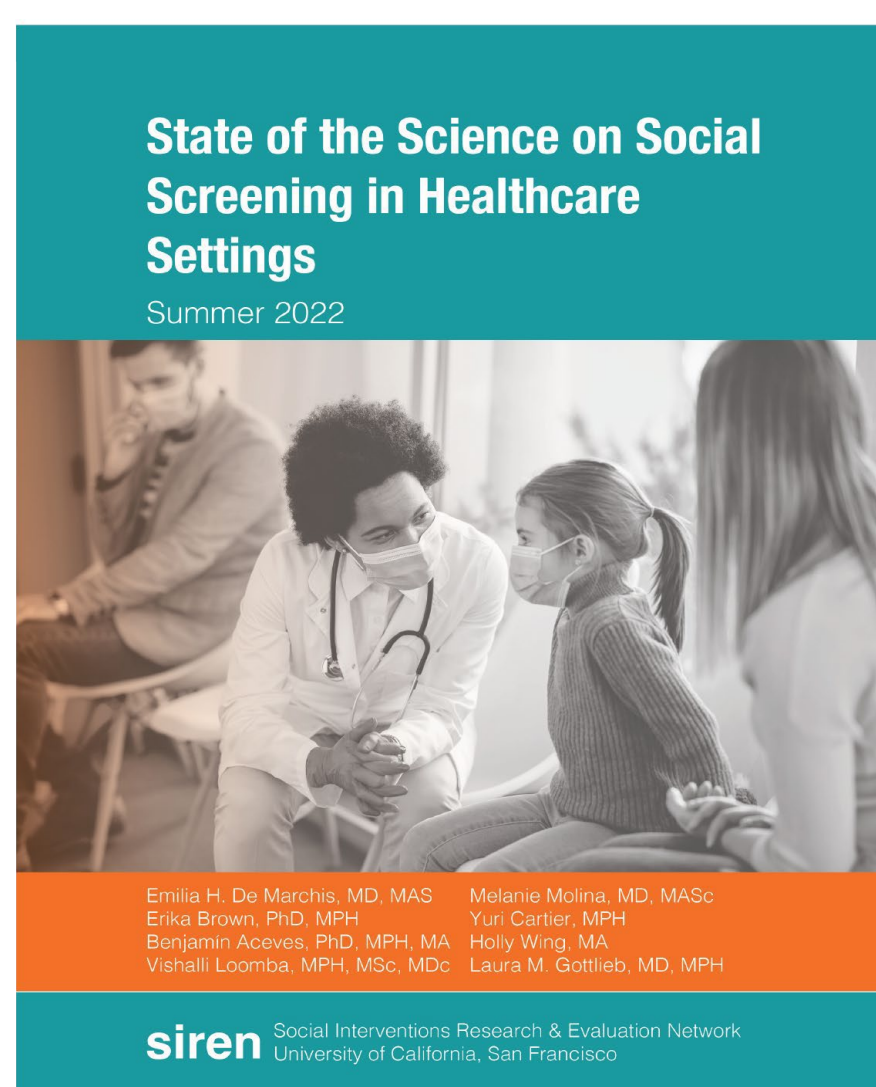


# SOCIAL DETERMINANTS OF HEALTH (SDH) RESEARCH CORE

## CONSULTATIONS

### INDIVIDUAL-LEVEL SDH MEASURES

Income, Wealth, Employment, Education, Occupation, Food insecurity, Housing insecurity, Financial insecurity, Living conditions, Social support, Internet access, Family structure, Discrimination, Health literacy and numeracy, etc.



UAB SDH Toolkit



### AREA-LEVEL SDH MEASURES

Area Deprivation Index, Social Vulnerability Index, Environmental Justice Index, Crime Risk Index, Walkability Index, Child Opportunity Index, Food Access, Rurality, Residential Segregation, Climate Vulnerability, Structural Racism, etc.

Overall Environmental Justice Rank		
Social Vulnerability	Racial/ Ethnic Minority Status	Minority Status
	Socioeconomic Status	Poverty No High School Diploma Unemployment Housing Tenure Housing Burdened Lower-Income Households Lack of Health Insurance Lack of Broadband Access Age 65 and Older
	Household Characteristics	Age 17 and Younger Civilian with a Disability Speaks English "Less than Well"
Environmental Burden	Housing Type	Group Quarters Mobile Homes
	Air Pollution	Ozone PM2.5 Diesel Particulate Matter Air Toxics Cancer Risk National Priority List Sites Toxic Release Inventory Sites Treatment, Storage, and Disposal Sites Risk Management Plan Sites Coal Mines Lead Mines Recreational Parks Houses Built Pre-1980 Walkability
	Potentially Hazardous & Toxic Sites	High-Volume Roads Railways Airports Impaired Surface Water
Health Vulnerability	Built Environment	Asthma* Cancer* High Blood Pressure* Diabetes* Poor Mental Health*
	Transportation Infrastructure	
	Water Pollution	

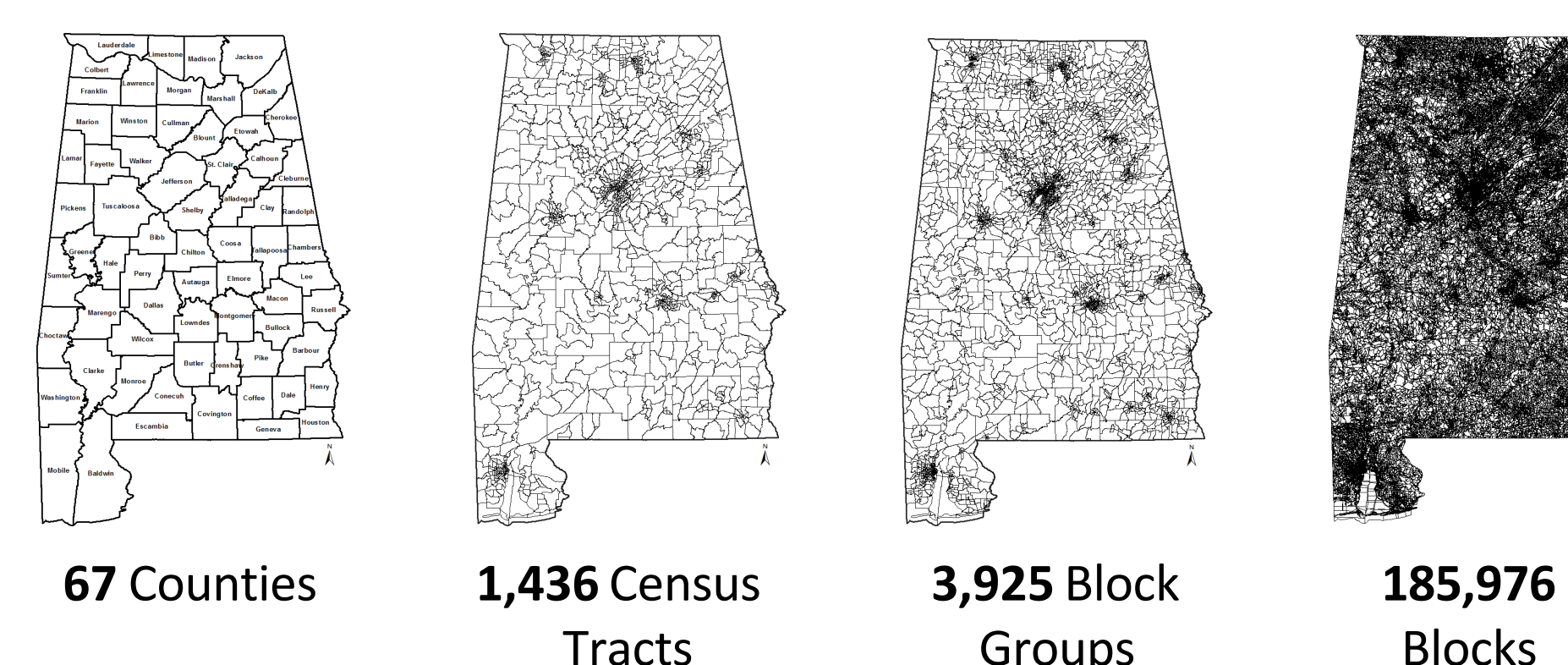
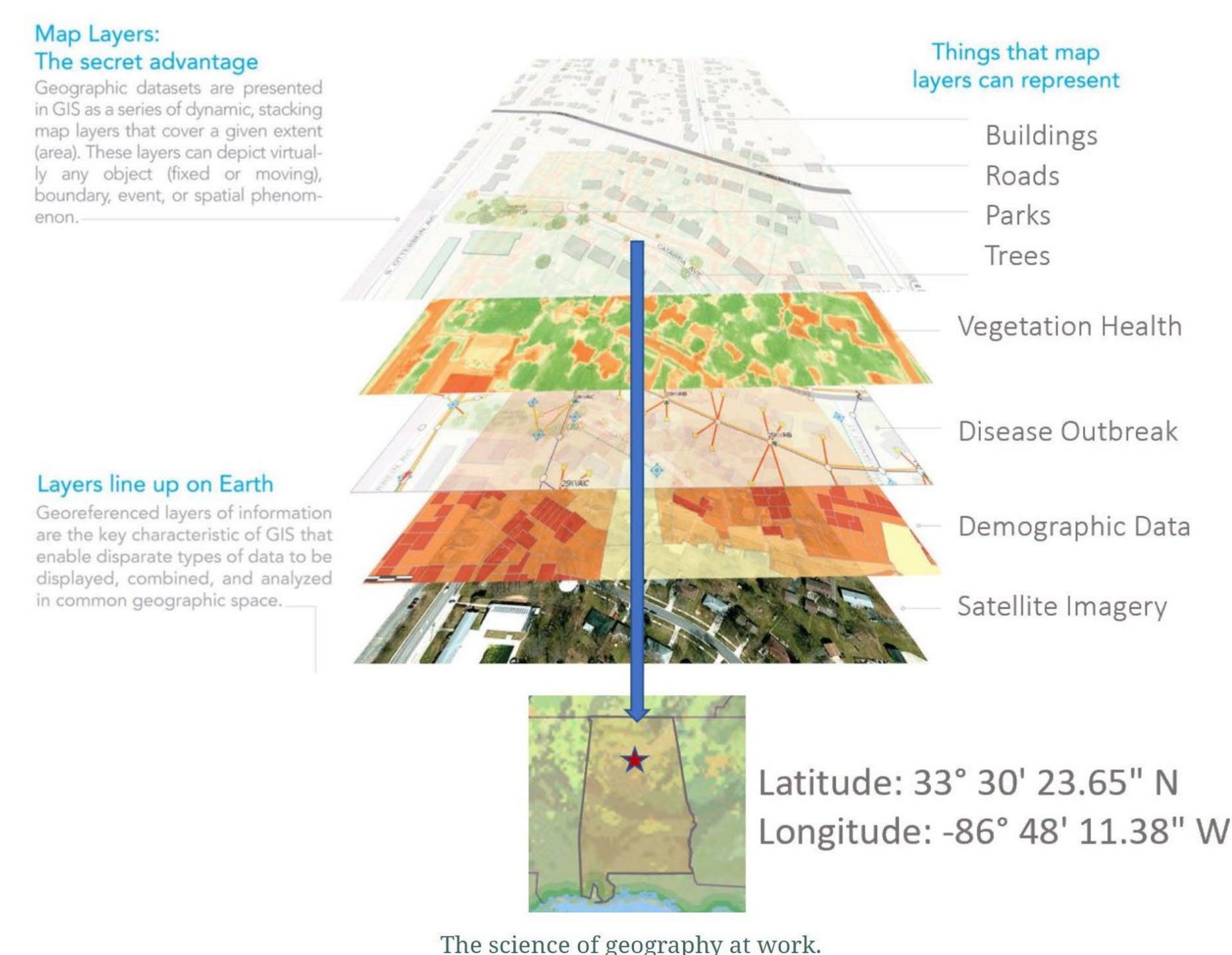
### Social Vulnerability Index

Overall Vulnerability	Socioeconomic Status	Below 150% Poverty Unemployed Housing Cost Burden No High School Diploma No Health Insurance
	Household Characteristics	Aged 65 & Older Aged 17 & Younger Civilian with a Disability Single-Parent Households English Language Proficiency
	Racial/ Ethnic Minority Status	Hispanic or Latino (of any race) Black or African American, Not Hispanic or Latino Native Hawaiian or Pacific Islander, Not Hispanic or Latino Two or More Races, Not Hispanic or Latino Other Race, Not Hispanic or Latino
Housing Type & Transportation	Multi-Unit Structures	
	Mobile Homes	
	Crowding No Vehicle Group Quarters	

### Area Deprivation Index (ADI)

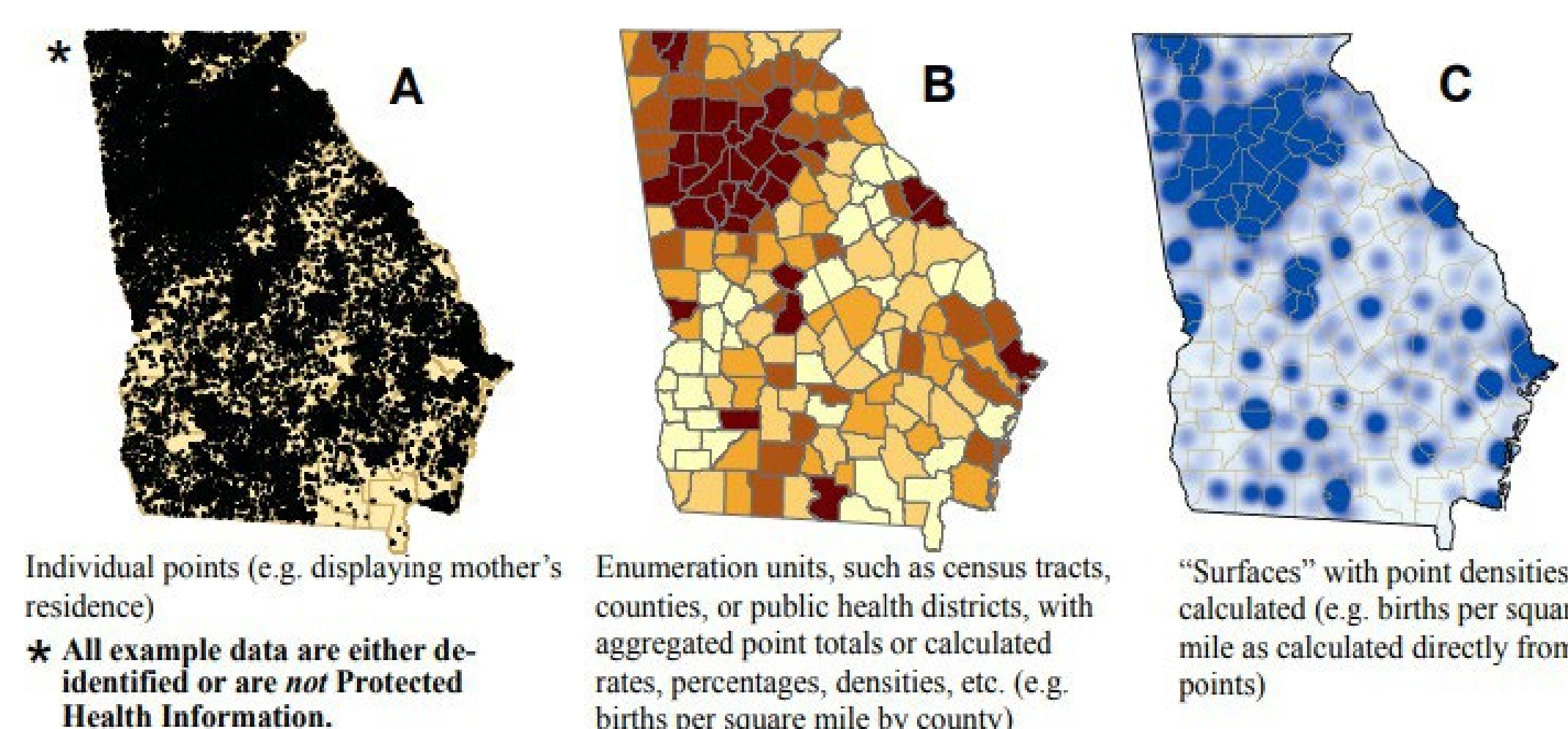
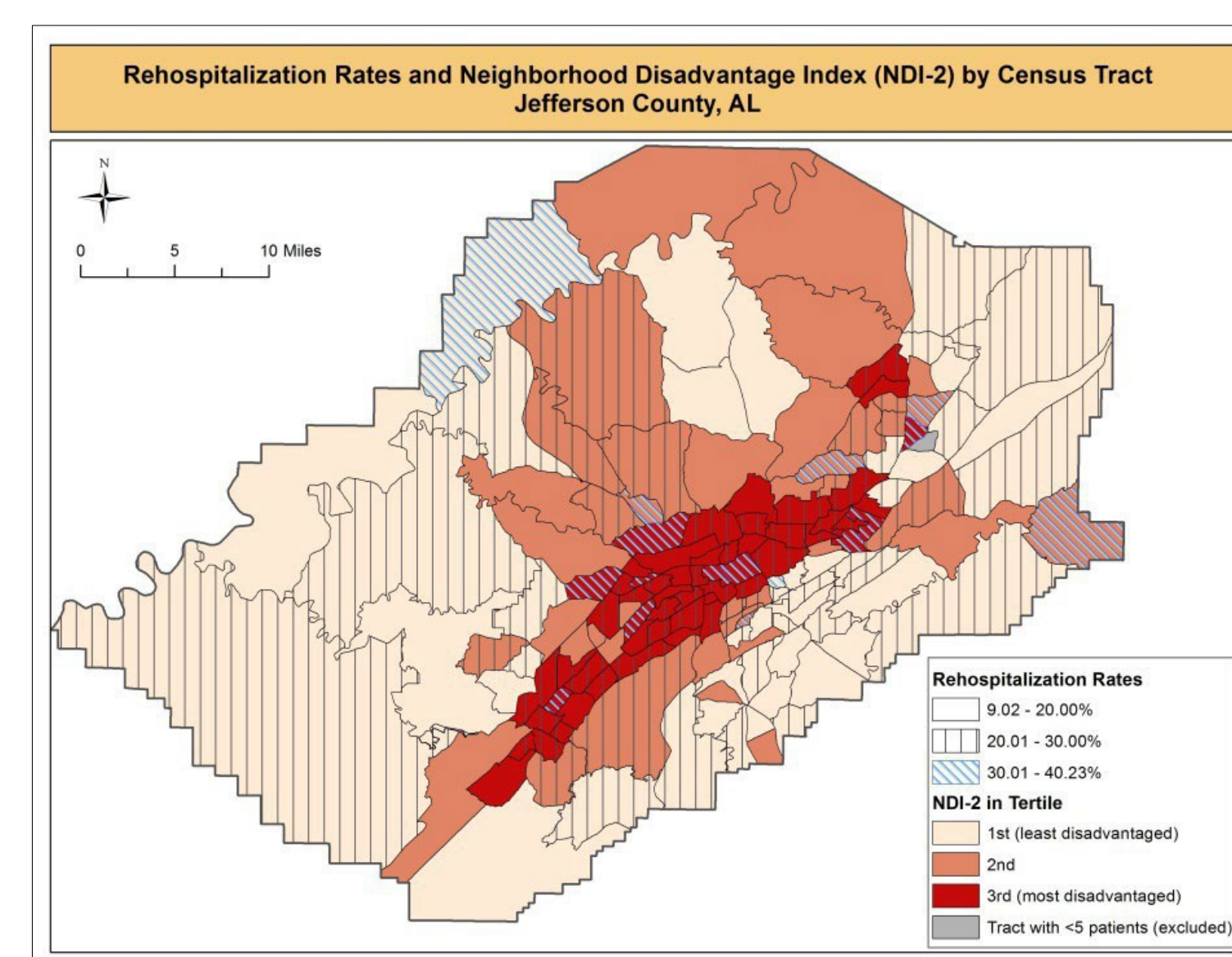
1	% aged ≥25 y with <9 years of education
2	% aged ≥25 y with at least high school diploma
3	% employed in white-collar occupations
4	Median family income, \$
5	Income disparity
6	Median home value, \$
7	Median gross rent, \$
8	Median monthly mortgage, \$
9	% owner-occupied housing units
10	% unemployed
11	% families below FPL
12	% below 150% of the FPL
13	% single-parent households with children
14	% households without a motor vehicle
15	% households without a telephone
16	% housing units w/out complete plumbing
17	% households with >1 person per room

## GEOCODING



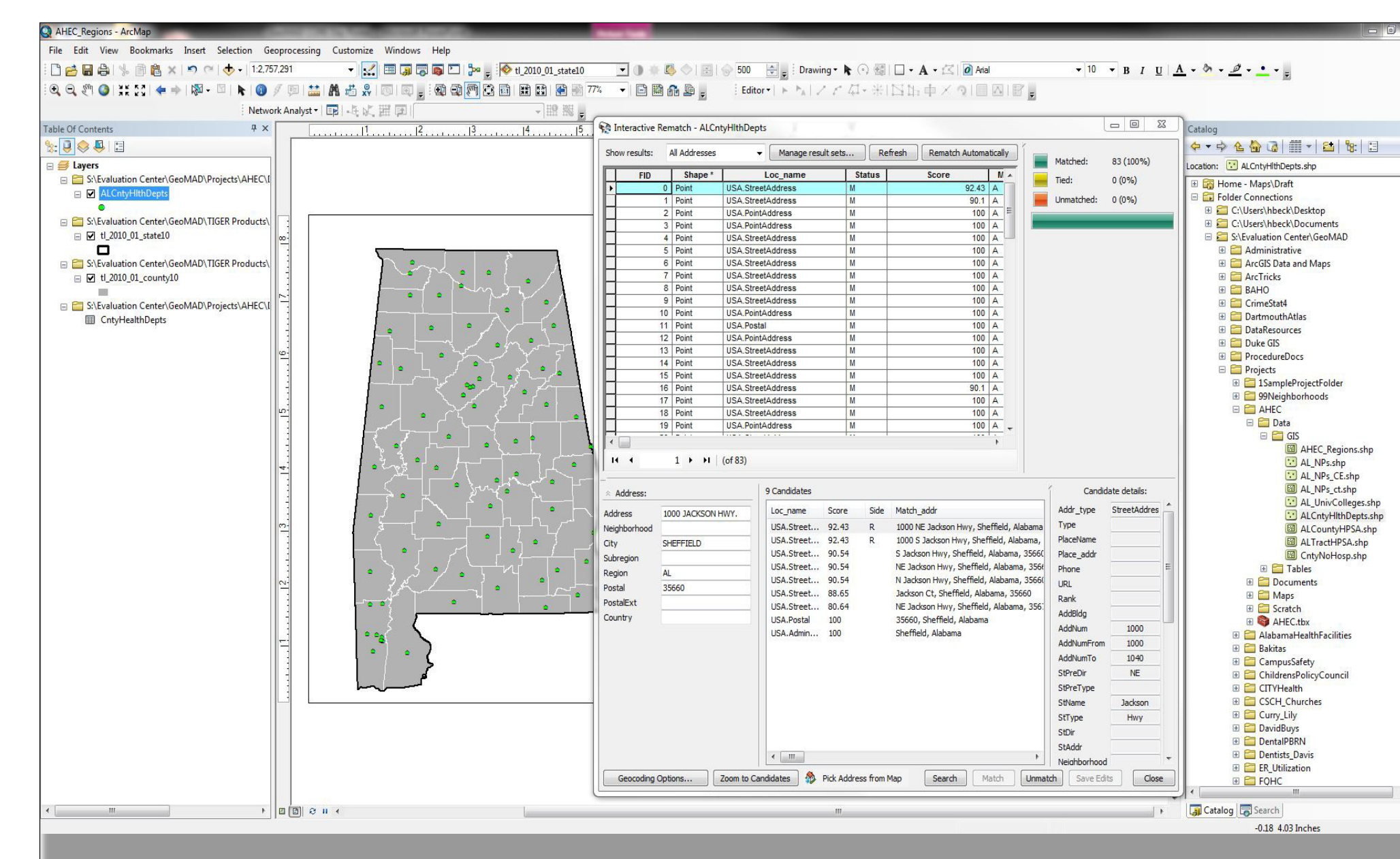
## MAPPING

- Study area mapping
- Hot-spot analysis
- Driving distance
- Interactive mapping
- Mapping for study eligibility



## DATA INTEGRATION

- Obtain geo-location based on residential address
- Using GIS software and StreetMap Premium, assign geo-identifiers (FIPS codes) to addresses
- Download SDH data for FIPS codes, link to patient data
- HIPAA compliant, accurate, minimal missingness

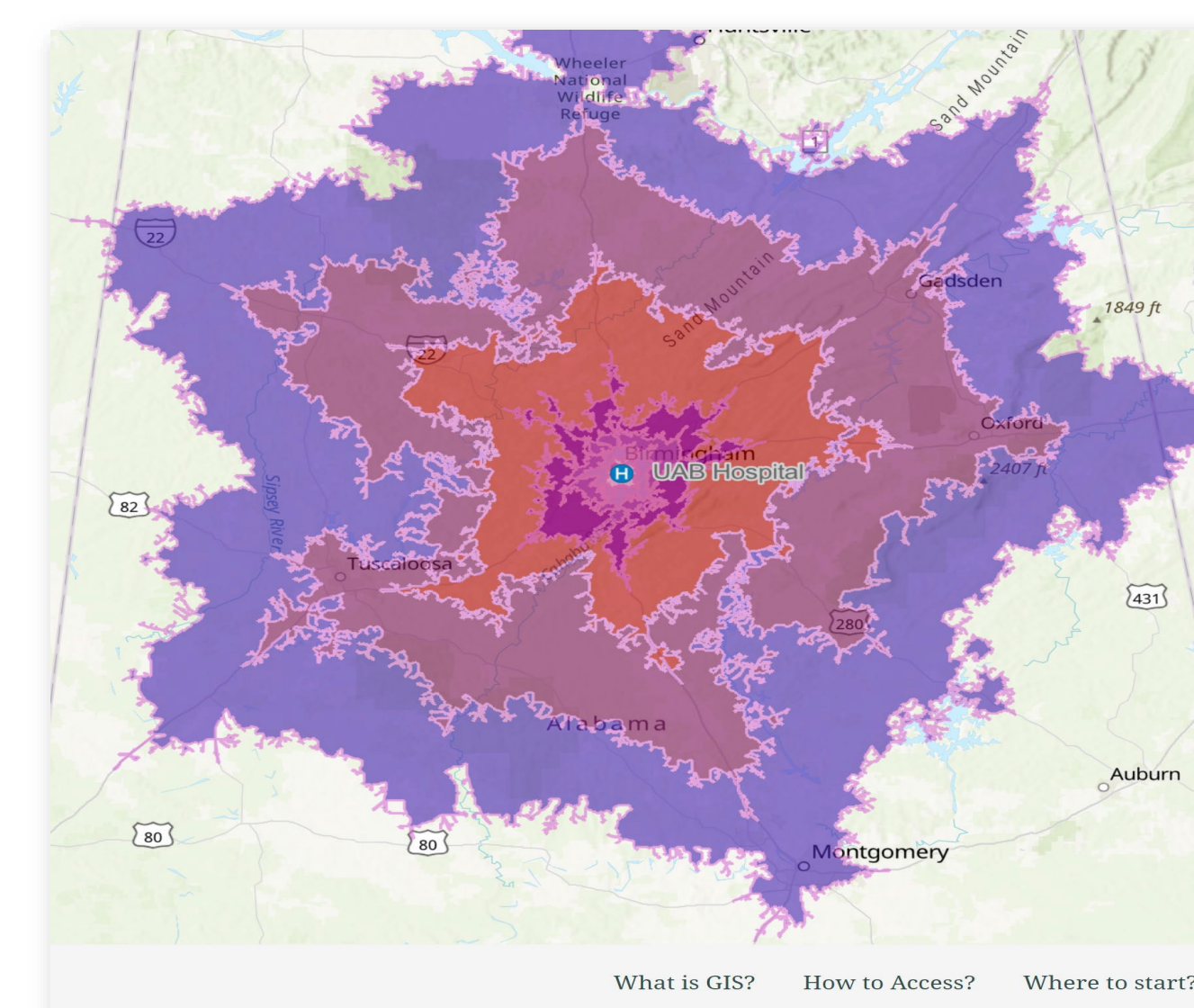


## STATISTICAL ANALYSIS

- Statistical analysis and model development
- Generalized linear mixed models
- Generalized estimating equations
- Robust standard errors with regression

## RESOURCES

- SDH Core Toolkit
- Overview of 90+ SDH variables
- Modules with validated instruments, primary documents, and cross-references to other SDH
- Geospatial Research & Information Domain (GRID)
- License: Campus-wide Esri ArcGIS license
- Access: ArcPro, ArcGIS Online, other Esri products, GIS Computer with StreetMap Premium
- Training: Online learning modules



## SERVICE REQUEST

WEBSITE:



CONTACT: SDHCore@uabmc.edu

DROP-IN CLINIC consultation:

Friday, 9:30 – 11 am (virtual)

DROP-IN CLINIC geocoding:

By appointment, 8:00 am – 4:00 pm (BDB 850N)

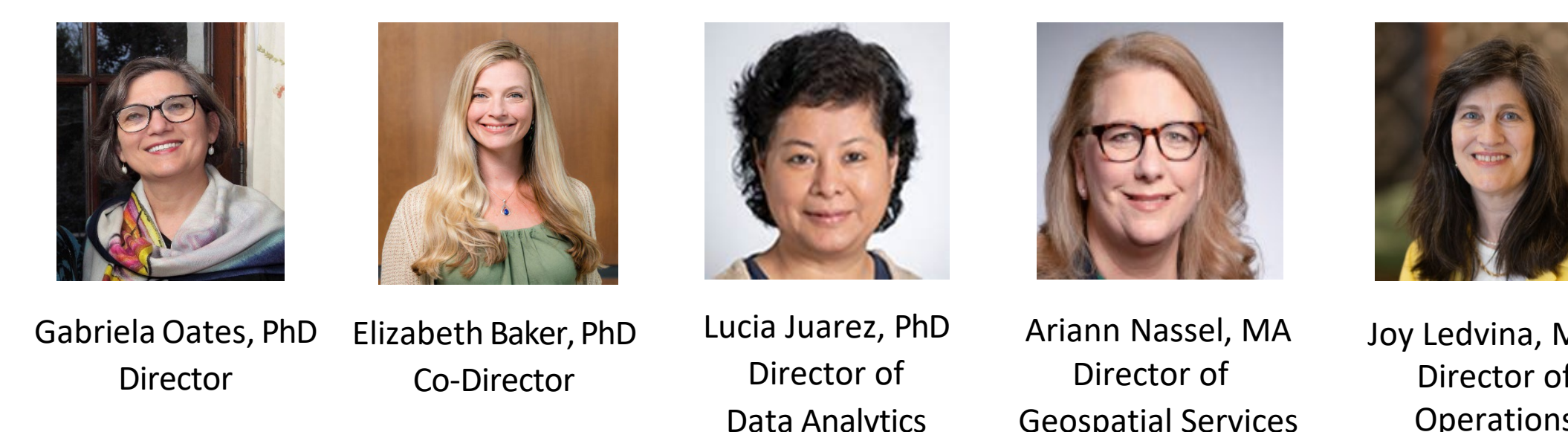
## USER BASE

- 112 investigators
- 6 schools, 51 departments/divisions
- 51 grant collaborations

## EXAMPLES OF PROJECTS

- Ritu Aneja, PhD: Distinct tumor-promoting multicellular niches and immuno-suppressive mechanisms in Black and White patients with TNBC
- Smita Bhatia, MD: Predicting key adverse outcomes in blood or marrow transplant survivors
- Elizabeth Brown, PhD: Role of disadvantage, mutographs and T Cell immunity on MGUS in African Americans
- Stephen Clarkson, MD: Social vulnerability and hospitalizations for heart failure
- Miranda Curtiss, MD: Natural history of ABPA treated with biologics for uncontrolled severe persistent asthma
- Maria Danila, MD: Gout care follow-up after an emergency department visit for gout
- Brad Fancher, MD: Residential green space and hospital admissions in allergic vs non-allergic asthma patients
- Mackenzie Fowler, PhD: Association between food access and frailty among older adults with GI cancer
- Jeffrey Lebensburger, MD: Association of area deprivation with chronic kidney disease in pediatric sickle cell anemia
- Javier Neyra, MD: Neighborhood social determinants of health and acute kidney injury during hospitalization
- Aman Wadhwa, MD: Individual- and area-level socioeconomic disadvantage and risk of death due to chronic health conditions among autologous blood or marrow transplantation survivors for lymphoma

## CORE TEAM



Gabriela Oates, PhD Director  
Elizabeth Baker, PhD Co-Director  
Lucia Juarez, PhD Director of Data Analytics  
Ariann Nassel, MA Director of Geospatial Services  
Joy Ledvina, MBA Director of Operations

