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# The Power of Place: How Housing Policy Can Boost Educational Opportunity

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# Foreword

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In 1995, a group of public housing residents in Baltimore City filed a federal class action lawsuit charging the Housing Authority of Baltimore City and the Department of Housing and Urban Development (HUD) with violating the Fair Housing Act of 1968. Isolated in public housing developments surrounded by violence, without access to quality schools and employment opportunities, these residents claimed housing officials violated the law by confining public housing to segregated, high-poverty communities. Judge Marvin J. Garbis found HUD liable for “its failure to adequately consider a regional approach to the desegregation of public housing,” and, in powerful language, stated that “Baltimore City should not be viewed as an island reservation for... all of the poor of a contiguous region.”

To remedy the historical legacy of isolation of public housing residents from opportunities, the parties to the lawsuit agreed to create the Baltimore Housing Mobility Program (BHMP). Administered by the non-profit Baltimore Regional Housing Partnership, BHMP provides vouchers to eligible Baltimore City public housing residents, provides counseling services, and facilitates their moves to racially and economically diverse, resource-rich neighborhoods in the surrounding counties. By moving out of concentrated poverty, these families — and their children — have a meaningful opportunity to break the intergenerational cycle of poverty that cripples our low-income citizens and our cities.

That opportunity has now been thoroughly documented. In spring 2015, Raj Chetty and his colleagues at Harvard published a study showing the long-term effects of Moving to Opportunity (MTO), a federal housing mobility program from the 1990s. They found that children whose families moved to low-poverty areas when they were under 13 had higher earnings, marriage rates, and college attendance in their 20s than those who were not given a voucher. These durable, long-term effects were found despite the fact that the vast majority of children whose families moved through the MTO program continued to attend high-poverty schools in large urban school districts even after moving.

The results you will read in these pages suggest even greater promise. In contrast to the children who moved with MTO, most children whose families moved with the assistance of the BHMP have had the opportunity to attend high-performing, low-poverty schools in suburban school districts. Children who move with the program at younger ages demonstrate statistically significant improvements in math and reading scores — gaining 6 and 10 percentile points respectively by middle school. It is important to underscore that these academic improvements are not due to any *academic* intervention but to a purely *housing* intervention. As those academic benefits accrue — alongside the health benefits documented in other studies — the longer-term outcomes will likely be even more impressive than what Chetty and his colleagues found with MTO.

The Abell Foundation has long supported a wide range of strategies to address the complex and interrelated challenges of poverty in Baltimore City. Working with partners in government and the community, Abell has funded efforts to improve Baltimore City Public Schools, increase access to good jobs in the city, and develop healthy housing and communities. These commitments to our city are unwavering. At the same time, the Foundation is committed to ensuring that the residents of Baltimore City are not confined to neighborhoods still steeped in concentrated poverty and that they receive full access to meaningful opportunities under the law.

The Abell Foundation is proud to support the Baltimore Housing Mobility Program and the work of Johns Hopkins University sociologist Stefanie DeLuca.

# Executive Summary

For decades, Baltimore's poorest African American children have been channeled into racially and economically segregated neighborhoods with low-performing schools. Financial constraints and scarce affordable housing in more affluent communities have made it very difficult for poor families to access higher quality educational opportunities for their children.<sup>1</sup> With such durable neighborhood and school inequality, interrupting the cycle of intergenerational disadvantage is a difficult challenge. But housing policy may help families overcome barriers to residential mobility and move to lower poverty, more racially integrated neighborhoods with higher performing schools. In this report, we describe early findings from a housing voucher program in Baltimore — the Baltimore Housing Mobility Program (BHMP) — that has helped over 3,000 low-income African American families escape disadvantaged neighborhoods and move into opportunity rich communities and school districts throughout the metropolitan region. We find that after moving with the program, children attended significantly higher performing schools and made gains in their academic achievement.

## The Baltimore Housing Mobility Program

The Baltimore Housing Mobility Program is a housing voucher intervention established in 2003 as part of the legal remedy from the *Thompson et al v. HUD* fair housing court case. The BHMP vouchers serve as desegregative housing opportunities, replacing high-rise family public housing originally built on a segregated basis and maintained for a virtually all-black occupancy until demolished in the mid to late 1990s. The program was created to provide eligible low-income families with a housing subsidy and counseling support that assists them with residential moves to lower poverty and more racially integrated neighborhoods across the Baltimore metropolitan area. This report details findings for the earliest

implementation of the BHMP, examining a total of 1,423 families with school-aged children who participated in the program from its beginning in 2003 through 2012. After 2012, a second phase of the program was launched through a final settlement of the case, which will expand the program by about 400 vouchers per year through 2018.

## Neighborhood and School Change

The BHMP helped families relocate to radically different neighborhoods, with much lower poverty rates and lower levels of racial segregation. Before moving, families lived in neighborhoods that were, on average, 32 percent poor and just over 78 percent African American. After moving with the program, families lived in neighborhoods with a mean poverty rate of just 8 percent and 22 percent African American residents. These neighborhood changes were durable — seven years after receiving their voucher most BHMP families continued to live in lower poverty and more racially integrated neighborhoods compared to where they lived before moving with the program. These residential moves were also accompanied by significant improvements in children's school contexts. The vast majority of students were attending schools in the Baltimore City school district prior to moving with the BHMP. After receiving their voucher and moving to new neighborhoods, nearly three-quarters of the BHMP students were enrolled in suburban county school districts. Prior to relocation, BHMP students were attending schools that were 89 percent African American on average, even more racially segregated than their neighborhoods. After they moved, they attended more racially diverse schools, with 51 percent African American peers.<sup>2</sup> Similarly, the percentage of their school peers eligible for free or reduced lunch dropped from 78 percent

to 48 percent after the move. Students also attended schools with a higher percentage of classmates, on average, testing proficient or advanced on the Maryland School Assessment. Before the move students attended schools with just 51 percent of their classmates scoring at least proficient, but this jumped to 74 percent after moving with the BHMP.

### **Changes in Academic Performance**

Our findings show that within five years of voucher receipt students participating in this housing program — which does not incorporate any direct educational intervention — began performing better on standardized tests than they would have in the absence of the program. Without any explicit educational resources as part of the program, the BHMP showed dividends in students' learning. Students faced an initial period of adjustment as they gained their footing in their new neighborhood and in the academic and social context of their new school. This is reflected in a dip in students' math scores in the first year after moving with the BHMP. However, their scores almost completely rebounded by their second year in the program, and students showed steady learning gains over time as they remained in the program. Within five years students showed statistically significant improvement in their test scores.

### **Implications and Future Research**

Although the Baltimore Housing Mobility Program is unique to the Baltimore metropolitan area, the Housing Choice Voucher program serves over 2 million households across the United States. The findings from the BHMP demonstrate that housing voucher programs can successfully assist families with moves into low-poverty and more racially diverse neighborhoods with higher performing schools, and indicate

that this type of residential mobility can boost children's academic performance.

Implementing programs similar to the BHMP will require the removal of administrative barriers that limit families' access to low-poverty neighborhoods and high-quality school districts, such as restrictive rent payment standards. Additionally, voucher programs need to invest in housing counseling throughout program participation as well as outreach for landlords in low-poverty neighborhoods.

With respect to existing mobility programs, one avenue for further policy improvement is education counseling and supportive strategies for parents to help their children transition to new schools. These should include briefings to provide parents with information about educational resources and programs available at their children's schools.

Overall, the BHMP provides an example of how housing voucher policies can be implemented to provide families with access to lower poverty neighborhoods with higher performing schools. Through these types of residential moves, not only are children spending time in safer and more racially and economically integrated neighborhoods, but access to higher performing and more diverse school contexts leads to improvements in children's test score performance.

Although this report can only shed light on a single measure of student academic success — their test scores — the improvement we observe likely reflects additional positive gains in other academic, social, and non-cognitive domains which support school achievement, and may also yield long-term educational and social benefits.

# The Power of Place: How Housing Policy Can Boost Educational Opportunity

## Introduction

After declining in the 1990s, concentrated neighborhood poverty in the United States increased in the 2000s, accelerating during the Great Recession.<sup>3</sup> This increase in concentrated disadvantage has serious implications for child and family well-being — decades of research have shown that growing up in these neighborhoods is harmful for children, who must not only attend low performing schools, but also withstand the stress of living close to violence and disorder.<sup>4</sup> These factors hamper poor children’s educational achievement, limiting their future prospects and perpetuating intergenerational poverty.

Baltimore City provides a particularly stark example of these national trends, recently cited as the toughest place for young children to escape poverty.<sup>5</sup> Decades of discriminatory housing policy, disinvestment and population loss have created pockets of concentrated poverty and racial segregation in Baltimore City. Many of the city’s families and children struggle to thrive in the face of crime, poor housing quality and financial hardship. However, this neighborhood disadvantage is matched, if not exceeded, by the city’s school disadvantage. Many children in Baltimore experience schools with limited resources, hypersegregation, and high rates of student poverty; these academic environments make it difficult for even the brightest and most motivated students to reach their academic potential.

Unfortunately, for many low-income families it is nearly impossible to move out of high-poverty and racially segregated neighborhoods and schools. As sociologist Patrick Sharkey notes, for generations, poor black families have been “stuck in place.”<sup>6</sup> These conditions are common for black families but less so for poor white families, few of whom live in high-

poverty neighborhoods.<sup>7</sup> With such durable neighborhood inequality, it is difficult to imagine how we might interrupt the cycle of intergenerational disadvantage. But what if we gave families who wish to do so a chance to escape poor neighborhoods and send their children to higher performing schools? This report examines a program designed to do just that, by helping low-income African American families overcome the barriers to residential mobility and move to lower poverty, more racially integrated neighborhoods through the Baltimore Housing Mobility Program (BHMP). We find that families participating in the BHMP make durable moves to high-opportunity neighborhoods, and their children experience dramatic improvements in the quality of their schools. Not only do children experience vastly improved neighborhoods and schools, we also estimate that these changes improved their academic achievement. Our findings suggest that housing mobility programs like the BHMP can be used to break the cycle of childhood disadvantage in Baltimore City and in similar places across the country.

## Residential Segregation and School Access

After the 1970s, cities across the country — including Baltimore — saw patterns of school racial segregation shift from within-district to between-district boundaries, as many urban areas became predominantly minority, while suburban districts remained predominantly white.<sup>8</sup> These residential patterns leave minority students isolated from white peers in school, and often in much lower performing schools with higher concentrations of poverty and fewer resources. The Baltimore City Public School district, where most of the BHMP families were living when they signed up for the program, is hypersegregated — over 80

## Unfortunately, for many low-income families it is nearly impossible to move out of high-poverty and racially segregated neighborhoods and schools.

percent of public school students are African American. By contrast, in the suburban counties surrounding Baltimore City, there is increasing racial diversity — especially in Howard and Baltimore counties, and overall less than 30 percent of students are African American. The schools in suburban counties also serve families with a greater range of incomes and have fewer poor families. Fewer than 50 percent of students in the suburban counties are eligible for free or reduced lunch, and in some counties it is less than a quarter of their students, compared to more than 80 percent in Baltimore City schools.<sup>9</sup> However, unlike middle-class families, who often explicitly link their residential and school choices by moving to the suburbs when their children enter school,<sup>10</sup> low-income families face constraints that make such strategic moves difficult.<sup>11</sup> Although low-income students move frequently because of significant housing instability, this mobility rarely leads to improvements in school or neighborhood quality. Residential mobility programs can create opportunities to break these patterns, providing low-income, minority families with a chance to move to less poor and more racially integrated neighborhoods with more integrated and higher quality schools.

### Residential Mobility Programs

When moving, poor families struggle with inadequate transportation, little information about low-poverty neighborhoods and schools, landlord discrimination, and childcare needs.<sup>12</sup> In the face of these obstacles, low-income families often churn between similar high-poverty and racially segregated

neighborhoods with low performing schools.<sup>13</sup> Even when households receive a housing subsidy through the federal Housing Choice Voucher (HCV) program, it can be difficult to enter high opportunity neighborhoods.<sup>14</sup> The HCV program provides families with a subsidy to rent a unit in the private market, but little in the way of support for families looking to improve their neighborhood quality. Making matters worse, the value of the voucher subsidy frequently falls below prevailing rental costs in higher income neighborhoods, voucher use is limited to a single jurisdiction,<sup>15</sup> and vouchers must be used in a relatively short amount of time.<sup>16</sup> These structural barriers constrain neighborhood choices for voucher holders, whose neighborhood attainment is similar to that of unassisted renters.<sup>17</sup> In contrast to the traditional HCV program, housing mobility interventions reduce barriers to neighborhood mobility through increased rent ceilings, the inclusion of intensive housing counseling, and the breakdown of jurisdictional barriers — allowing families to relocate to neighborhoods across a metropolitan area.

One of the first residential mobility programs was developed in the 1970s in Chicago. Known as the Gautreaux Project, this intervention came about as the result of a desegregation lawsuit won by Chicago's public housing tenants against the Chicago Housing Authority and the U.S. Department of Housing and Urban Development (HUD). Between 1976 and 1990, over 7,000 African American families left public housing and relocated to low-poverty, less segregated neighborhoods across the metropolitan area. Children who moved with the Gautreaux Project to the suburbs of

Moving with the [Moving to Opportunity] program had a significant effect on college attendance rates and increased adult earnings for participants who moved as young children by as much as 30 percent (an estimated \$300,000 over the course of their lifetimes).

Chicago showed significant improvement in the quality of the schools they attended, and were more likely to graduate high school, enroll in college preparatory courses, and attend college when compared to similar students whose families remained in the city of Chicago.<sup>18</sup> Parents also described stark differences between the suburban and urban schools, with suburban schools having higher standards and expectations for their children.<sup>19</sup>

Two decades later, the Moving to Opportunity (MTO) demonstration was implemented to test these findings with a rigorous experimental design in five cities (Chicago, Los Angeles, Boston, New York, and Baltimore). In this experiment, families were randomly assigned to three groups, some to a group receiving housing vouchers to move to low-poverty neighborhoods, some to a group with a conventional voucher, and others to a control group who did not receive a voucher. Evaluation research showed that four to seven years after moving with the housing voucher, there were no significant differences in students' academic performance across the three groups.<sup>20</sup> However, separate estimates for students in Baltimore and Chicago, the MTO sites where families experienced the greatest baseline levels of neighborhood disadvantage, did show improvements in reading, which researchers hypothesize is explained by substantial reductions in the children's exposure to violent crime.<sup>21</sup> More recent work evaluating the long-term impact of the MTO intervention has found that moving with the program had a significant effect on college attendance rates and increased adult earnings for participants who moved as young children

(under the age of 13) by as much as 30 percent (an estimated \$300,000 over the course of their lifetimes).<sup>22</sup>

In this report we examine a more recent mobility program, the Baltimore Housing Mobility Program. The BHMP arose as part of a remedy to a class action desegregation lawsuit. In 1995, public housing residents sued the Department of Housing and Urban Development (HUD) and the Housing Authority of Baltimore City (HABC) for failure to desegregate Baltimore's public housing and to provide affordable housing in integrated, non-poor neighborhoods across the metropolitan region (*Thompson et al v. HUD et al, #95-309-D. MD*). The court ruled that HUD (but not HABC) was liable for violating fair housing laws, due to a long history of discrimination in the siting of public housing in Baltimore that confined low-income African Americans to the inner city. Judge Marvin J. Garbis stated that HUD had treated Baltimore City as "an island reservation...for all of the poor" in the metropolitan area.<sup>23</sup> The partial consent decree called for demolition and redevelopment of Baltimore's high rise public housing sites, development of scattered site housing in a range of neighborhoods across Baltimore City and the region, and the provision of 1,988 housing vouchers, which would provide rental assistance to individuals who had lived in or been on the waiting list for subsidized housing in the city prior to 2002. This report focuses on families that moved with BHMP housing vouchers included in the partial consent decree, from the 2003-04 through 2011-12 school years.<sup>24</sup>

## As of 2015, over 3,000 families have relocated with the Baltimore Housing Mobility Program. Most of these families moved ... into higher income and less racially segregated neighborhoods of the five surrounding suburban counties.

### Program Design and Counseling

The Baltimore Housing Mobility Program was designed to assist families with residential moves to racially and economically integrated communities. To this end, the BHMP is regionally administered, allowing families to use their voucher in any of the six jurisdictions of central Maryland, including Baltimore City, Baltimore County, Carroll County, Howard County, Harford County, and Anne Arundel County. Like the Housing Choice Voucher program, the BHMP voucher subsidizes the difference between 30 percent of the household income and a reasonable rent established for the unit. However, to facilitate residential moves to lower poverty neighborhoods, the BHMP also utilizes a higher rent payment standard in neighborhoods with higher market rents. This enables families to access rental housing in higher quality, higher cost neighborhoods. To participate in the BHMP, families must be part of the eligible legal class identified in the *Thompson et al v. HUD* court decree. During our analysis period, eligible families included: former or current public housing residents; those on the waiting list for public housing or Section 8/HCV assistance as of August 2002; or households displaced by the demolition of family public housing projects.<sup>25</sup>

As of 2015, over 3,000 families have relocated with the BHMP. Most of these families moved out of Baltimore City, into higher income and less racially segregated neighborhoods of the five surrounding suburban counties. For the families in our study period (2003-2012), the BHMP required that families use their

voucher to lease a unit for at least one year in a “high-opportunity” census tract – defined as a tract where no more than 10 percent of households are below the poverty line, where no more than 30 percent of residents are African American, and where less than five percent of housing units are public housing.<sup>26</sup> After the term of their first year lease, voucher recipients were allowed to renew their lease or move anywhere in the metropolitan area with their voucher.<sup>27</sup>

Families participated in an initial program briefing and were matched with a counselor. Counselors assisted families by creating an Individual Family Plan, to help each household fulfill the necessary steps to receive a voucher. Just like families in the standard HCV program, all potential BHMP voucher recipients were required to pass a criminal background check and be in good standing with the housing authority, with no outstanding housing authority debts. Families also saved for a portion of the security deposit (the remainder provided by the Abell Foundation), and prepared financially to cover their portion of the rent and utilities. Through the counseling process, staff worked with families to develop a plan for reducing debt and improving their credit score to ensure they could pass landlord credit checks. They also held workshops that provided coaching on financial literacy and budgeting, communicating with landlords, and maintaining their housing units. The BHMP also conducts landlord outreach in eligible census tracts, and provides families with information about available units in opportunity areas. At various times, the BHMP offers families bus tours of eligible

**Table 1: Descriptive Statistics for BHMP Mover Households**

Child Characteristics, Mover Families		
Female (%)		50
African American (%)		100
Household Characteristics, Mover Families		
Female household head (%)		99
African American household head (%)		99
Median head of household age at first move (years)		29
Total children in household (mean)		1.90
Total adults in household (mean)		1.15
<i>Total families with school-aged children (the analytic sample)</i>	<i>movers</i>	1,423
	<i>potential movers</i>	5,420
<i>Total children in analytic sample</i>	<i>movers</i>	3,153
	<i>potential movers</i>	10,849

The analytic sample represents all families with school-aged children in our data. It excludes families without children and a small percentage of children (6 percent) whom we could not match to administrative records. Potential movers are families who had signed up for the program, but had not received a voucher at the time of final data collection. *Sources: BHMP Participant Database*

**Table 2: BHMP Poverty Rates and Neighborhood Racial Composition**

	Poverty Mean rate	African American Mean %
<b>Pre-BHMP</b>	32.06	78.68
<b>Number of years post move</b>		
One	8.41	22.33
Two	9.63	28.08
Three	10.89	33.99
Four	11.71	37.59
Five	12.69	41.54
Six	13.52	44.99
Seven	14.34	49.44

Based on analytic sample (full n=1,423 excluding 154 households who made initial city moves and 144 families who faced a forced second move). Because families entered the program in different years, far fewer families are represented in estimates multiple years after relocation; this is not indicative of program exits, which are low for the BHMP. Neighborhood characteristics are measured at the census tract level. *Source: BHMP Participant Database, American Community Survey, Decennial Census*

neighborhoods to show them available units and provide a sense of the environment, housing, shopping, and amenities in these communities. Families are supported throughout their participation in the program, with briefings and counseling assistance for any subsequent moves. This continued support helps families remain in opportunity areas.

### **Participating Families and Neighborhood Change**

As of 2012, a total of 2,055 families, 1,423 with school-aged children, had moved with a Baltimore Housing Mobility Program voucher. As shown in Table 1, these early BHMP participants were predominantly African American, female-headed households with two children per household on average.

Our findings show that the BHMP succeeded in helping most of these families overcome residential barriers and attain lasting improvements in their neighborhoods. As shown in Table 2, the program dramatically improved neighborhood quality and reduced exposure to residential racial segregation. Prior to receiving a voucher, recipients lived in census tracts with a mean poverty rate of 32 percent, and where just over 78 percent of the residents were African American. After the move, these numbers were strikingly different: families who moved to the suburbs were living in neighborhoods where only 8 percent of their neighbors were poor and only 22 percent were African American, on average.

Importantly, families remained in low-poverty and racially integrated neighborhoods over time. Seven years after receiving their voucher, on average, families who initially moved to the suburbs were still living in neighborhoods with less than half the poverty rate of their baseline neighborhood. The percentage of African American families in their neighborhoods increased over time, but most BHMP movers never came close to living in the same kinds of hyper-segregated neighborhoods where they once resided (Table 2). Compared to MTO, which also provided mobility vouchers for

families in Baltimore but did not include the same degree of counseling support, assistance with subsequent moves, and other innovative policy features, the BHMP families have made larger and more durable gains in the quality of their neighborhoods.

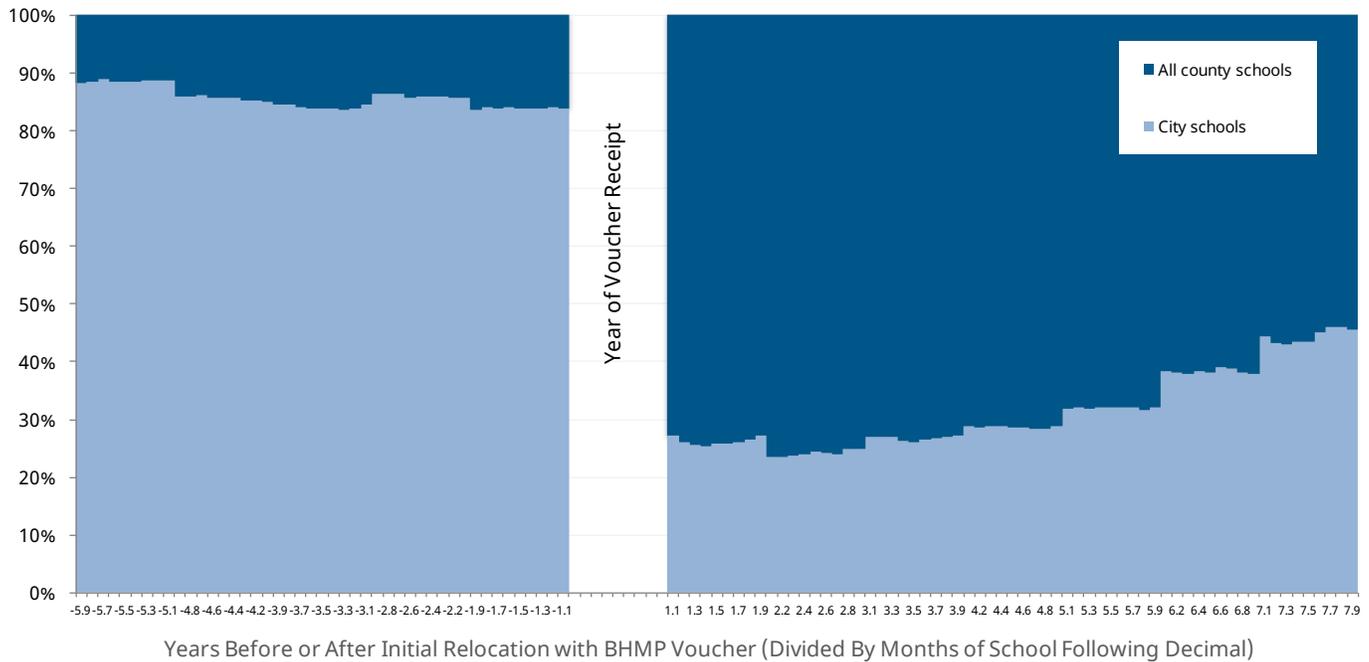
### **Enrolling in New Schools**

Before families received their BHMP vouchers, the vast majority (86 percent) of youth were attending schools in Baltimore City (Figure 1), but in the first full school year after moving, this figure dropped to just 27 percent as BHMP youth transferred to schools in five higher performing county districts in the metropolitan area. A full 73 percent of the BHMP students enrolled in suburban county schools in the first year after moving (Table 3). Suburban school enrollment continued to increase slightly in the second year after moving with the BHMP, with 76 percent of BHMP students enrolled in county schools.

For many families the decision to enroll their children in a county school is complicated by the timing of their residential move; approximately three quarters of BHMP families moved during the school year, forcing parents to decide between the disruption of a midyear school transfer and the benefits of sending their child to a higher quality suburban school. We find that during the school year families are less likely to change their children's schools. This is especially true for families who moved after the winter break, with fewer than half of students who moved this late in the school year transferring schools that year.<sup>28</sup> In recent years the BHMP has encouraged summer moves through a security deposit incentive,<sup>29</sup> a programmatic shift intended to directly address this issue.

The age of the students when their family moved with the BHMP also appears to be an important factor in explaining enrollment patterns. Among younger children, in elementary or middle school, the vast majority changed schools within two years of their family's move with the program. Among high

**Figure 1: City/County School Enrollment for BHMP Students**



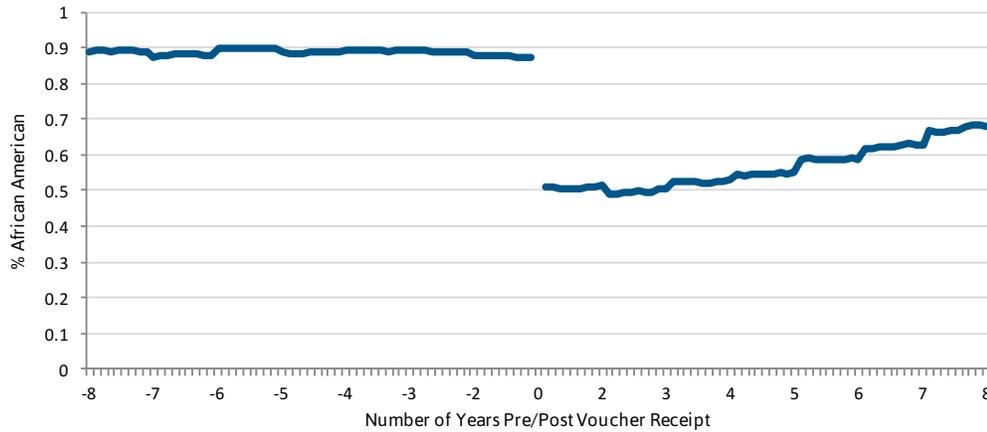
Based on analytic sample (full n=3,153 children excluding households who made initial city moves and those forced to relocate due to a management company's decision to no longer accept vouchers). *Source: BHMP Participant Database, MSDE Student Data*

**Table 3: BHMP Children's School Enrollment**

	Percent in Suburban Schools
<b>Prior to BHMP voucher</b>	14
<b>Full school years, after BHMP Move</b>	
First	74
Second	76
Third	74
Fourth	71
Fifth	68
Sixth	62
Seventh	56

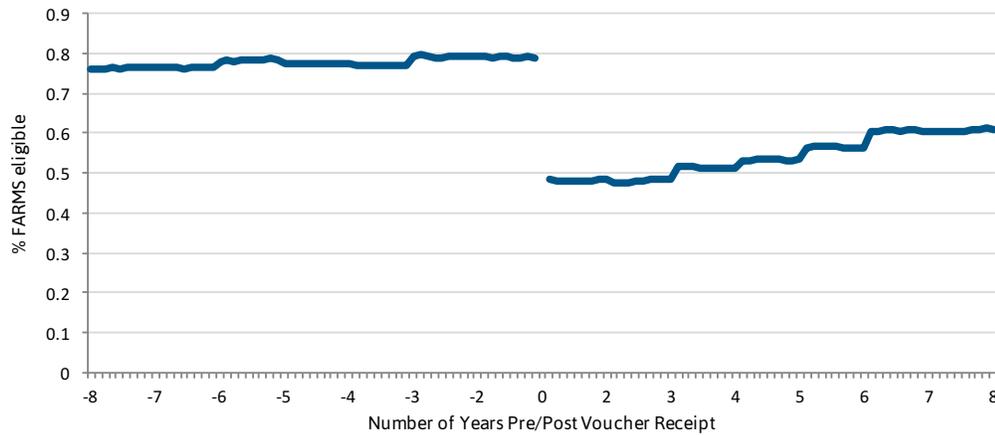
Based on analytic sample (full n=3,153 children excluding households who made initial city moves and those forced to relocate). School years post BHMP is calculated for each child, some of whom were not of school age when their parents relocated. Thus each year represents a non-nested subset of the overall analytic sample. *Source: BHMP Participant Database, MSDE Student Data*

**Figure 2: Percentage of African American Students in Schools Attended by BHMP Children by Years Pre/Post Voucher Receipt**



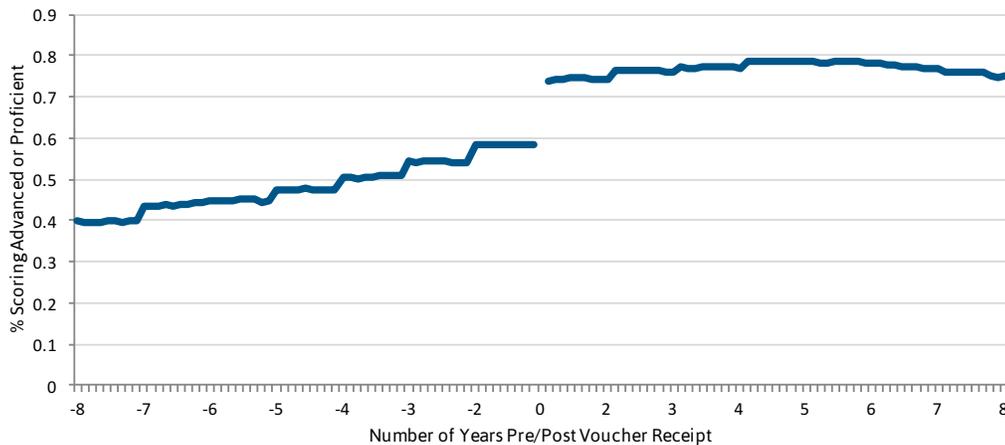
Based on analytic sample (full n=3,153 children excluding households who made initial city moves and those forced to relocate).  
 Source: BHMP Participant Database, MSDE Student Data, Common Core Data

**Figure 3: Percentage of Free & Reduced Lunch Eligible Students in Schools Attended by BHMP Children by Years Pre/Post Voucher Receipt**



Based on analytic sample (full n=3,153 children excluding households who made initial city moves and those forced to relocate).  
 Source: BHMP Participant Database, MSDE Student Data, Common Core Data

**Figure 4: Percentage of Students Scoring At Least Proficient on MSA's in Schools Attended by BHMP Children by Years Pre/Post Voucher Receipt**



Based on analytic sample (full n=3,153 children excluding households who made initial city moves and those forced to relocate). Source: BHMP Participant Database, MSDE Student Data, Common Core Data

**Table 4: School Racial and Achievement Changes, Relative to BHMP Move**

	% African American	% Free / reduced lunch	% Prof. or advanced score
Prior to BHMP voucher	89	78	51
<b>Full school years after BHMP</b>			
First	51	48	74
Second	50	48	76
Third	52	51	77
Fourth	55	53	79
Fifth	59	57	78
Sixth	63	61	77
Seventh	67	61	76

Based on analytic sample (full n=3,153 children excluding households who made initial city moves and those forced to relocate). School years post BHMP is calculated for each child, some of whom were not of school age when their parents relocated. Thus each year represents a non-nested subset of the overall analytic sample. Hyper-segregation defined as schools with more than 70 percent African American students. *Source: BHMP Participant Database, MSDE Student Data, Common Core Data*

school students the pattern is more complex. Entering freshmen were more likely to transfer to — and to graduate from — county schools than students in their sophomore year and after.<sup>30</sup> In fact, only about half of students whose families moved during their sophomore year, or the summer before junior year, transferred to county schools. It seems that families weigh the benefits and drawbacks of transferring schools during high school differently than they do for school transfers that happen in earlier grades.<sup>31</sup>

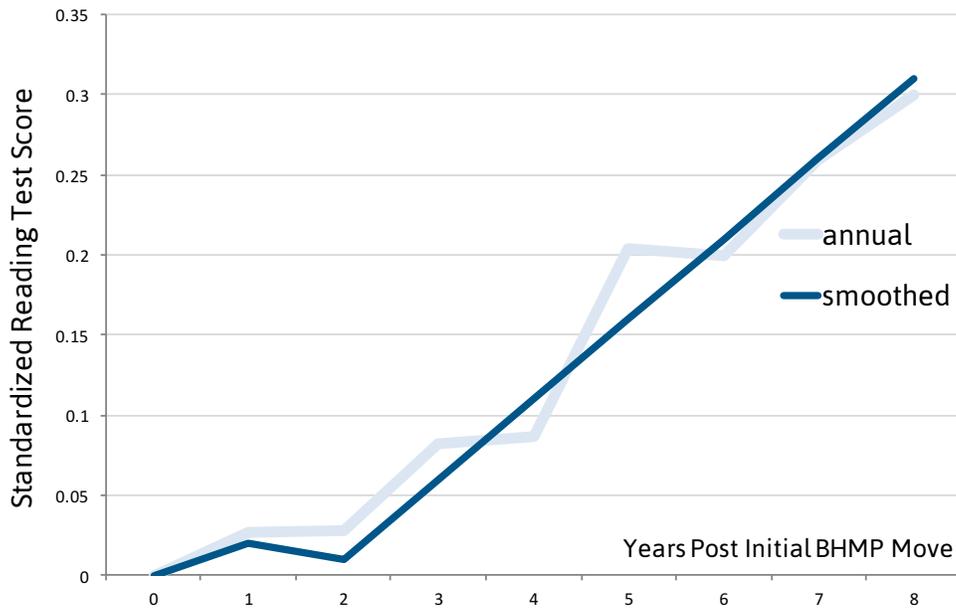
### Change in School Context

The BHMP brought about dramatic changes in the characteristics of students' schools. Before moving with the BHMP, students typically attended hyper-segregated and high-poverty schools in Baltimore City. On average these baseline schools were 89 percent African American, even more segregated than their neighborhoods. But after moving with the program to suburban districts this number dropped to 51 percent (Figure 2).<sup>32</sup> Similarly, students previously attended schools where 78 percent of their classmates were eligible for free and reduced lunch, on average, but this number dropped to 48 percent after moving with the BHMP (Figure 3).

Students moving with the BHMP were also exposed to higher performing peers in their new schools. After moving with the program, students attended schools where 74 percent of their classmates tested proficient on the Maryland School Assessment, from 51 percent before moving with the program (Figure 4). This increase persisted throughout students' school trajectories. Although some of this may be due to the continuing statewide test score improvements,<sup>33</sup> it suggests that students continued to attend higher quality schools.

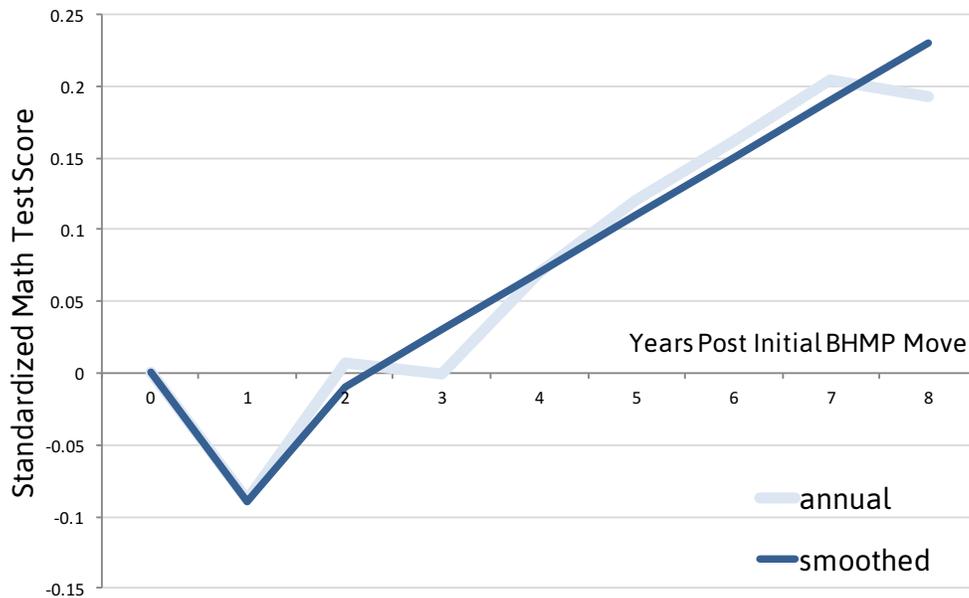
Over time BHMP families, like all renters, made residential moves and school changes to fit their families' needs — some families moved to new suburban neighborhoods and some returned to the city. Seven years after enrolling with the program, approximately 56 percent of the children still in school (not including those who had already graduated), were enrolled in county schools.<sup>34</sup> Through these subsequent changes, the percentage of African American and low-income classmates for BHMP students increased somewhat, but remained well below the level of racial and economic segregation students experienced in their schools prior to moving with the BHMP (Table 4). Importantly, cohort subsamples from our own analysis as well as data summaries provided by the BRHP

**Figure 5: Reading Test Scores (Fixed Effects Coefficients)**



Based on sample of mover and potential mover students with test score data, grades 3 to 8 (n= 10,091 children, 2,242 mover, 7,849 potential movers). Annual line represents year by year estimates. Smoothed line represents overall trend without annual fluctuations (which are presumed random). Source: BHMP Participant Database, MSDE Student Data, Common Core Data

**Figure 6: Math Test Scores (Fixed Effects Coefficients)**



Based on sample of mover and potential mover students with test score data, grades 3 to 8 (n= 10,091 children, 2,242 mover, 7,849 potential movers). Annual line represents year by year estimates. Smoothed line represents overall trend without annual fluctuations (which are presumed random). Source: BHMP Participant Database, MSDE Student Data, Common Core Data

team suggest that these numbers have improved over time. Families entering the program today are moving to lower poverty neighborhoods and staying there longer.

Descriptively, the story is clear: the BHMP made a profound difference in the quality of the schools these children attended. Before the program, BHMP students were enrolled in hyper-segregated, poor performing public schools in Baltimore City. Based on the pre-move trend lines (Figures 2-4), it seems that very few would have transferred to suburban county public schools in the absence of the intervention.

### Student Achievement in Higher Performing, Lower Poverty Schools

Research has shown that changing schools can be disruptive for students,<sup>35</sup> and low-income students, like those in the BHMP, change schools more frequently than more advantaged students. Moreover, these frequent changes are generally a symptom of housing instability rather than strategic relocation — making them all the more deleterious for child development.<sup>36</sup> In other words, switching schools is not a new process for many youth in the BHMP. The question is whether the particular type of residential move that the BHMP facilitates — to more diverse and higher performing schools — can provide benefits that outweigh the disruption in a child's schooling. Given the dramatic change in school context, how do students perform after moving with the BHMP?

To carefully assess the impact of the BHMP move on students' academic achievement, we cannot simply compare the scores of children who moved to those who did not, because there may be differences between the two groups that make them non-comparable. For example, the parents who participate and move with a program like the BHMP may be more engaged in their children's education than parents who do not, and characteristics like these are also likely to affect children's academic performance. The BHMP is not administered through random assignment;

thus we cannot rule out the factors that may have also contributed to the students' achievement trajectories over time. However, we can estimate the likely effect of the BHMP with another widely used statistical technique, a fixed effects model, which considers only the differences that happen for *particular students before and after they moved*.<sup>37</sup> Put simply, fixed effects models do not consider comparisons *between* students, rather they model yearly changes *within* each student's own school trajectory, comparing each student to his or her prior performance.

Figure 5 displays the estimated effects of the BHMP voucher on MSA math scores.<sup>38</sup> The horizontal axis represents the number of years since the family received a voucher. The vertical axis represents a student's score above or below his or her baseline score. If the line is above the horizontal axis, this means students were performing better that year than we estimate they would have in the absence of the BHMP voucher. If it is below the horizontal axis students were performing worse.

After receiving a voucher, students' reading scores largely remained unchanged for two years, showing neither statistically significant improvement nor decline. However, two years after receiving a voucher, students' reading scores increased by approximately .05 standard deviations per year. As shown in Figure 6, students' math scores dropped by approximately .09 standard deviations, a statistically significant dip in the first year after receiving a voucher. Scores almost completely rebounded, however, by the second year, and continued to improve at a rate of .04 standard deviations per year. Similar to reading scores, over time students' math scores showed improvement, reflecting benefits from moving with the BHMP. Approximately five years after voucher receipt, students showed a statistically significant increase in their test score performance, testing about .15 standard deviations better in reading and .12 standard deviations better in math than they would have

## Without any explicit educational resources as part of the program, the Baltimore Housing Mobility Program showed dividends in students' learning.

in the absence of the move. It is challenging to compare these effect sizes to those estimated in studies of other educational interventions because such studies measure the effects of different programs, in different populations, and on different outcomes. However, on average, direct educational interventions (e.g., those involving instruction or curriculum) have been shown to improve standardized test scores by .08 standard deviations for elementary school students and .15 standard deviations for middle school students.<sup>39</sup> In comparison with these effect sizes, we estimate that the BHMP generates small but steady effects on students' test scores over time; five years after voucher receipt this housing program shows significant effects that rival the impact of educational specific interventions.

In layman's terms, the effects of receiving a BHMP voucher are enough to increase a student's percentile score by four or five percentage points (at baseline the average BHMP student scored at approximately the 25th percentile in Maryland). Over time, the cumulative benefits of BHMP voucher continue to accrue. For students who moved at an early age, we estimate the effect of the BHMP voucher, illustrated in Figures 5 and 6, to be six percentage points in math and ten percentage points for reading by the end of middle school — both meaningful improvements in academic achievement.

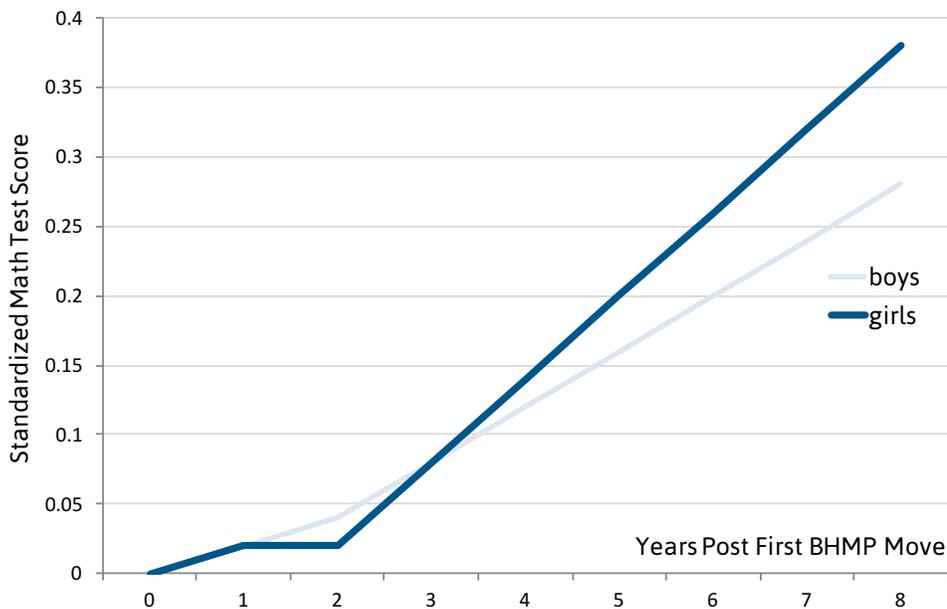
We find some differences between girls and boys. Across the sample, for both math and reading, the move was more beneficial to girls, although the difference was more pronounced in math. As shown in Figures 7 and 8, girls experienced less of a post-move dip in math

and their achievement improved at a faster rate in both subjects.

It is important to note that these estimates are conservative by design. To avoid the confounding influence of parental and child choices,<sup>40</sup> the estimates presented above include all school-age children in our sample of BHMP households, even those who did not change schools when their parents received a voucher. Thus the *treatment effect* being estimated is the effect of living in a household that moved with a voucher, not the effect of changing to a better school. Of course, as noted above, not all students changed schools when their parents relocated. Because students and their parents make strategic decisions about school transfers, focusing solely on students who changed schools runs the risk of introducing selection bias. However, from a descriptive standpoint, we can examine this subset of children.

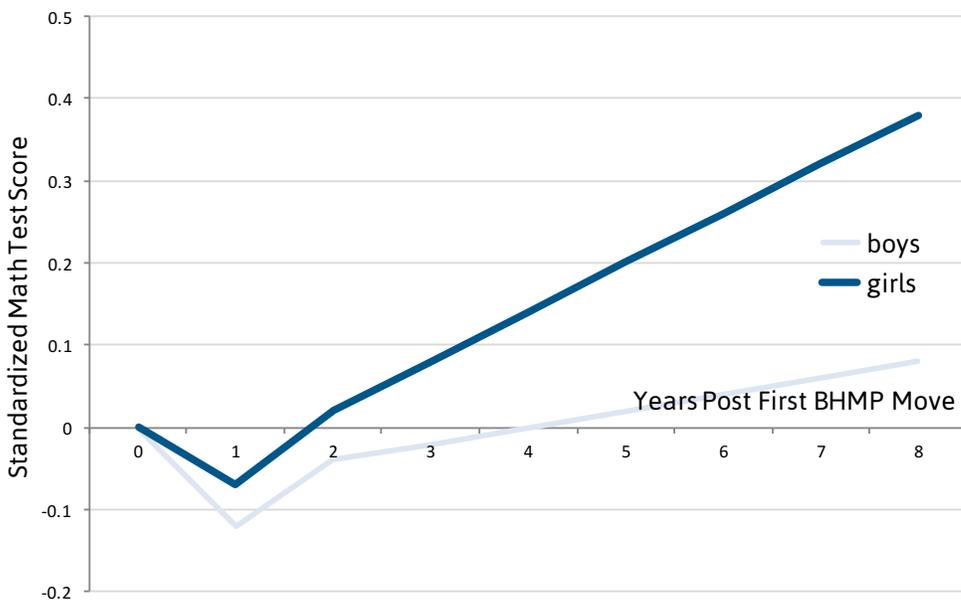
Not surprisingly, we find that students who transferred to county schools after moving with the BHMP benefited more in the long term than those who did not. In the first year after moving, students who remained in Baltimore City schools actually performed better than those who transferred to county schools, likely due to the fact that they did not experience a school disruption. However, students who stayed in Baltimore City schools did not show long-term academic gains, accruing few of the long-term benefits we observe for students who enrolled in the more diverse and higher performing academic environments. Because most children changed schools, the overall effects in the early years of the program are relatively similar when we isolate just children who moved from the

**Figure 7: Reading Test Scores, By Gender (Fixed Effects)**



Based on sample of mover and potential mover students with test score data, grades 3 to 8 (n= 10,091 children, 2,242 mover, 7,849 potential movers). *Source: BHMP Participant Database, MSDE Student Data*

**Figure 8: Math Test Scores, by Gender (Fixed Effects)**



Based on sample of mover and potential mover students with test score data, grades 3 to 8 (n= 10,091 children, 2,242 mover, 7,849 potential movers) *Source: BHMP Participant Database, MSDE Student Data*

## FUTURE RESEARCH

The findings in this report are just the tip of the iceberg. The Baltimore Housing Mobility Program and researchers from Johns Hopkins University have partnered to examine all aspects of this powerful intervention:

### Neighborhoods and School Transitions Study

We are currently analyzing 199 in-depth interviews with parents, and children between the ages of 9-18, that were conducted between 2012 and 2015. This study examines the experiences of these participant families (and a comparison group of those who did not participate) to understand how families adjust to different neighborhood and school contexts after moving. Our goal is to understand not just whether the program benefits poor families, but to explore how it does so. For example, what is it about the new school, neighborhood,

and social environments that lead to the positive test score changes identified in this report?

### Asthma and Health Study (Primary Investigators: Elizabeth Matsui and Craig Pollack)

Asthma continues to be a major public health problem among low-income minority children living in urban neighborhoods. This newly launched study at the School of Medicine will examine how improvements in housing and neighborhood quality that come as a result of the BHMP affect asthma outcomes among children ages 5-17 in participant families. This study has the potential to have significant implications for the role of housing policy as a tool to address asthma and child health outcomes.

overall sample, but diverge sharply from the small sample of children who remained in the suburban schools. We estimate that younger children whose parents received a BMHP voucher and who relocated to a suburban school would improve their MSA percentile ranking by eight percentage points in math and sixteen in reading by the end of their academic trajectory (eight years after voucher receipt). This can be compared to gains of just three percentage points for students who did not change schools.<sup>41</sup> In other words, attending a county school provides students with benefits that lead to improvements in their academic outcomes above and beyond how they would have performed in the absence of this school change.

### Policy Implications

Our analysis of the earliest years of the Baltimore Housing Mobility Program provides insights for the continuing implementation of the BHMP and for the design and implementation of the larger Housing Choice Voucher program, which serves over two million households each year. Several key

elements of the BHMP help provide families with access to higher quality neighborhoods and schools, and help them stay there in the long run. The Baltimore Regional Housing Partnership administers the program regionally, which allows families to use their voucher across six counties and school districts in the metropolitan area. The program also uses higher rent payment standards in more affluent neighborhoods that have more expensive rental housing and better schools, making these neighborhoods affordable for BHMP participants. Additionally, the program conducts significant landlord outreach, building relationships with landlords across the metropolitan region and informing them about the program, to build relationships that facilitate residential options in more affluent neighborhoods for program participants. For families, the BHMP incorporates extensive one-on-one counseling and group workshops that provide them with information about neighborhood and school options, resources to find available rental housing, interacting with landlords, and assistance with the process of renting a unit. Importantly, these services continue for two years after the initial move

## The improvements we observe in students' scores likely reflect additional improvements in other academic, social, and non-cognitive processes, which may support test score performance and may yield long-term educational and developmental benefits.

and then as needed with each subsequent move while in the program.

In addition to the program design elements of broader administrative boundaries and higher subsidy limits, the HCV program should expand the provision of information about school options available to voucher recipients. By helping parents understand the benefits of higher performing schools for their children, and providing information about neighborhoods where families can access these higher performing schools, HCV administrators can encourage families to examine their educational options and include school quality as a factor in their residential choices when moving with the voucher.<sup>42</sup> Outreach to landlords with properties in higher performing school districts and the inclusion of these properties on lists of available rental units provided to families in the HCV program would help facilitate moves to higher opportunity neighborhoods and schools.

We find that moving with the BHMP leads to improvement in children's academic achievement. However, these improvements do not appear immediately after moving — rather, students begin to improve after two years, and learning gains continue the longer they remain in high-quality schools. This finding implies that youth who move at an earlier age, even before they begin school, may experience the greatest impact because moving at a young age extends the number of years these students can attend higher quality schools. Our findings show that the program does still benefit older children, but the increasing benefits over time imply that more time in higher performing schools will yield greater benefits. The BHMP now encourages families with young children to participate in the program and works to help these families move

to opportunity neighborhoods with higher quality schools before their children even begin school. For older children who have begun school already, the BHMP encourages families to remain in low-poverty neighborhoods over time — we see the provision of post-placement and second move counseling as critical during these times. The incorporation of second move counseling into the HCV program may also help encourage families to remain in, or choose, neighborhoods with high-quality schools, which will only increase the potential for students' academic gains.

The longer families remain in low-poverty and racially integrated neighborhoods with higher performing schools, the greater the opportunity for children to benefit. Although students in the BHMP remain, on average, in higher performing schools than those they attended before moving, over time a few families move back to the city, leading to a decline in the quality of the schools children attend for those who have not yet graduated. This slow change over time indicates the need for sustained counseling services to help families remain in high-performing schools in low-poverty and racially diverse neighborhoods over time.

Finally, our findings indicate that counseling for parents should also include information about the process of transferring schools and advice about how to communicate with children's new schools after moving. Parents need to be aware that children will face an adjustment period, and have as much information as possible about how to support their child through this transition. These supports may mitigate some of the post-move disruption in children's learning.

## Conclusion

The BHMP assists families with residential moves to lower poverty and more racially diverse neighborhoods with higher performing schools. Above and beyond the dramatic changes in families' social context and children's schools, our analyses indicate that these changes also improved children's academic performance over time. In other words, without any explicit educational intervention as part of the program, the BHMP shows dividends in students' learning. Students whose families moved with a BHMP voucher experienced an initial expected disruption when they first changed schools but recovered quickly and showed significant improvement in the long term. It is important to note that the findings we present here on test scores are but one measure of the potential effect of the BHMP on children's learning. The improvements we observe in students' scores likely reflect additional improvements in other academic, social, and non-cognitive processes, which support test score performance and may yield long-term educational and developmental benefits. Recent findings from the MTO study show long-term gains in college attendance and earnings for children who moved to low-poverty neighborhoods.<sup>43</sup> Our findings suggest that over time BHMP youth might demonstrate gains equal to, if not greater than those observed in this recent MTO research, given that the improvements in neighborhoods and school quality children experience through the BHMP are significantly larger than those that occurred for MTO.

## ABOUT THE AUTHORS:

Stefanie DeLuca is an Associate Professor at the Johns Hopkins University. Her research uses sociological perspectives to inform education and housing policy, and she has written extensively on the long-term effects of programs to help public housing residents relocate to safer neighborhoods and better schools through housing vouchers. Anna Rhodes is a doctoral student in Sociology at Johns Hopkins, and her work explores the intersection of families' school and residential choices, with a focus on how these decisions affect children's educational opportunities and outcomes. Philip M.E. Garboden is a doctoral student in Sociology and Applied Math at Johns Hopkins University and focuses on the ways housing policies intersect with the decisions of private landlords, developers, and tenants to impact low-income communities.

## Appendix: Data

Data for this study comes from two administrative sources. First, data on each family's BHMP participation, residential history, household income and demographics comes from the program's administrative database.<sup>44</sup> Second, data on each child's school attendance and standardized achievement test scores on the Maryland State Assessment from 2003 to 2011 comes from the Maryland State Department of Education Student Database. These datasets were merged with the Decennial Census, the American Community Survey, and National Center for Education Statistics' Common Core of Data, all of which provided additional covariates related to school and neighborhood context before and after program participation.

The project was the first of its kind in Maryland to merge education data from MSDE with administrative data from a program such as the BHMP. We are extremely grateful for the assistance of the staff at MSDE, Baltimore Metropolitan Quadel, Baltimore Regional Housing Partnership, and the Baltimore Regional Housing Campaign, who took time out of doing their hard work to help our research team collect and understand the data.

## Endnotes

1 Strict enforcement of residency requirements in suburban school systems have also limited access to higher quality schools.

2 As will be explained in the paper, almost one-quarter of the students who moved neighborhoods with their families remained in City Schools.

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- 24 The final case settlement in November of 2012 included the provision of an additional 2,400 vouchers and additional funding to support mobility counseling for new and current voucher holders.
- 25 With the final settlement these criteria were broadened to include other families living in segregated neighborhood of Baltimore City with African American populations of 75 percent or higher.
- 26 In July 2015, the BHMP changed its opportunity definition to a composite designation based on the Maryland Department of Housing and Community Development (DHCD) Opportunity Index; the Opportunity Mapping Advisory Panel (OMAP) opportunity index; and supplemented by HUD Picture of Subsidized Households data, Maryland school performance data (MSA test scores), ACS data, and BHMP administrative data.
- 27 After the final settlement this requirement was changed to two years.
- 28 For example, of the students who moved with the BHMP in the month of February, 67 percent were still enrolled in City Schools at the end of the year.
- 29 The BHMP incentivizes families to move during the summer by reducing the amount the household must contribute toward the security deposit if they move during the summer.

30 Of course, some students may have simply dropped out rather than return to City Schools. In other words, we don't necessarily have records for students later in high school because some drop out, and those students might have been more likely to go back to the city, which would inflate the county numbers slightly.

31 Condliffe, Boyd and DeLuca (2015) find that low-income African American youth often pick their own high schools — with little to no input from parents — and weigh considerations of school location and friend networks heavily in these decisions.

Condliffe, Barbara F., Melody L. Boyd, and Stefanie DeLuca. 2003. "Stuck in School: How Social Context Shapes School Choice for Inner-City Students." *Teachers College Record* 117(3).

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33 The Maryland School Assessment (MSA) is a test of achievement for math and reading given in March of each year to grades 3-8 to fulfill the requirements of the federal No Child Left Behind Act.

34 It is important to remember when viewing these figures that not all students relocated with eight years of primary and secondary school remaining. Many graduated from high school during the seven-year time frame shown in Figure 1 and Table 3, and some started school, entering kindergarten or first grade several years after relocation.

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Work and transportation factors may also influence the decision — both of which are likely correlated with child outcomes to a certain extent.

41 Although we lack sufficient data to make a definite statement, all of the previous analysis suggests that the effect could be even higher for students who relocated to the suburban schools and then persisted in that context for many years.

42 For example, the Baltimore-based Zanvyl and Isabelle Krieger Fund supported the development of some initial training materials and resources for housing mobility counselors to help families better evaluate their educational choices. See [www.housingmobility.org](http://www.housingmobility.org).

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44 Metropolitan Baltimore Quadel, a contractor that operated the BHMP from 2002 through 2014, provided its administrative database to our research team in 2007 with additional data updates in 2010 and 2012. This dataset includes information on program participation for all families who have applied for, received, or moved with a BHMP voucher. It includes demographic data on each family, a housing roster (including date of birth and age of each child living in the home), the household's residential trajectory, and information on income and program eligibility.