are shown in original colors assigned to each of 11 main diversity/dominant race classes (no distinction between population density).
Changed area are shown in stripes with the color of broader strips indicating a class in 2000 and the color of narrower stripe indicating a class in 1990. There are 144 possible categories of change.

