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Show Me: Diversity and Isolation Indicators of Spatial Segregation Within and Across Missouri’s School Districts

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ABSTRACT
Our study examines patterns of spatial segregation using diversity and isolation indicators within and across Missouri school districts. Evaluating segregation from a critical spatial perspective emphasizes the importance of place when evaluating the quality of educational opportunity for diverse student populations. The methodology involves the use of geographic information systems (GIS) maps that capture diversity and isolation dimensions of segregation using racial census tracts. Our spatial approach indicated statistically significant high and low diversity clusters, along with nearby areas of contrasting diversity. The analysis represents a methodological contribution to the study of quantifying segregation dimensions that more accurately represent how they operate across geographic space. In order for educational opportunity to improve, more walkable neighborhoods with high-quality schools in urban communities and interdistrict school transfer options in metropolitan regions are needed. If constructed and established at the same time, these reforms provide cost–benefit advantages to local and state residents.

Purpose
This issue of the Peabody Journal of Education aims to better understand the fluidity of race and its influence on social institutions such as individual schools and systems of education. One long-standing and significant area of research on race and schools captured in the literature involves the origins, trends, patterns, and effects of racial segregation in education (Tate, Ladson-Billings, & Grant, 1993). Reardon, Yun, and Chmielewski (2012) argued that urban school settings benefit from an expansive corpus of research, while the literature offers very limited research focused on suburban settings. They contended that as large numbers of low-income households and families of color migrate from urban and rural areas to the suburbs, new challenges face these communities with a limited history of support systems for serving diverse populations, warranting additional research. Their position is sound as a research rationale. What happens to the urban and rural communities as migration flows toward suburban communities? Given that this type of change usually occurs within the context of a single state, estimates can capture diversity and isolation within school districts across a state and provide a foundational understanding of the fluidity of race in education.

The present study identifies the extent of spatial segregation at the local level within school districts and illustrates where segregation operates as a continuous process across district boundaries within a
single state. Examining the dimensions of diversity and isolation at the local level allows for a “critical spatial perspective” (Soja, 2010) in which educational, social, and economic factors interact with their geographical context to either enhance or inhibit equal educational opportunity. Evaluating segregation from a critical spatial perspective emphasizes the importance of place and its implications for educating diverse student populations. In this study, spatial analysis with geographic information systems (GIS) estimates and maps the diversity and isolation dimensions of segregation within and across Missouri school districts. This spatial approach to identifying and analyzing segregation greatly enhances understanding about the location and extent of diversity and isolation, and subsequently helps clarify the need for removing educational barriers and creating opportunities for underserved populations.

The analysis employs terms from the five-year U.S. Census (2013) American Community Survey to identify racial/ethnicity groups to describe the dimensions of diversity and isolation segregation. It seeks to answer the following research questions: (a) Within Missouri are there statistically significant concentration areas within and across districts in the diversity dimension for racial/ethnicity groups; and (b) Are there statistically significant concentration areas within and across districts in the isolation dimension for racial/ethnicity groups? The diversity dimension captures the evenness of the racial/ethnic distribution, while the isolation dimension illustrates the racial/ethnic clustering. It is important to see how these segregation dimensions operate both within and across districts.

**Schools, segregation, and geography of opportunity**

This section provides a historical problem space associated with education, segregation, and opportunity. The problem space frames our analytical approach and informs the interpretation of our findings. One of the earliest legal cases that demonstrated the interdependence of schools, segregation, and opportunity in the United States was *Roberts v. City of Boston* (1850). In this case, the plaintiff sought to desegregate Boston’s public schools to achieve equality in education. Attorneys working on behalf of the black parents posited that separate schools humiliated blacks and fostered prejudice in whites. The plaintiffs lost the suit, but black leaders successfully lobbied the legislature for a law prohibiting segregation in education. Tate et al. (1993) stated, over a century before the historic *Brown* (1954 & 1955) decision, that the *Roberts* case depicted desegregated schools with quality, while linking quality schools with increased opportunities in the marketplace, society, and ultimately greater social integration.

In ensuing decades, litigators working on school desegregation cases continued their reliance on the line of argument in *Roberts*, while also carefully documenting the lack of equality related to resources. In a 1976 *Yale Law Review* article, Professor Derrick Bell critiqued the legal tactics of the NAACP Legal Defense and Education (LDF) in school desegregation cases. He argued that the LDF prioritized integration over their clients’ hopes for effective schools. Bell offered two principles that guided the NAACP LDF’s stance on integration. First, for many in the civil rights community, positive outcomes related to racial balance in school desegregation cases symbolized the nation’s resolve to achieve social equality. Viewed as interdependent with discriminatory practice in housing, employment, and other institutions, the school desegregation effort provided a rallying point for a broader set of social policy reform propositions. Second, the legal community composition consisted of upwardly mobile African Americans and whites, for whom integration represented a valuable favorable feature of their everyday lives. In stark contrast to the civil rights orthodoxy of the day, Bell opposed the LDF position and called on his colleagues in the fight for opportunity to focus on their clients’ wish to secure a quality education, not just the desegregation of schools.

Bell’s position proved prophetic. Demographic trends affirmed his concern that full-scale desegregation in the United States faced more than legal challenges. Success in the courtroom on school desegregation cases did not translate to the LDF’s vision of an integrated society. Today, high levels of racial segregation persist in the United States in spite of the passage of the *Fair Housing Act* (1968) more than 40 years ago. Several studies have captured the nature and scope of residential segregation in the post-*Brown* era and its enduring effects (e.g., Galster, 2012; Massey & Denton, 1993). Based on the 2010 Census, Frey (n.d.) reported a 50 or higher black–white segregation index for the country’s 70 largest metropolitan
regions. He estimated a 50 or higher Hispanic–white segregation index for the 24 largest metropolitan regions in the country.1

In addition, residential mobility has not resolved the segregation challenge. In a study of Chicago, Sampson (2012) reported that the greater the correspondence between two communities in racial composition, the higher the degree of probability that they are associated through residential exchange. Patterns signaled that mobility did not change residential racial segregation. Similarly, Crowder, Pais, and South (2012) reported on the mobility patterns of black and white families in 289 metropolitan regions across the country. The research indicated that families tend to relocate to other communities sharing concentrations of same race majorities. Thus, mobility failed to noticeably alter the gradation of residential segregation.

Reflecting on Brown after 60 years, Orfield, Frankenburg, Ee, and Kuscera (2014) reported that between 1968 and 2011 across U.S. public schools white enrollment declined by 28%, while black enrollment increased by 19%, and Latino enrollment soared, increasing by 495%. In 1968, the ratio of white enrollment to black and Latino enrollment combined measured nearly 4:1 respectively. Based on 2011 enrollment figures, the study results indicated that attaining an even distribution of students from all racial groups would require a decrease in contact by students of all races with whites, due to their declining share of the total.

Residential segregation and shifts in the demographics of school enrollment couple to reinforce school segregation along racial/ethnic lines (Wells et al., 2012). In addition, mobility trends in the education sector offer little in terms of improving segregation trends. Based on an analysis of 337 metropolitan areas with at least two districts serving primarily suburban students, Reardon et al. (2012) reported that minority suburbanization leads to increased segregation of black, Hispanic, and Asian students from white students.

The die appears to be cast—segregation seems to be permanently entrenched. A fair question is “Why pursue a better understanding of diversity and isolation in education?” However, precise estimates related to geography and demography remain vital to those seeking to support opportunity in the United States. Extensive evidence exists documenting the important role that geography plays in opportunities to learn, develop, and prosper (Chetty & Hendren, 2016; Galster, 2012; Guiner, 2003; Tate, 2008). Opportunity structure varies by place, and it is important to identify areas where aspects of the opportunity structure are limited.

Small (2014) argued that neighborhoods present social problems, but the problems vary depending on demographics and other factors. Small challenged scholars not to ignore heterogeneity in considerations of urban communities and the related risk of sinking into stock stories. In light of rapid suburbanization, with its out-migration from cities and rural communities to the suburbs, we would do well to extend his warning to include the risk of typecasting to rural and suburban environments. Moreover, because the primary responsibility for education rests with the state government, it is imperative to understand racial heterogeneity within this political unit.

The settings

Missouri, appropriately as the “Show Me” state, offers an important opportunity to examine diversity and isolation in the United States. Although excluded in the 16 states characterized as southern states by the U.S. Census, Missouri is often regarded as a border South state. Morris and Monroe (2009) posited that by securing and maintaining the right to participate in the slave enterprise, states such as Missouri actually align well with the values associated with the historical South. During the Civil War, the state supported a Confederate political regime in exile. In addition, Missouri’s beginnings and function as a political boundary locate it as a part of the history of the South. In addition to its southern characterization, Missouri affords a view into the Midwest as well (National Geographic Society, 2012). Missouri’s unique

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1 The segregation index measures the degree to which the minority group is distributed differently across the census tract. The scores range from 0 (completely integrated) to 100 (completely segregated) where the value indicates the percentage of the minority group that would have to move to be distributed exactly like whites.
character situated the state as a bellwether with respect to estimating the political and social values of the country. Specifically, the state’s geographic position and demographics created the conditions for this standing. For example, for nearly 100 years, the voting patterns of Missourians in presidential elections mirrored the winning results of the election. Today 6 million people reside in Missouri (U. S. Census, 2015). Non-Hispanic whites make up 80.2% of the population, black 11.4%, Hispanic or Latino 3.9%, Asian 1.8%, and those who identify with two or more races 2.1%. Beyond those five categories, no other demographic group exceeds 1% of the population.

The state’s two metropolitan regions (St. Louis and Kansas City) and an expansive topography of rural spaces are other distinctive features of Missouri. Both St. Louis and Kansas City embodied critical sites of school desegregation litigation. For St. Louis, Liddell v. Board of Education (1972, 1980, 1983, 1987, 1999) set a consequential precedent for opportunity to learn in the city’s metropolitan area through a unique reform strategy—an interdistrict transfer policy. Weighing the possible fallout of forced desegregation, suburban school districts enlisted in a voluntary desegregation arrangement with the St. Louis Public Schools (SLPS). Characterized as the most ambitious interdistrict plan in the United States with respect to the pupil enrollment and program accessibility, the St. Louis Voluntary Interdistrict Desegregation Plan attained many positive outcomes (Wells et al., 2009). The program allowed black students from SLPS to transfer to suburban public schools and white suburban students access to magnet schools in the city. The state of Missouri subsidized the districts accepting students from the city with the tuition rate and transportation costs and provided the capital needed to construct magnet schools within SLPS. SLPS and 16 school districts in adjacent St. Louis County participated in the program. At its height, interdistrict desegregation program matriculation exceeded 14,000 enrollees, nearly twice as many as another program located in Indianapolis, the second largest interdistrict program in the country (Voluntary Interdistrict Choice Corporation, VICC, 2013; Wells et al., 2009).

The program boasted positive results and had a few drawbacks. Evaluation sources reported that black participants in the interdistrict transfer program fared better on achievement measures, graduate rates, and college enrollment relative to students who remained in SLPS’s neighborhood schools (Freivogel, 2002; Wells et al., 2009). Ultimately, transfer school enrollees outperformed their peers on measures of educational attainment relative to peers in city magnet schools. Downsides of the program included reports of racial bias and discrimination in suburban schools, including the prevalence of in-school segregation through tracking.

Unfortunately, in 1998 state financial support of the interdistrict transfer program waned with the ratification of Missouri Senate Bill 78 (1998). The measure effectively ended the funding provisions of the desegregation process. Scaled down in 1999, the current version of the interdistrict program, while significantly smaller (only a few participating school districts remain), is still very popular. The remaining districts enroll nearly 5,000 students and carry a waiting list of almost 4,000 students (VICC, 2013).

In the aftermath of the Brown decision, the Kansas City Public Schools (KCPS) escaped judicial oversight throughout the 1950s and 1960s (Dunn, 2014). In 1977, the KCPS sued the state of Missouri, several suburban school districts, and three federal agencies, asserting that the defendants forced KCPS to manage a segregated school district in violation of the rule of law. The school district recognized that the region’s shifting demographics, white flight, and residential housing patterns made forced busing untenable to black and white parents. Instead, the school district viewed another possible remedy—a metropolitan student transfer plan—as more politically viable. In a surprising twist, the presiding judge shifted the school district from its original status as plaintiff to defendant and ruled that the defendant operated an unconstitutionally segregated school district.

In light of the U. S. Supreme Court’s Milliken v. Bradley (1974) decision that severely narrowed the mandate of school desegregation policies to encompass urban districts and not metropolitan regions more broadly, the presiding judge ordered major renovations to the physical plant of KCPS and the creation of a districtwide magnet school program with the aims of attracting white suburban families into the KCPS and improving the academic attainment of black children. Over time, the cost of the rebuilding plan exceeded $2 billion (Dunn, 2014). To pay for this effort, the presiding judge called for a tax increase on property within the KCPS district boundary. Deemed one of the most expansive and expensive school
desegregation remedies in history, indigenous leadership and outside policy analysts critiqued the effort (Dunn, 2014; Morantz, 1996).

Morantz (1996) reports that evidence emerging at the time suggested that magnet plans created educational inequity in the form of tiered systems, where magnet schools gained resources and the other schools in the system lagged. To address this concern, the school district and plaintiff’s counsel developed a broad-reaching magnet school strategy that transformed all senior high schools and middle schools, as well as half of the elementary schools, into magnet schools. Design challenges with the evaluations made many of the achievement studies difficult to interpret. Evaluation studies attribute at best only modest gains or no increases in achievement or graduate rates. In terms of desegregation, the district experienced a redistribution of its existing student population with slight increases in interracial exposure. With respect to regaining white students from suburban districts, the desegregation strategy yielded evidence of increased racial isolation from the 1986–87 school year to the 1992–93 school year from 73.5% minority enrollment to 74.8%, respectively. At best the desegregation strategy slowed the pace of racial isolation. Nevertheless, today racial isolation remains a reality in KCPS.

The interdependence between education disparities and limited economic mobility remains one of the legacies of racial segregation in Missouri (Chetty, Hendren, Kline, & Saez, 2014; Morris & Monroe, 2009). Hogrebe and Tate (2010, 2012, 2015a, 2015b) and Thorne-Wallington (2014) reported significant correlations between race and poverty and high school students' academic outcome measures (mathematics scores, science scores, reading scores, dropout rates, and graduate rates) used in Missouri's accountability system. Although it varied across the state, the strength of the relationships between demographic characteristics (i.e., race coupled with poverty) and academic performance clustered in regions. Urban school districts in metropolitan St. Louis and Kansas City with predominantly poor black student populations demonstrated the strongest associations between demographic characteristics and academic outcomes in the state. Such evidence indicates that place matters in terms of performance on Missouri's accountability metrics. Earlier research focused on the state added to this finding. Hogrebe and Tate (2010) found that schools with more students classified as minority and free and reduced-lunch (FRL) recipients achieved

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**Figure 1.** Two dimensions of segregation adapted from Oka and Wong (2014) and Reardon and O'Sullivan (2004).
higher science proficiency scores when they had a greater percentage of courses taught by highly qualified teachers and more teachers with regular certification. As described in the geography of opportunity literature, their estimates found that the school composition variables of FRL percentages and minority percentages relate significantly to students’ academic proficiency.

**Measuring segregation**

Over the years there have been a variety of ways in which segregation has been quantified. Massey and Denton (1988) examined the use of segregation measures and classified them into five dimensions: (a) evenness (the differential distribution of population groups), (b) isolation (the potential interaction of
population groups), (c) concentration, similar to the concept of density (the distributional intensity of population groups), (d) centralization (the dispersion of population groups with respect to the city center), and (e) clustering (the degree of spatial separation or proximity of population groups). Reardon and O’Sullivan (2004), when clarifying earlier research, concluded that evenness and isolation represent the two distinct conceptual dimensions of segregation. Separate global segregation measures, such as the dissimilarity index and the isolation index, produce one value for the extent of segregation across an entire study area (Ellen et al., 2012). However, Oka and Wong (2014, 2015) maintain that global segregation indexes do not capture the specific nature of segregation that occurs in the local context. In addition, they discuss the limitations of using only “percentages” (e.g., percent underserved, percent poor, etc.) to represent local segregation patterns. Instead, they developed two local measures of segregation that show the spatial patterns of segregation across the target region. The researchers based these local spatial segregation measures of diversity and isolation on the two interacting dimensions of spatial segregation identified by Reardon and O’Sullivan (2004): evenness (diversity, integration) vs. clustering, and isolation vs. exposure (see Figure 1).

The Oka and Wong (2014) spatial measures of local diversity and isolation show how spatial segregation patterns manifest within districts and how they transcend district boundaries as continuous spatial processes.
FIGURE 5 Darker areas have greater diversity. The quantile classification creates the legend categories by placing an equal number of census tracts in each of the four categories.

Methods

To examine the variability of the diversity and isolation dimensions of segregation across Missouri districts in recent years, we used spatial perspective to visualize relationships in geographic space through mapping with ArcMap (Environmental Systems Research Institute, 2012). ArcMap, a geographic information system (GIS) software, integrates spatial and nonspatial data to produce maps. Because census tract data from the ACS 2013 represent smaller geographic units than school districts, patterns of racial segregation can be identified both within and across district borders.

The local diversity and isolation measures of segregation developed by Oka and Wong (2014) provide a more detailed neighborhood view than global or aspatial segregation measures can. They use the concept of “composite population counts” to include the counts from neighboring units in computing the population of the reference unit (see Figure 2).

Using composite population counts, the formulas for calculating the local diversity and isolation indices are as follows:

\[
\text{Local diversity index} = -\sum_{k=1}^{n} \left( \frac{cP_{ik}}{ct_i} \right) \ln \left( \frac{cP_{ik}}{ct_i} \right)
\]
Statistically significant clusters of high and low diversity census tracts. The greatest concentration of tracts with higher diversity is mostly located in the metro areas of St. Louis and Kansas City.

Where: $cp_{ik}$ is the composite population count for mutually exclusive group $k$ and $ct_i$ is the composite population count of the total population in the areal unit

Local white isolation index $= 1 - \left( \frac{ct_i - cw_i}{T - W} \right)$

Local black isolation index $= 1 - \left( \frac{ct_i - cb_i}{T - B} \right)$

Where: $cw_i$ and $cb_i$ are the composite population counts for white and black in the areal unit; $ct_i$ is the composite population count of the total population in the areal unit; $W$, $B$, and $T$ are the counts of white, black, and total population for the entire study area.

The local diversity and isolation measures for each census tract are mapped to show the spatial patterns within and across school districts. Local Moran’s I (Mitchell, 2005) is used to examine statistically significant clustering of diversity and isolation variables from census tracts across the state. A significant $z$ score for a local Moran’s I indicates that a census tract is surrounded by other tracts with similar values that are not due to chance. When these $z$ scores are mapped, tracts with similar values are shown in the same color to designate a cluster. The cluster may comprise districts with low, medium, or high values.

**Data sources**

The data consists of 1,393 census tracts from the five-year estimates of the 2013 American Community Survey. In addition, boundaries for the 520 Missouri school districts are included for overlay on the
statistically significant clusters of high and low diversity census tracts in the St. Louis area.

All data are cleaned and uploaded in the ArcGIS software system.

**Variables at the census tract level**

- Total population count of people residing in the tract
- Count of white population residing in the tract
- Count of black population residing in the tract
- Combination count of all other population groups residing in the tract

**Results**

The local diversity value was calculated for each of the 1,393 census tracts within and across Missouri school districts. Figure 3 maps the diversity values for all the tracts in the state and shows concentration areas of the local diversity coefficients by quantile units that create four legend categories with an equal number of census tracts. The darker tracts reveal that the areas with greatest racial/ethnicity diversity present near the major metro areas of St. Louis and Kansas City, while the rural boot heel area shows the presence of diversity as well. The school district boundaries overlay the census tracts to demonstrate the extent of diversity that exists within districts. The variability in diversity within and across districts

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**FIGURE 7** Statistically significant clusters of high and low diversity census tracts in the St. Louis area.
appears in Figure 4 for the St. Louis area and Figure 5 for metro Kansas City in which racial/ethnicity composition transitions from high to low diversity.

Further examination of Figure 4 reveals that the urban environment of St. Louis City is highly segregated in the northern section but is much more diverse in the central section. The northern neighborhoods of the city are where the black residents are concentrated. The central and southern parts of the city used to be almost exclusively white. But an exodus of white residents from the southern and central neighborhoods to the suburbs over the past 40 years has introduced multiple ethnic and racial groups to these areas of the city, which created diversity where it previously did not exist. It is also important to note that a large area in the northeastern section of the St. Louis metro area shows greater diversity compared to the highly segregated island in north St. Louis City.

In order to determine where diversity is significantly present or lacking, local Moran's I was computed for each census tract, and statistically significant values are mapped in Figure 6. This spatial analysis shows significant high and low diversity clusters, along with nearby areas of contrasting diversity. On closer examination, the cluster in north St. Louis City prominent in Figure 7, signaling statistically significant segregation, appears as an area of low diversity surrounded by census tracts of higher diversity. However, this map also shows that the once-segregated southern part of St. Louis City has now moved
FIGURE 9 Statistically significant clusters of high and low “black isolation” census tracts. Greatest concentration of tracts with significant black isolation is mostly located in the metro areas of St. Louis and Kansas City. Low next to low (blue) isolation tracts in the rural regions of the state typically have very few black residents.

further south into the suburbs and remains dominated by white residents (also see Figure 12, which shows this to be a significant area of white isolation).

The map of the Kansas City metro region in Figure 5 shows a concentration of high diversity in the central-western census tracts that decreases as distance from the city’s downtown area becomes greater. In comparison to the St. Louis City urban core, there is no large highly segregated island of census tracts. In testing for significant clusters of low diversity in the Kansas City metro area, Figure 8 shows that there are only a few segregated small tracts among a large area of tracts with high diversity. As distance increases away from the urban core toward the suburbs, there are significant clusters of low diversity tracts. In contrast to the large metropolitan areas of St. Louis and Kansas City, much of the rest of the state’s rural census tracts have very low diversity among a predominantly white population. Significant clusters of low diversity tracts with primarily white residents can be seen in Figure 6 along with large regions of low diversity tracts that are not significantly different from each other. Although the boot heel region appears to show higher diversity in Figure 3, only two small clusters of high diversity appear as statistically significant in Figure 6.

Local Moran’s I analyses for the racial/ethnicity isolation dimension are mapped in Figures 9–11 for black isolation, white isolation (Figure 12), and other isolation (Figure 13). High isolation values indicate census tracts with segregated target group members in relation to other residents. Isolation of target group members implies that they are separated from each other as individuals or groups among the majority of other residents (see Figure 1.) The local spatial computational approach used in this study demonstrates how segregation can occur in large clusters of target group members
and in smaller, more isolated clusters. A close-up view of black isolation in the St. Louis metro area (Figure 10) indicates that many of the eastern census tracts within and north of the city form a large cluster of black segregation. In addition, a number of separate individual tracts show significant black isolation in a geographic space that transitions to large regions of low black residency. Around the Kansas City metro area, a similar pattern of black isolation in large and small tract clusters is seen transitioning again to regions of low black residency (Figure 11).

Except for one area south of the St. Louis region, there are very few clusters of white census tracts that are significantly isolated from other white residents (Figure 12). This lack of isolation is due to the high percentage of white residents in most census tracts across the state. The remainder of “other” residents who were not black or white showed significant isolation in some census tracts in the northern part of the state, the boot heel region, and the Kansas City metro area. Census tract clusters designated for other as “low isolation” typically have very few residents of other racial groups.
Looking to the future

In contrast to overall global indicators of segregation, the present study focuses on the diversity and isolation dimensions of segregation at the local level to determine how these processes operate in communities across the state of Missouri. The St. Louis and Kansas City metropolitan regions display distinct patterns with respect to diversity and isolation. Both offer strong levels of racial/ethnicity diversity in the state. Moreover, school districts within these metro areas demonstrate varying degrees of diversity. Isolation existed with white populations clustered and separated from minority members.

Any policy consideration that ignores the growing suburbanization of metro communities and the accompanying racial isolation risks failure. If policy is approached through Bell's (1976) call for more quality schools, then more quality and walkable neighborhoods with affordable housing are needed, too. However, these types of neighborhood amenities (strong schools, walkability, and affordable housing) are in low supply and are not often found together. Koschinsky and Talen (2015), in their study of metropolitan statistical areas (MSA) across the nation, found that the most accessible areas correlated “positively, strongly, and significantly” with housing market strength and negatively correlated with HUD-assisted...
housing, low income, foreclosure risk, and distance to schools (with stronger correlations with the presence of the top schools) (p. 31). In addition, these areas associated positively with percent white (strongly) and percent Asian-American (weakly) but associated negatively with percent black (strongly) and percent Hispanic residents (weakly). In contrast, across all MSAs studied, HUD-assisted housing associated positively with car-dependent and not very accessible areas, high percentages of low-income residents, and increasing foreclosure risk. Negative associations include high accessibility, housing market strength, and shorter distances to quality schools. More specifically, the HUD-assisted housing correlated with closer distances to the worst schools. This research and our findings point to the need to create residential housing options in accessible suburban and urban neighborhoods in metro St. Louis and Kansas City. This represents a challenge given the scarcity of accessible communities and the difficulty families of every income strata face in securing it.

Koschinsky and Talen (2015) argued that expanding the supply of accessible neighborhoods requires reform of zoning codes and land use regulations in support of greater land use diversity. Zoning regulations should accommodate walking between different types of land uses (e.g., multifamily and mixed use, flexible, and commercial) as opposed to isolating single-family uses from others. We add that this strategy must include prioritizing the accessibility and success of neighborhood schools.

Lessons learned from the Kansas City and St. Louis metropolitan desegregation orders offer insight into another potential future reform. The St. Louis interdistrict desegregation effort generated many positive outcomes for students using the transfer option and the magnet schools. There is an economic case that can be made for reestablishing a robust VICC-like model in St. Louis and creating an interdistrict transfer mechanism in Kansas City. Communities where students fail to thrive undoubtedly...
risk the health of their future economy. A poorly educated workforce does not bring in new business or attract revenue to the community. Unfortunately, in both the Kansas City and St. Louis regions, dropout rates remain high, and disproportionately so among black students. According to Missouri Comprehensive Data System (MODESE, 2017), the Grade 9–12 black dropout rate in St. Louis City schools ranged between 9.4% and 17% in the 2012–16 academic years. On the same metric and during the same time period, black youth in Kansas City schools dropped out between 6% and 11% of the time. These percentages equate to thousands of black student dropouts. Estimates suggest that if 1,000 more black students graduate per year, these graduates would earn $13 million more in annual income, increase spending on homes by $23 million, increase gross regional product by $17 million, and add $3.4 million to federal, state, and local revenues annually through increased spending and investments (Alliance for Excellence in Education, 2013). These gains are scalable, too. For each additional group of 1,000 students that complete high school who would have otherwise dropped out, the economic benefits increase. A robust transfer program such as one previously offered could provide a way to achieve these outcomes. Evidence from past policy implementation suggests that interdistrict transfer offers both St. Louis and Kansas City an opportunity to benefit in terms of increased education attainment rates and local revenue to individuals and municipalities.

Derrick Bell (1976) critiqued the NAACP’s “integration at all costs” litigation strategy. Current demographic conditions in St. Louis and Kansas City suggest that the interdistrict transfer policy, originally brought about in response to desegregation litigation in the St. Louis region, offers an opportunity for both metro regions to improve education. In addition, Bell’s call for a quality education extended
to include accessible neighborhoods represents a second possibility for reform. If implemented in a synchronistic fashion, these reforms could provide mutually reinforcing opportunities for improved education attainment and economic prosperity.

**Author Bios**

**William F. Tate** is the Edward Mallinckrodt Distinguished University Professor in Arts & Sciences at Washington University in St. Louis. In addition, he serves as the dean of the graduate school and vice provost for graduate education. He is an urbanist and social scientist interested in the application of epidemiological and geospatial models to explain the social determinants of education attainment, health, and related developmental outcomes. He is a past president and fellow of the American Educational Research Association. Tate is a member of the National Academy of Education.

**Mark C. Hogrebe** is an educational researcher in the department of education at Washington University in St. Louis. His interests include research and evaluation methodologies in applied settings, education in the social science and STEM fields, diversity issues, and using geographic information systems (GIS) to give geospatial perspective to education data. His research projects integrate data from different sources into GIS technologies that help researchers understand and communicate complex spatial relationships. He received his Ph.D. in educational psychology from the University of Georgia and has taught courses in applied statistics, research design, and GIS methodologies.

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