
Mapping Racial and Socio-Environmental Inequalities in Birth Outcomes

Elizabeth Miklya Legerski
Department of Sociology

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Neighborhood Environments & Health

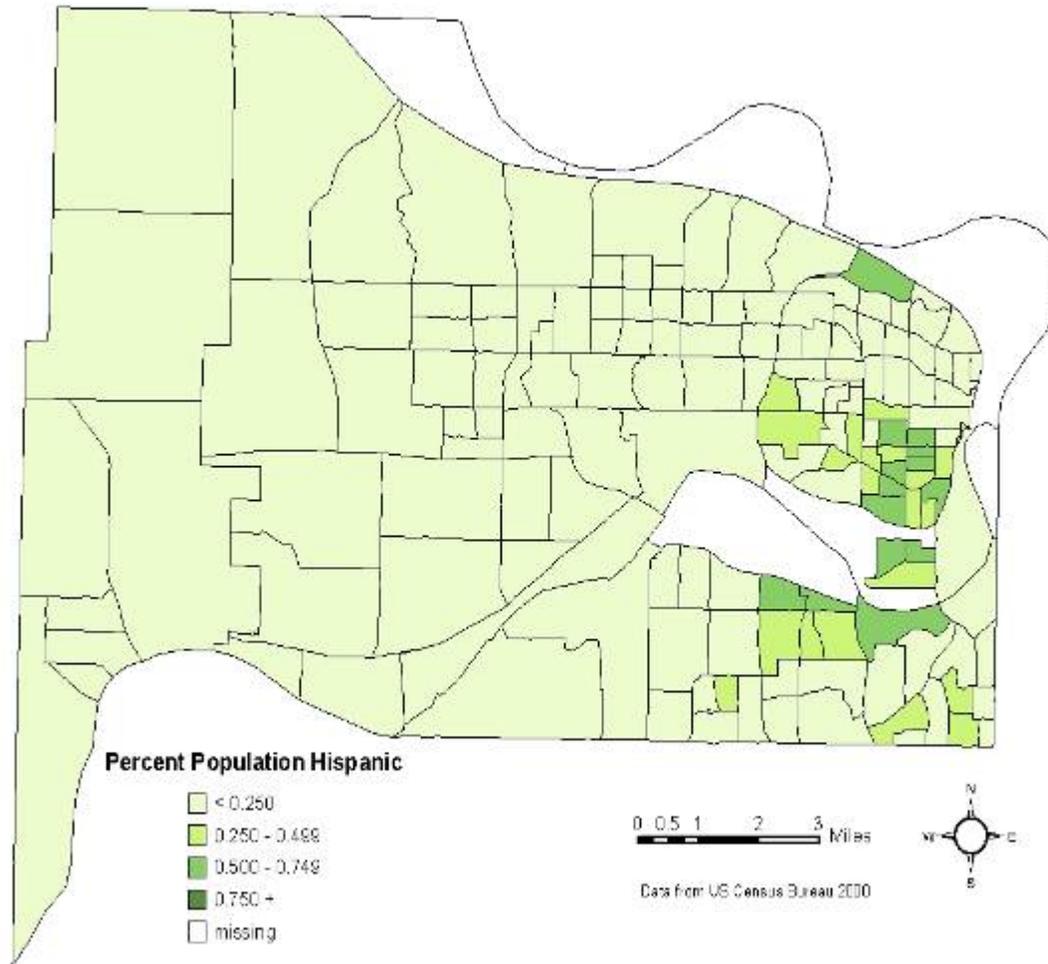
- Neighborhood environments shape health
 - Exposure to adverse conditions
 - Access to resources
 - The effects of poor birth outcomes
 - Infant mortality
 - Long-term developmental and health problems
 - How do neighborhood environments affect birth outcomes?
 - Does race/ethnicity matter?
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Data, Wyandotte County

- 2000 US Census: Neighborhood Socio-Environmental Conditions
 - Concentrations of unemployment, poverty, single-parent homes, owner-occupied housing, high school education, race (Black, Hispanic, White)
 - Overall neighborhood risk rank
 - KS Department of Health and Environment: Birth Outcomes, 2000-2002
 - Percent low-weight and pre-term births (total and by mother's race)
 - Unit of analysis, neighborhood (block group)
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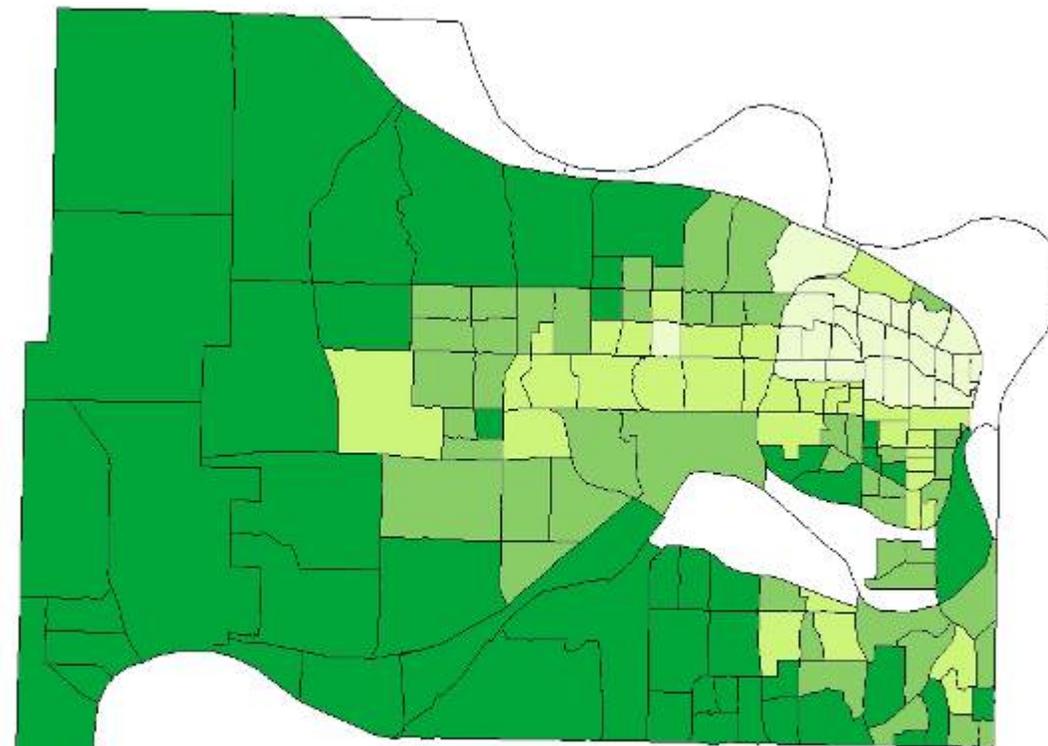
Mapping Residential Segregation

Wyandotte County, Kansas, Population by Race: Hispanic



Mapping Residential Segregation

Wyandotte County, Kansas, Population by Race: White

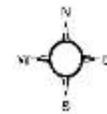


Percent Population White



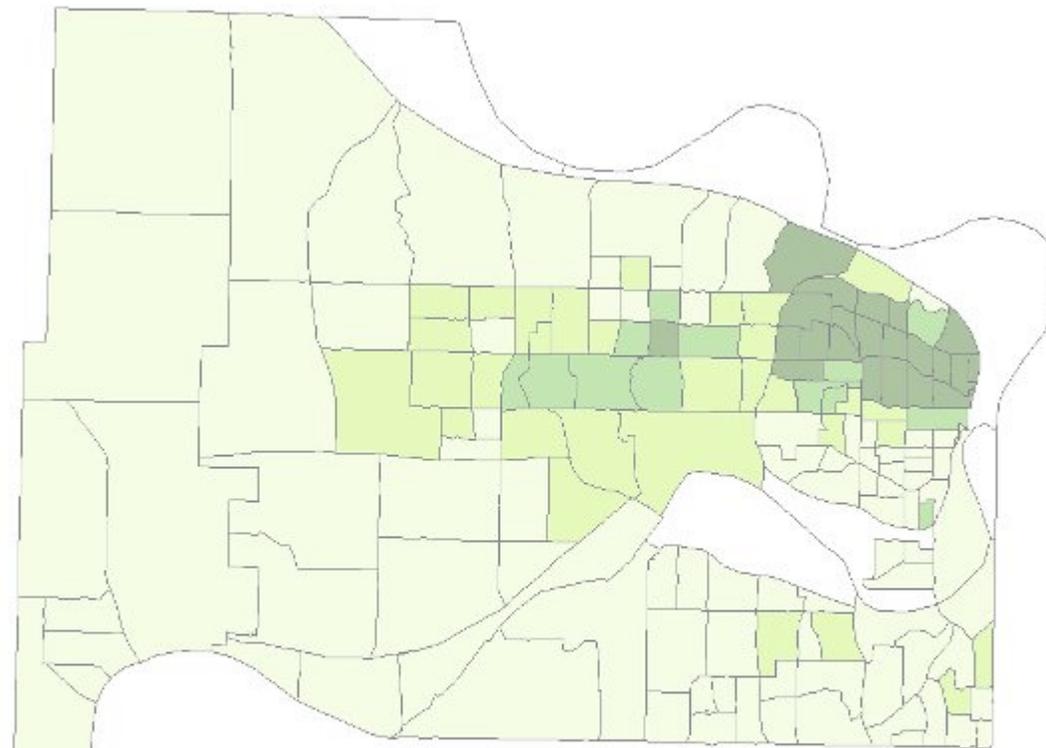
0 0.5 1 2 3 Miles

Data from US Census Bureau 2000



Mapping Residential Segregation

Wyandotte County, Kansas, Population by Race: Black



Percent Population Black

- < 0.250
- 0.250 - 0.499
- 0.500 - 0.749
- 0.750 +
- missing

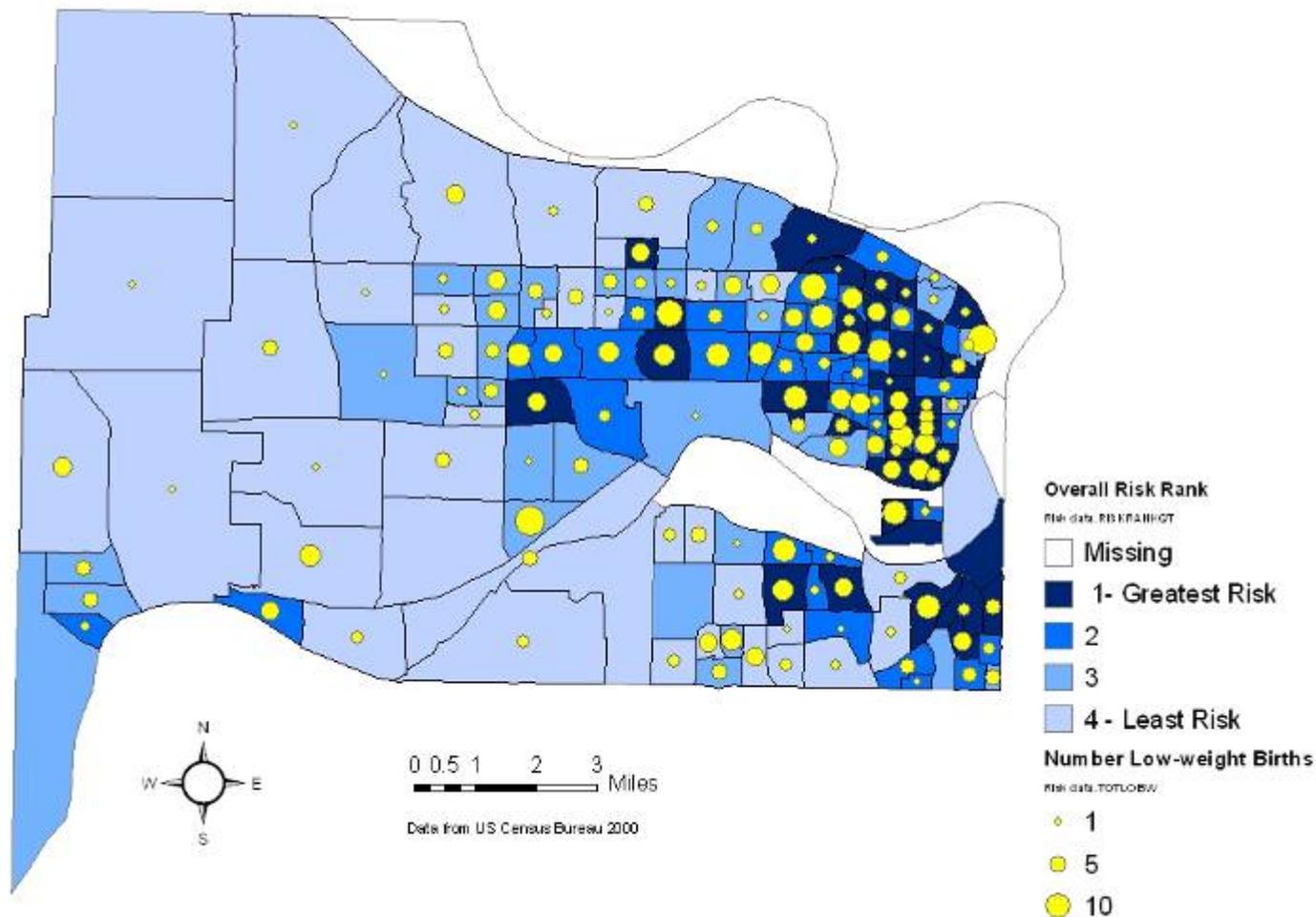
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Data From US Census Bureau 2000



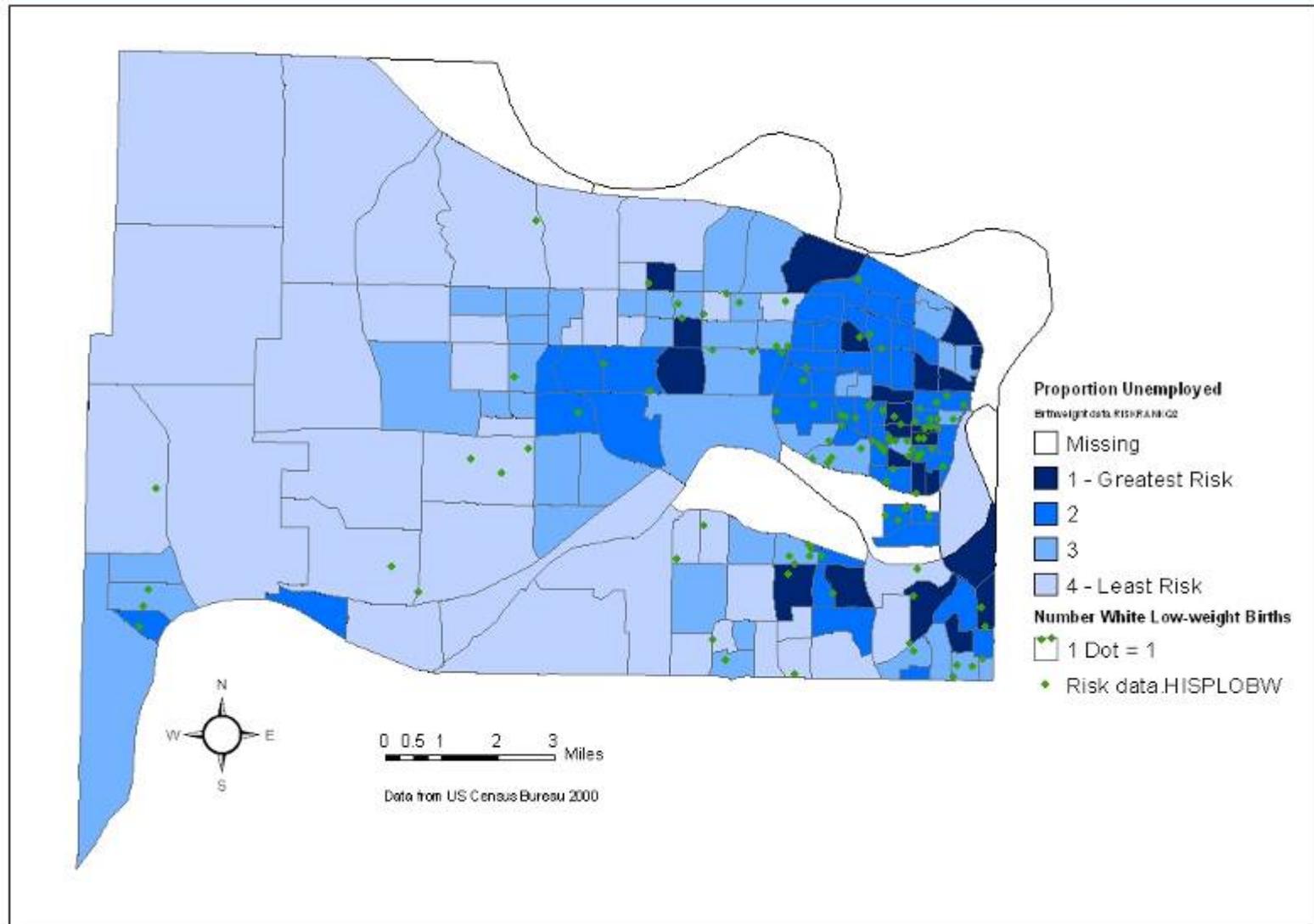
Mapping Poor Birth Outcomes

Socio-Environmental Risk & Low-weight Births



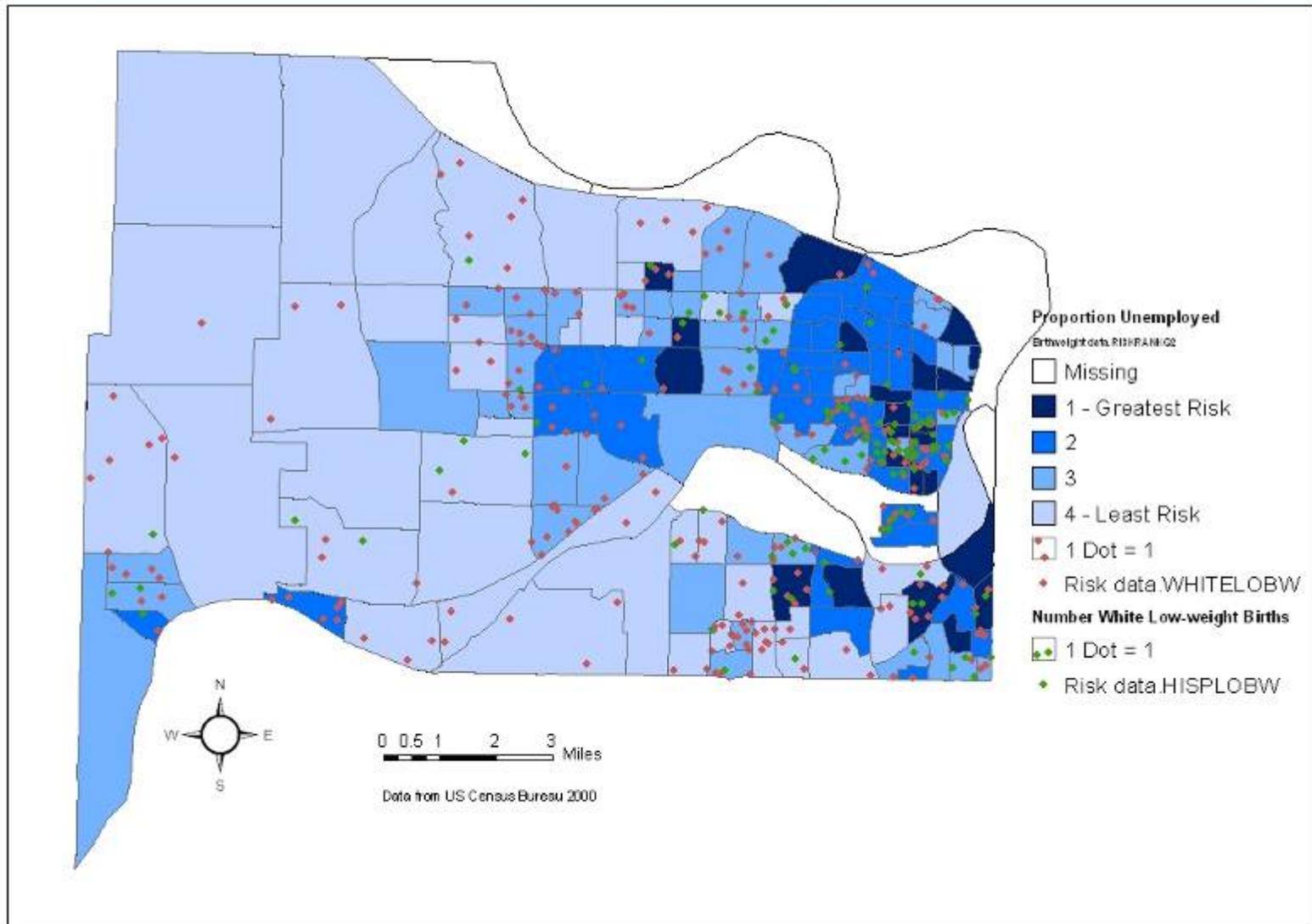
Mapping Birth Outcomes by Race

Socio-Environmental Risk & Hispanic Low-weight Births



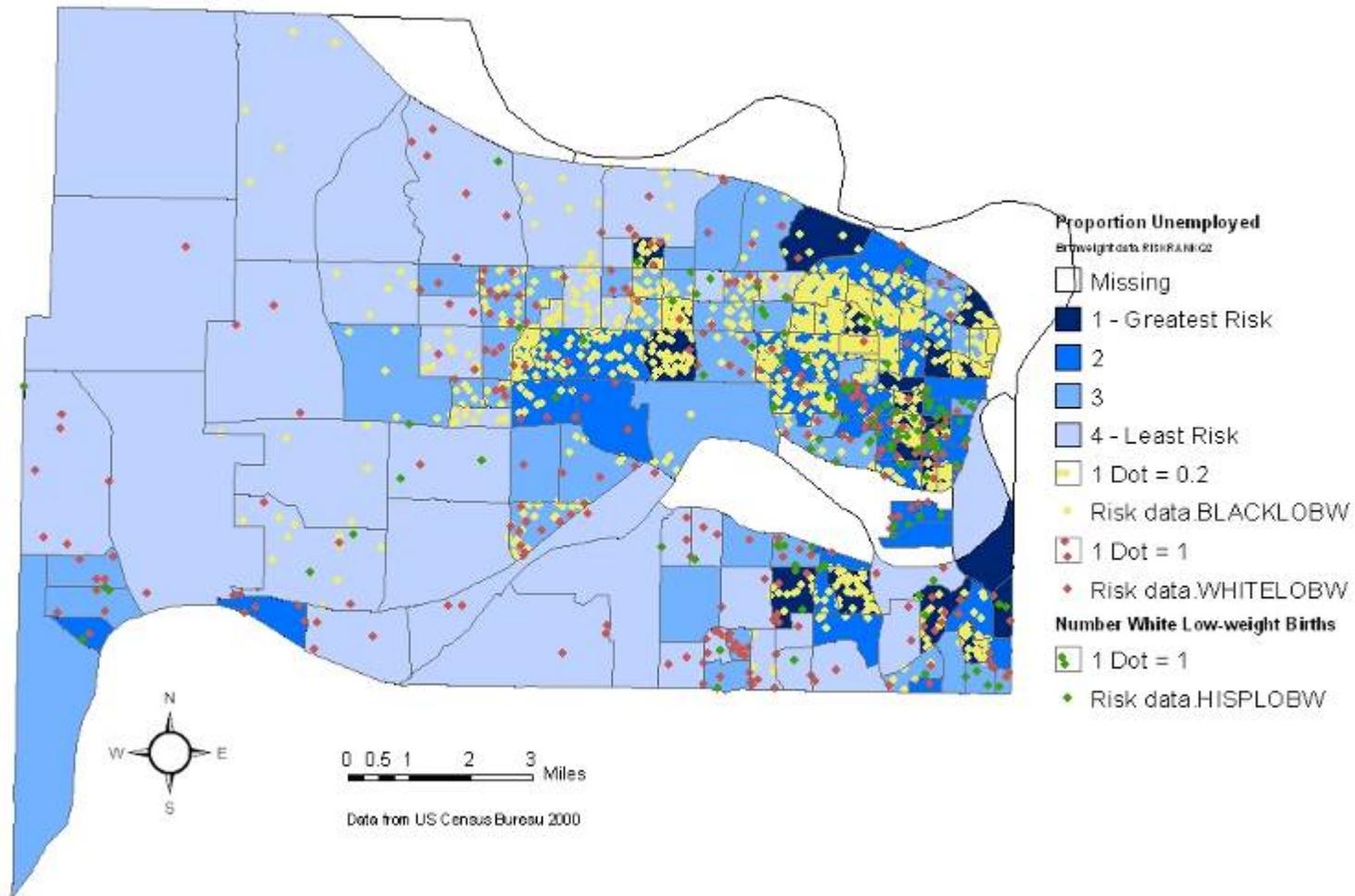
Mapping Birth Outcomes by Race

Socio-Environmental Risk & Hispanic, & White Low-weight Births



Mapping Birth Outcomes by Race

Socio-Environmental Risk & Hispanic, White, & Black Low-weight Births



Statistical Results

■ Analysis of Variance

- Riskiest neighborhoods have on average 2.2% more low-weight babies ($t = 2.163$, $p < .05$)
- Hispanics have significantly better birth outcomes
 - 3.8% less than blacks ($t = 3.285$, $p < .001$)
 - 2.4% less than whites ($t = 2.907$, $p < .05$)

■ Regression Analysis

- Concentration of single-parent homes, proportion population black, and unemployment, significant predictors of total low-weight births (explain 14-16% of variance)
 - Concentration of single-parent homes most significant predictor of proportion low-weight births to white mothers (but this measure does not explain a significant proportion of the model variance)
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Conclusions

- Birth outcomes vary considerably by neighborhood and by race of mother
 - The effects of individual risk factors also vary by race of mother
 - Possible unobserved variables
 - Measures of social capital may be important
 - Measures of proximity and ease of access to services
 - GIS application
 - Identifying at-risk neighborhoods
 - Locate service providers to maximize service usage
 - Focus limited state and federal resources
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