

Middle and High School Magnets and Other Application Programs with Selective Admissions Criteria

Overview

Secondary magnet programs were originally developed in MCPS to serve the dual purpose of promoting diverse student enrollment and academic excellence in furtherance of Board Policy ACD, *Quality Integrated Education*. Over the years, as discussed in the historical context section, programs have been added and existing programs have been modified for other purposes including to stave off declining enrollment, provide theme-based instruction, offer programming for highly gifted secondary students, and meet community demand.

The programs addressed in this section are collectively referred to as ***secondary magnet and other application programs with selective admissions criteria***. As they currently operate, these programs also should be considered in the broader context of Board Policy IOA, *Gifted and Talented Education*, insofar as they are designed to address student interests and provide unique educational experiences for highly able students that are not offered through honors or Advanced Placement in home schools. Descriptions of the unique offerings in each program are provided in the following paragraphs.

Middle school programs:

The **Math, Science, and Computer Science** program at Takoma Park MS and the Upcounty Center Program for the Highly Gifted at Roberto Clemente MS provide opportunities for students to enroll in three magnet classes in math, science, and computer science that are taught using a student cohort model. The program follows a specialized curriculum developed by magnet teachers to engage students in accelerated and interdisciplinary instruction in mathematics, science and computer science. Students also participate in hands-on and project-based instruction and theme-based field trips.

The **Humanities** magnet program is offered at Eastern MS and the Upcounty Center Program for the Highly Gifted at Roberto Clemente MS. The program follows a specialized curriculum developed by magnet teachers to engage students in accelerated instruction in English and history and to offer a unique course in media production. For all other subject areas, magnet students enroll in classes with non-magnet students which follow the district's comprehensive curriculum. Magnet students also receive real-world learning experiences through field trips.

High school programs:

The **Mathematics, Science, and Computer Science** magnet program is offered at Montgomery Blair HS for students who reside in the southeastern region of the county and at Poolesville HS for students who reside in the northwestern region. The program offers advanced and unique coursework in each of the three targeted disciplines: mathematics, science, and computer science. In Grades 9 and 10, students receive block-period instruction in these subjects; they attend other required courses with non-magnet students. Most students complete all science and math requirements by the end of Grade 10 and are able to take unique electives during their junior and senior years. Magnet students have an extra elective period each day for in-depth study in a content area.

Poolesville HS also offers the **Global Ecology House** and **Humanities House** magnet programs. In **Global Ecology**, students participate in interdisciplinary coursework to integrate science and social sciences. The courses are designed to engage students in hands-on field work at least three days a week that provides opportunities for students to explore the human impact on the natural environment. In the **Humanities House**, students take an advanced curriculum that integrates the study of English, social studies, communications, and fine arts through interdisciplinary lessons. Students have opportunities to use state-of-the-art visual media, including media production. In addition, students participate in research, long-term project work, and independent studies.

Richard Montgomery HS offers the **International Baccalaureate (IB)** program. The program includes both the Middle Years Programme (MYP) for students in Grades 9 and 10 and the Diploma Programme (DP) for students in Grades 11 and 12. IB is a rigorous academic program that engages students in high-level coursework through an interdisciplinary approach. For the DP, students are required to take IB-level courses in six areas (English, World Languages, Individuals and Societies, Mathematics, Experimental Sciences, and the Arts) and the IB Theory of Knowledge course. All students are also required to complete all required IB assessments, and participate in a community action project. Upon completion of the program, students received an IB diploma that can be accepted by post-secondary institutions for credits toward graduation.¹³¹

The **Visual Arts Center (VAC) at Albert Einstein HS** offers a rigorous and comprehensive program in visual arts and exposes students to opportunities for arts-related careers. Elective coursework includes visual arts as well as art history. Over their high school career, students develop a portfolio of work that addresses various aspects of the arts. Students can attend the VAC for full-day programs or for half-day programs in which they attend their home high school for core subject classes and travel to the VAC for arts electives courses.

Three schools also offer application programs only open to students who attended a middle school that feeds into the DCC or are DCC residents. The programs include the **Communication Arts Program**

¹³¹ In addition, local IB programs are offered at seven high schools (Bethesda-Chevy Chase, Einstein, Kennedy, Rockville, Seneca Valley, Springbrook, and Watkins Mill HS), but these programs are available *only* to students who attend those schools.

(CAP) at Blair HS, the **Leadership Training Institute (LTI)** at Kennedy HS, and the **Bioscience and Engineering programs** at Wheaton HS.

The secondary magnet and other application programs with selective admissions criteria are designed to serve students based on the student’s home cluster. As shown in the maps in Appendix E, students who reside in nine upcounty high school clusters—Clarksburg, Damascus, Gaithersburg, Magruder, Northwest, Poolesville, Quince Orchard, Seneca Valley, and Watkins Mill—can apply to the magnet programs at Roberto Clemente MS and Poolesville MS. All other students from the remaining 16 high school clusters apply to the programs at Takoma Park MS, Eastern MS, and Blair HS; and students who reside in the DCC or attend DCC feeder schools can also apply to the application programs at Blair, Kennedy, and Wheaton HS. The Richard Montgomery IB program and the VAC are countywide programs.

Exhibit 20: Number of Seats and Geographic Areas Served by Secondary Magnet and Other Application Programs with Selective Admissions Criteria—2013–14

School	Program	Number of seats	Geographic area(s) served
Takoma Park MS	Math, Science, Computer Science (magnet)	100 /grade	Regional
Eastern MS	Humanities (magnet)	100 /grade	Regional
R. Clemente MS	Math, Science, Computer Science (magnet)	50 /grade	Regional
	Humanities (magnet)	50 /grade	
Middle School Total		300/grade	
Montgomery Blair HS	Math, Science, Computer Science (magnet)	100 /grade	Regional
	Communication Arts Program (CAP) (application)	75 /grade	DCC middle school feeders and DCC residents
Poolesville HS	Math, Science, Computer Science (magnet)	50 /grade	Regional
	Humanities (magnet)	50 /grade	
	Global Ecology (magnet)	50 /grade	
R. Montgomery HS	International Baccalaureate (IB) (magnet)	100 /grade	Countywide
A. Einstein HS	Visual Arts Center (VAC) (magnet)	25 /grade	Countywide
J.F. Kennedy HS	Leadership Training Institute (LTI) (application)	30 /grade	DCC middle school feeders and residents
Wheaton HS	Bioscience program (application)	25 /grade	DCC middle school feeders and residents
	Engineering program (application)	25 /grade	
High School Total		530/grade	

Admission to these secondary programs takes into account criteria similar to those used for the elementary center program for highly gifted students, with the exception that different assessments are used, and there are required writing samples. Applicants to the VAC are also required to submit a portfolio of work that comprises 2-3 observational drawings and 5-7 completed artworks in any media. Additionally, applicants to the LTI at Kennedy are required to complete a self-evaluation and essay describing community and civic participation. Students apply for middle school magnet programs with selective admissions criteria in Grade 5 and for high school magnet and other application programs with selective admissions criteria in Grade 8. Transportation is provided to most programs for students who attend middle and high school magnets and other application programs with admission criteria through the use of centralized stops. Transportation is not provided for the VAC.

MCPS uses a variety of strategies to inform parents about available programs. Materials are provided in English, Amharic, Chinese, French, Korean, Spanish, and Vietnamese. All families of students in Grade 5 and of students who are enrolled in Algebra I or higher in Grade 8 are mailed information about the programs and how to access the application and informational meetings. Information is also provided in PTA and school newsletters, Connect-Ed messages in English and Spanish, MCPS QuickNotes, and backpack flyers. MCPS also posts an *Options* booklet on the district website and advertises these programs through MCPS TV. In the fall, parent information meetings are conducted in English and Spanish, and application workshops are held to support parents in each of the seven languages listed above to complete the applications at local schools. Furthermore, program materials and information about the programs are shared with all school-based gifted and talented liaisons, elementary school counselors, middle school resources counselors, and middle school accelerated and enriched instructional support teachers in fall meetings, as well as with all principals through memoranda and meetings. Each school is encouraged to advocate for two applicants by recruiting students who are qualified but may not be considering apply to a magnet or application program. District staff also conducts presentations at meetings of community organizations, such as the NAACP Parents Council.

Program-Level Findings

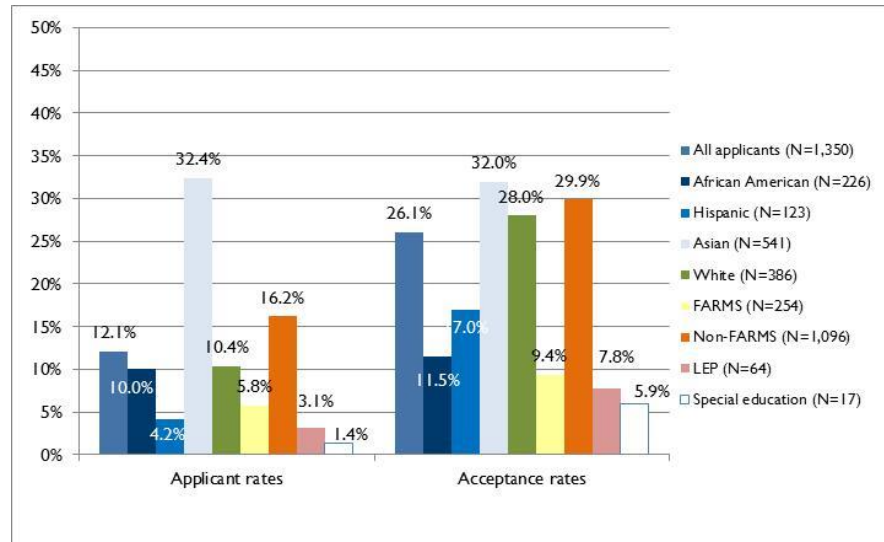
I. Number of seats and applicants

Demand for the secondary magnet and other application programs with selective admissions criteria exceeds the current supply of seats. For the 2013–14 school year, approximately 2,900 students applied for the 830 seats that were available in secondary magnet and other application programs with selective admissions criteria. Over half of all applicants to secondary magnet and application programs with selective admissions criteria applied to more than one program, including 47.7% at the middle school level and 55.1% at the high school level.

For middle school programs, 1,350 students applied for one of the 300 available seats; this represented 12.1% of all rising Grade 6 students in MCPS. For high school programs, there were 1,549 applicants for 530 available seats; this number represented 14.5% of all rising Grade 9 students in MCPS.

Application rates for secondary magnet and other application programs with selective admissions criteria were highest among Asian students and lowest among Hispanic/Latino and low-income students. An analysis of the demographic characteristics of the applicants compared with districtwide data showed the application rates varied substantially for students by racial/ethnic group and socioeconomic status. Exhibit 21 shows the application rates—as determined by the total number of applicants divided by the total number of rising Grade 6 students in the district for middle school programs and the total number of rising Grade 9 students in the district for high school programs. The data show that for middle school programs, application rates for Hispanic/Latino students (4.2%), students who were eligible for FARMS (5.8%), LEP students (3.1%), special education students (1.4%), Black/African American students (10.0%), and White students (10.4%) were below the overall rate for all applicants (12.1%). Conversely, application rates for Asian students (32.4%) and students who are not eligible for FARMS (16.2%) were above the overall rate.

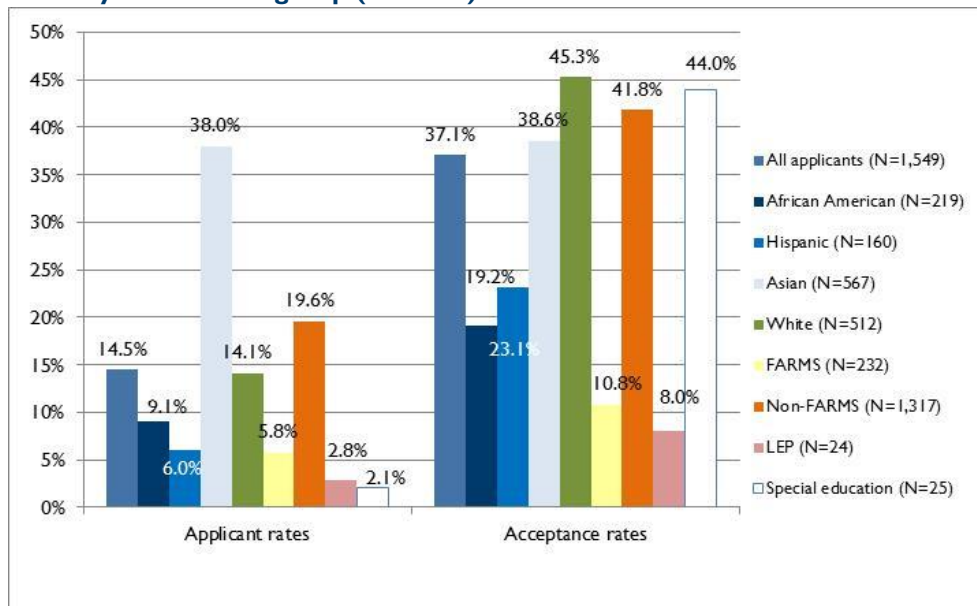
Exhibit 21: Middle School Magnet Application and Acceptance Rates by Student Subgroup (2013–14)



Data were similar at the high school level, for which the overall application rate was 14.5%. The application rates for Hispanic/ Latino students (6.0%), FARMS students (5.8%), LEP students (2.8%), special education students (2.1%), and Black/African American students (9.1%) were below the overall rate. Conversely, the application rates for Asian students (38.0%) and students who were not eligible for FARMS (19.6%) were above the overall rate.

Acceptance rates—as calculated by the number of applicants who were invited to enroll in the program divided by the total number of applicants—followed a similar pattern. As shown in Exhibit 22, the overall acceptance rates were 26.1% for middle school programs, and 37.1% for high school programs. At both levels, the acceptance rates for students who were eligible for FARMS, LEP students, Black/African American students, and Hispanic/Latino students were below the average rate, while acceptance rates for Asian, White, and non-FARMS eligible students were above the average. At the middle school level, the acceptance rate for special education students was below average; however it was above average for the high school level. Tables with complete data are presented in the Appendix.

Exhibit 22: High School Magnet and Application Programs Application and Acceptance Rates by Student Subgroup (2013–14)



2. Profile of students in magnets and application programs

Secondary magnet and other application programs with selective admissions criteria serve a small subgroup of the district’s population that does not fully reflect the racial, ethnic, and economic diversity of MCPS. In 2013–14, 1,026 students enrolled in middle school magnet programs with selective admissions criteria, representing approximately 3.1% of all middle school students districtwide; 1,985 students enrolled in high school magnets and other application programs with selective admissions criteria, representing 4.3% of all MCPS high school students. Data on the racial, ethnic, and socioeconomic distribution and English proficiency status of the students who were enrolled in magnet and other application programs with selective admissions criteria at both the middle and high school levels show substantial variance from districtwide demographics.

As shown in Exhibits 23 and 24, the proportion of Hispanic/Latino students in middle school magnet programs with selective admissions criteria was 20.4 percentage points lower than across the district; for high school programs, it was 18.2 percentage points lower than across the district. Similarly, the proportion of Black/African American students in magnet and other application programs with selective admissions criteria was 13.5 percentage points lower than the districtwide proportion for middle school and 15.8 points lower for high school programs.

Similar patterns are seen for FARMS and special education students. There were fewer than 10 LEP students in these programs; therefore data are not presented for this subgroup. In middle school programs, the proportion of students who were eligible for FARMS lagged the districtwide proportion by 31.4 percentage points. The proportion of special education students lagged the districtwide proportion by 12.3 percentage points. At the high school level, the proportion of students who were eligible for FARMS was 30.3 percentage points lower than the districtwide proportion and for special education it was 9.6 points lower than the district.

Exhibit 23: Enrollment by Race and Ethnicity and Eligibility for FARMS—Districtwide and Program Students, by School Level (2013–14)

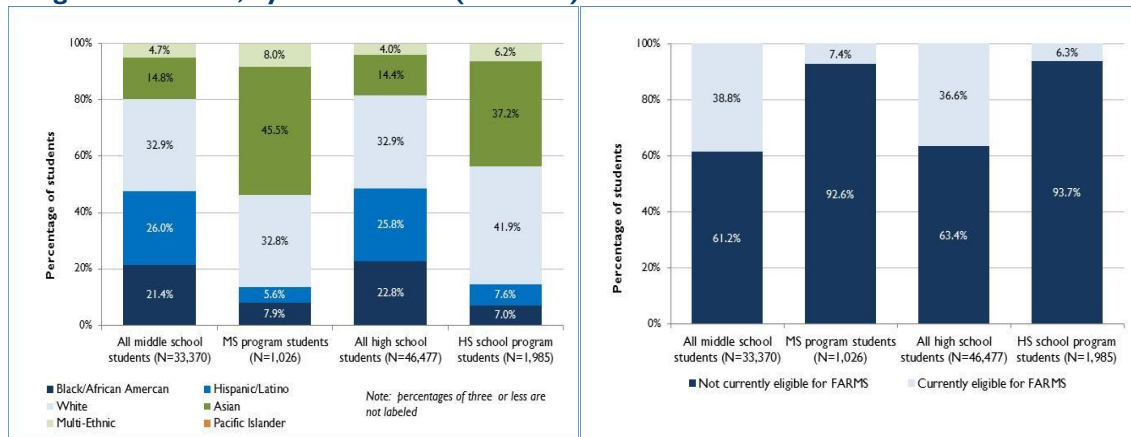
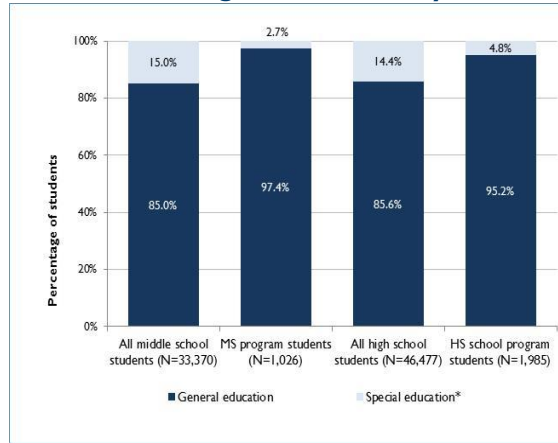


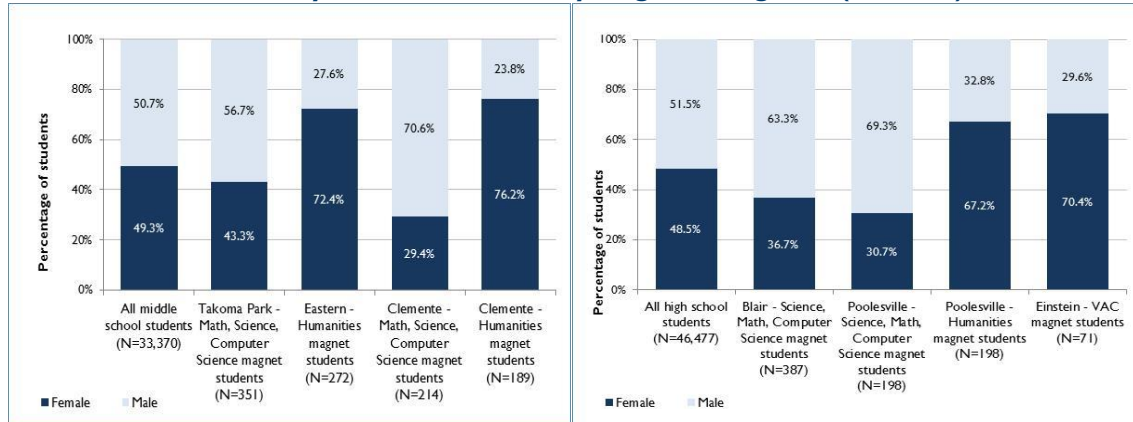
Exhibit 24: Enrollment by Special Education Status—All Students and Program Students, by School Level (2013–14)



*Includes students with 504s.

Enrollment data for 2013–14 also show that there are higher than average proportions of male students in math, science, and computer science magnet programs at both the middle school and high school levels, whereas female students enroll in humanities and arts magnet programs at higher than average proportions. These data are shown in Exhibit 25.

Exhibit 25: Enrollment by Gender— Secondary Magnets Programs (2013–14)

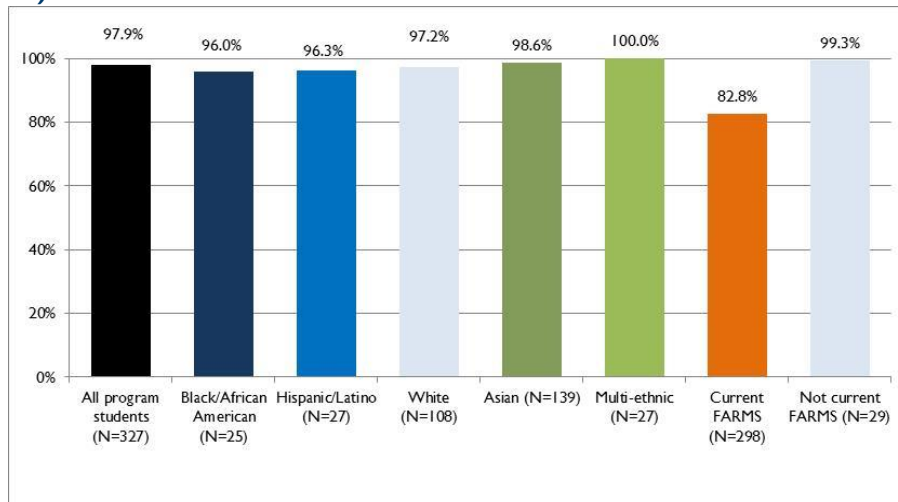


3. Academic outcomes of students in secondary magnets and other application programs with selective admissions criteria

Students in secondary magnets and other application programs with selective admissions criteria excel academically: almost all students in these programs met the MCPS milestones. Yet there were some achievement gaps by race/ethnicity and income level within the program student population. At the middle school level, 97.9% of all program students achieved the Algebra I milestone by Grade 8 in 2013–14. There were no statistically significant differences in achievement rates by race/ethnicity. There were, however, statistically

significant differences in outcomes by student eligibility for FARMS: 82.8% of students in the programs who were eligible for FARMS met the milestone compared with a much higher proportion (99.3%) of students who were not eligible (see Exhibit 26).¹³²

Exhibit 26: MCPS Algebra I by Grade 8 Milestone Data—Percentage of Middle School Magnet Students by Race/Ethnicity and Eligibility for FARMS Meeting the Milestone (2013–14)

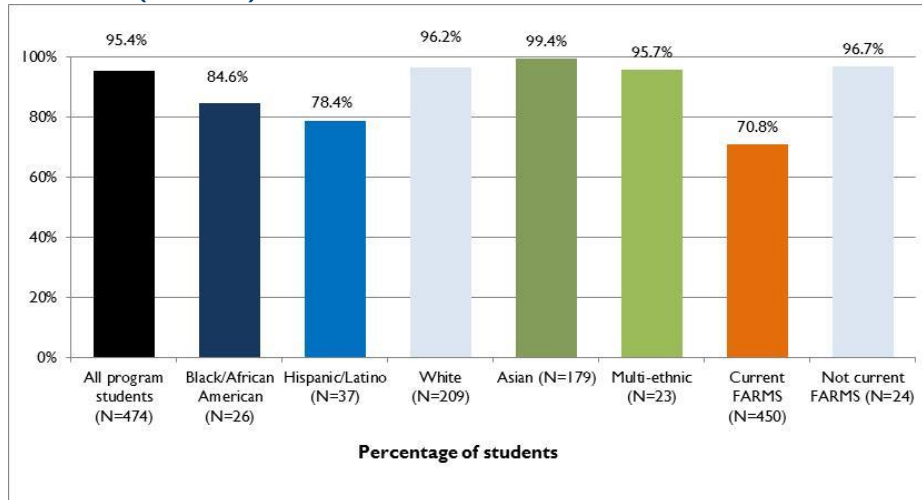


At the high school level, statistically significant differences among program students by race/ethnicity and eligibility for FARMS were found on the SAT/ACT and AP/IB milestones. It should be noted that these two milestones are based on students who graduated. As shown in Exhibit 27, 95.4% of all students in magnets and other application programs with selective admissions criteria achieved the SAT/ACT milestone in 2013–14. Among these students, lower proportions of Black/African American (84.6%) and Hispanic/Latino students (78.4%) compared with White (96.2%) and Asian (99.4%) students met the milestone. The differences were statistically significant. The differences between students who were eligible for FARMS (70.8%) and students who were not eligible (96.7%) were also statistically significant.¹³³

¹³² Algebra I: FARMS to non-FARMS students ($p=.000$, Cramer's $V=.325$).

¹³³ SAT/ACT: Black/African American to White students: ($p=.012$, Cramer's $V=.165$); Hispanic/Latino to White students: ($p=.000$, Pearson's Chi Square=16.367); Asian to White students: ($p=.033$, Cramer's $V=.108$); FARMS to non-FARMS students ($p=.000$, Pearson's Chi Square=34.356).

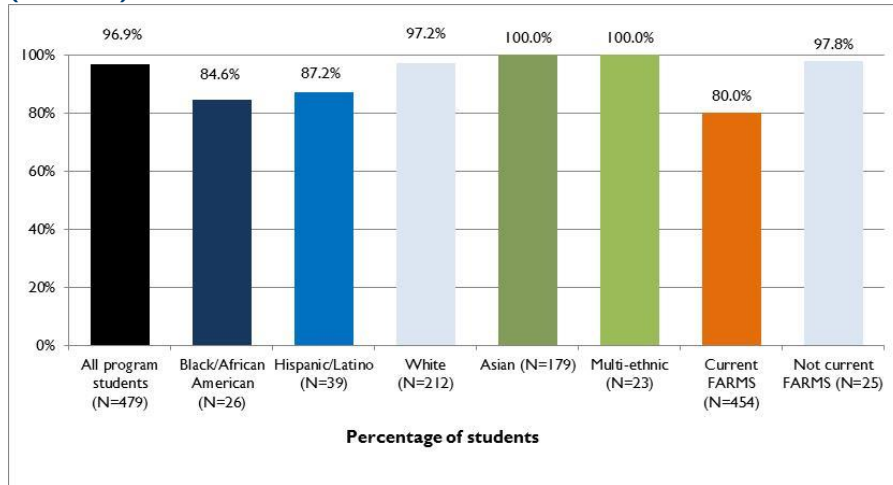
Exhibit 27: MCPS SAT/ACT Milestone Data—Percentage of Students in High School Magnet and Application Programs by Race/Ethnicity and Eligibility for FARMS Meeting the Milestone (2013–14)



Data on the AP/IB milestone show similar patterns. As displayed in Exhibit 28, overall, 96.9% of all students in magnets and other application programs with selective admissions criteria met the milestone. Among students in these programs, the proportions of Black/African American (84.6%) and Hispanic/Latino students (87.2%) were lower than of White (97.2%) and Asian (100%) students. The differences were statistically significant. The differences between students who were eligible for FARMS (80.0%) and students who were not eligible (97.8%) were also statistically significant.¹³⁴

¹³⁴ AP/IB: Black/African American to White students: ($p=.003$, Cramer's $V=.195$); Hispanic/Latino to White students: ($p=.005$, Pearson's Chi Square= 7.846); Asian to White students: ($p=.023$, Cramer's $V=.115$); FARMS to non-FARMS students ($p=.000$, Pearson's Chi Square = 24.742).

Exhibit 28: MCPS AP/IB Milestone Data—Percentage of Students in High School Magnet and Application Programs by Race/Ethnicity and Eligibility for FARMS Meeting the Milestone (2013–14)



Across all middle and high school MCPS milestones, the proportions of students in magnets and other application programs with selective admissions criteria who met the milestone in 2013–14 were significantly higher than for non-program students in the schools that house the programs. These results were statistically significant and observed at both the middle and high school level and across each of the MCPS milestones.

Students who enrolled in magnets and other application programs with selective admissions criteria had slightly higher academic outcomes on the MCPS milestones than students who applied for the programs but were not accepted or enrolled. MCPS milestone data were analyzed separately for two groups of applicants to magnets and other application programs with selective admissions criteria: students who were accepted and enrolled in the program (hereafter referred to as *participants*), and students who applied but did not enroll (hereafter referred to as *non-participants*). It should be noted that *non-participants* includes both students who applied and were not accepted and students who applied and were accepted but did not enroll. The number of students in the latter group was too small to conduct a separate analysis.

Thus, it must be noted that these data should be interpreted with caution because the analyses are limited to those who applied, and therefore the application process itself may also be a barrier for certain students. At the same time, it is likely that there were baseline differences between those that applied and were not invited and those that applied and were invited, and the programs themselves likely influence academic outcomes for students who enroll. Therefore, it may not be possible to determine whether or not differences in academic outcomes were due to differences between these two populations or due to the impact of having participated in the magnet program. Lastly, population sizes are quite small for many of the subgroups, limiting the usefulness of the data.

Notwithstanding these notes of caution, the results of the analyses show that for both middle and high school magnet programs, the proportion of participants who met select MCPS milestones was higher than for non-participants. For example, at the middle school level, the proportion of participants who met the Algebra I by Grade 8 milestone in 2013–14 was 10 percentage points higher than for non-participants, which was statistically significant. The differences were even greater among Black/African American and Hispanic/Latino students. The data show that 96% of Black/African American participants met the milestone compared with only 78% of Black/African American non-participants. Among Hispanic/Latino students, 96% of participants compared with 73% of non-participants met the milestone. These differences were also statistically significant.¹³⁵

At the high school level, differences in academic milestone achievement between participants and non-participants varied by milestone. For example, the greatest difference was on the SAT/ACT milestone—the proportion of participants who achieved the milestone was 15 percentage points higher than of non-participants, a statistically significant difference. The differences between participants and non-participants were greater among Black/African American and Hispanic/Latino students.¹³⁶ Furthermore, on the AP/IB milestone, the proportion of participants who met the milestone was 10 percentage points higher than non-participants. The differences were only statistically significant for White and Asian students.¹³⁷

4. Perceptions of parents, students, and staff

Parents and students in secondary magnets and other application programs with selective admissions criteria strongly agree that the programs provide unique academic experiences that are not readily available in home schools. In the focus groups, parents, staff, and students both in programs and not in programs agreed that the programs offer highly able students opportunities to learn within a cohort of students that has similar interests and academic ability. Parents and students agreed that joining a peer group of highly able students was a key factor in the decision to apply. As stated by a parent during the focus groups, *“Peer learning and motivation is very important. In the magnet program, you have a group of top smart students who motivate each other and learn together.”* Furthermore, some program students described that in their home school, they

¹³⁵ Algebra I milestone: Participants to non-participants ($p=.000$; Pearson’s Chi Square =27.028); Black/African American participants to Black/African American non-participants ($p=.034$, Cramer’s $V=.139$); Hispanic/Latino participants to Hispanic/Latino non-participants ($p=.010$, Cramer’s $V=.235$).

¹³⁶ SAT/ACT milestone: Participants to non-participants ($p=.000$; Pearson’s Chi Square =41.595); Black/African American participants to Black/African American non-participants ($p=.016$, Cramer’s $V=.249$); Hispanic/Latino participants to Hispanic/Latino non-participants ($p=.005$, Cramer’s $V=.257$).

¹³⁷ AP/IB milestone: Participants to non-participants ($p=.000$; Cramer’s $V=.162$); White participants to White non-participants ($p=.013$, Cramer’s $V=.132$); Asian participants to Asian non-participants ($p=.009$, Cramer’s $V=.125$).

were always the “smart kid” who finished work quickly and read books during lessons. As one student stated, *“It is boring being the smart kid in class. [In] the magnet classes, everyone is that smart kid in class.”*

Focus group respondents also reported that programs provide opportunities for students to explore thematic areas of interest and delve deeply into academic subjects. For example, students in the math, science, and computer science magnet programs talked about how they were engaged in learning programming languages and robotics, as well as studying science at a more in-depth and advanced level. They added that working with other students who share similar interests builds an environment for better class discussions and projects. For example, a magnet teacher stated, *“There is a dynamic that happens when you get students who are that able together. You take all the students who are highly, highly able students from all over the county and put them in a room. The level of discussion, the level of the speed you can go and the amount of detail you can go into is higher.”* These opinions applied to other magnet programs as well. As a student in the VAC at Albert Einstein HS stated, *“There is something about the VAC that makes you take into consideration what you are going to do in the future, what you are going to focus on in school. Because it takes up that space in your schedule, it forces you to think about what you are dedicating yourself to.”*

Parents and students who applied to these programs generally agreed they did so because they were seeking a higher level of academic rigor. During focus groups with parents, a common theme was that they were interested in the program because they did not think their child was being adequately challenged in their home school. As stated by a parent whose student did not attend a program, *“I just don’t think he is getting enough challenge. They don’t come home with work, they finish it at school. Only 15 minutes of homework which they do at school. I want to see work, struggle and challenge.”* Another parent agreed, stating of the programs, *“Raising the bar is a given. Students have deadlines for projects, which teaches them challenges of real life. That is the way the culture is in the [magnet program]; challenge is not a dirty word, it is just the culture.”* Students agreed; they added that they applied to the programs so they could be more challenged academically and be in a peer group of other students who learn quickly.

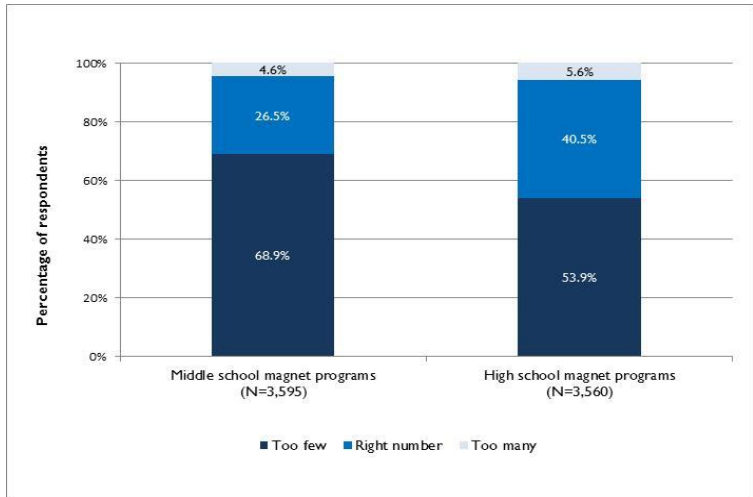
Stakeholders perceive that the limited number of seats is a barrier to equitable access. Both parents and students reported in focus groups that the limited number of seats is a major barrier to access. Because demand greatly outweighs the supply, many students and families are disappointed with the selection process. For example, the science, math, and computer science program at Montgomery Blair HS has 100 seats each year. Focus group respondents questioned what happens to the student who is 101st on the list. One parent stated, *“You can’t arbitrarily say there are 100 smart kids in MCPS. You just don’t have 100 kids each year who qualify for the program each year.”* Another parent stated, *“If we want to have a program that is directed to the really brilliant, then let all of the brilliant students in.”* Parents were also concerned because the number of seats drops from the elementary center program to middle school magnets, which restricts access to the programs further. As a parent explained, *“There are more seats in center programs than in middle school [magnets]. Either you need to have a program that grows as you grow or you need to redesign the middle schools to serve the*

needs of the students.” Students agreed. As one student stated, “There is a finite amount of students that can be accepted into each program. There are a lot of students that don’t make the cut and that doesn’t mean they don’t deserve to be in the program.”

The community survey, however, showed mixed opinions about impact on the number of programs on equity of access. For example, when respondents were asked if they think that number of magnets and other application programs with selective admissions criteria programs offered by MCPS supports or does not support equitable access to the programs, just under half (47.4%) of the respondents said it *supports* equitable access, while slightly more (52.6%) reported it *does not support* equitable access.

Exhibit 29: In your opinion, do you think MCPS offers too few, too many, or the right number of magnet and application programs?

Yet, when asked if there are too few, too many, or the right amount of magnets and other application programs with selective admissions criteria, most respondents said *too few*. As shown in Exhibit 29, 68.9% of the respondents felt that there are *too few* middle school magnet programs, and 53.9% reported that there are *too few* high school magnet programs. Very few reported that there are *too many* programs (4.6% middle school and 5.6% high school programs).



On the other hand, many MCPS stakeholders believe that MCPS should also pursue equity by raising expectations and opportunities for rigorous instruction across all schools.

Students, parents, and staff across focus groups agreed that there are highly able students in home schools as well as special programs. They added that all students should be offered a challenging academic program, whether they choose to attend a special program or a home school. As one parent stated, *“The answer might not be to make more seats here; it might be make the schools more effective at meeting more of the need.”*

“Equity is in general a concern. For those children who didn’t get into a magnet, how are you making sure they are challenged? It is not about giving resources to only magnet or only those who need support, it’s about every child should be the focus.” – MCPS parent

Some focus group respondents did not support expansion of magnet and other application programs with selective admissions criteria. They felt that the programs should be reserved for exceptional students, and that expanding the number of seats may dilute the academic caliber of the programs. Some staff agreed; as one teacher stated, *“If you mimic this program at every high school, there are not going to be enough students to fill those seats. Are there enough students to fill in at a third school, maybe there is, maybe there isn’t.”*

Lack of parental awareness of programs is a barrier to equitable access. MCPS uses a wide array of communication tools to share information in multiple languages with families about magnet and other application programs with selective admissions criteria; however, information is not reaching all segments of the community equally. During the focus groups, parents and students indicated that they received information about magnet and other application programs with selective admissions criteria through a variety of methods, including mailings, email messages, MCPS website, newsletters, and open houses. They added that parents who are looking for the information will find more than enough through multiple methods and sources. They expressed concerns, however, that parents who do not know to look for the information or who have not been encouraged by school staff or teachers to research and apply to the programs may be unaware that the information is available.

Parents in focus groups also felt that the MCPS website has a plethora of important information, but it can be hard to navigate and uses complex language which can be a barrier for non-native English speakers. Some parents applauded the MCPS practice of providing translation in multiple languages, but others expressed concerns that if the information is not clear or easy to understand, parents will not be able to access it even if in their own language.

Many parents in focus groups also reported that they have relied heavily on word of mouth and independent research to keep up to date on program and application requirements and timelines. These respondents acknowledged that they were able to obtain information through their own social networks that may not be equally

“The information needs to be given in real language. And it is time intensive, so I kept thinking, okay, if I was working two jobs, or if my husband was a cop and I was a nurse, if we were working night shifts, I would never get a handle on the information. It is skewed toward middle class parents who can make it a hobby, and this is not appropriate for this community.” – MCPS parent

“The school system goes as far as getting information translated [and] phone calls in Spanish. This is good but not the answer. We need, internally, to have staff who build relationships with parents outside of school, at non-traditional school events or partnerships with organizations with high impact with families of non-English backgrounds. They need more community organizing efforts and schools do not understand how to do that and do not prioritize these efforts. The district staff in Community Outreach is stretched and under-resourced. This does not speak to a priority to be more inclusive. In this district, you almost need a Master’s degree to keep up with communications.” – MCPS parent and community leader

accessible for other parents, especially low-income parents who work multiple jobs or are non-native English speakers.

Data from the community survey supported this finding. Among respondents, less than half (45.8%) reported that were *very familiar* with the different types of magnet and other application programs or *very familiar* with how to find out information about the programs (42.2%). The proportions of respondents reporting that being *very familiar* were even across racial and ethnic groups, with the exception of Hispanic/Latino respondents. On both items, Hispanic/Latino respondents

“For parents who have access to personal computers, there is plenty of information. But if you are a parent who does not have their level of access, I’m not sure there is enough information. The county is good about sending out information, but most of the real information comes from parent conversation. If you are a parent that is not able to connect to other parents in these ways, you may not know to look for the information. Many people are too reliant on schools and don’t understand that this is a different process and you need to advocate for your child.” – MCPS parent

were less likely to report being *very familiar* (29.3% and 28.2%, respectively). These data, which are presented in Exhibits 30 and 31, present a potential gap in MCPS’s approach to communication about these opportunities. This concern is highlighted in the following parent comments: *“It is not that we as Hispanic families are not motivated; it is lack of information and lack of transportation”* and *“The interest meetings, at kindergarten or third or fourth grade, every time you have access to the programs, every time they are in English with interpreters. I think we could reach out to the community if we have meetings in Spanish.”*

Exhibit 30: In general, how familiar are you with the program options that are offered for MCPS’s choice and special academic programs?

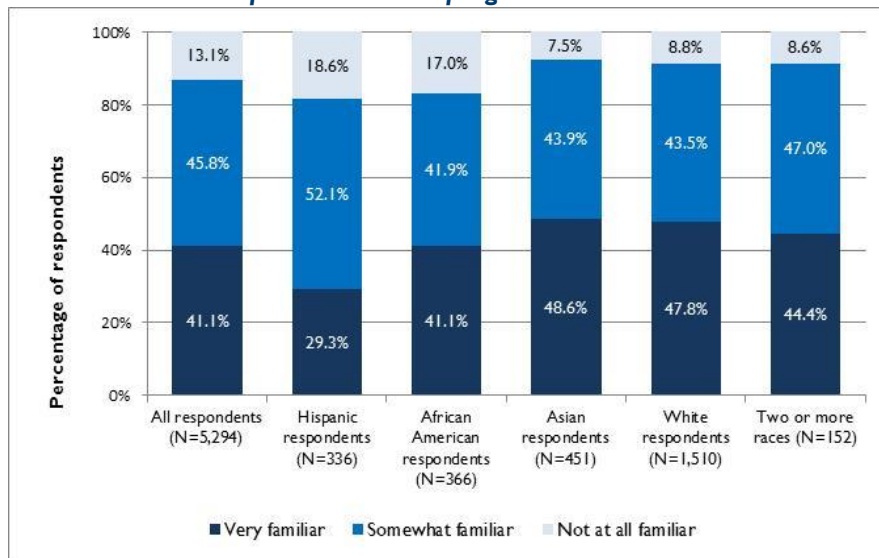
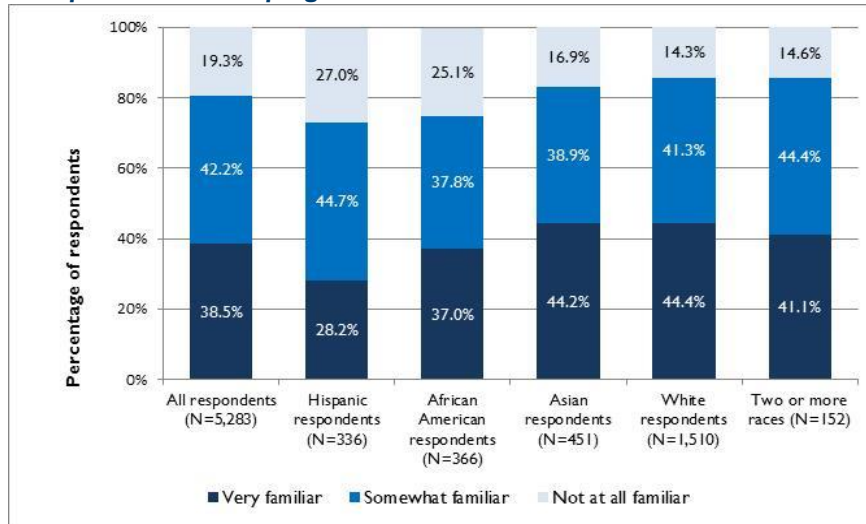


Exhibit 31: In general, how familiar are you with where to find information about MCPS's choice and special academic programs?



Parents and staff also reported that information about magnet and other application programs with selective admissions criteria is shared in some schools more than others, resulting in families having differential access. During the focus groups, parents and staff agreed that some schools promote programs among their home school families and share information about the application and testing process more than other schools. They added that principals and teachers in some schools advocate more often for highly able students in the application process, while others advocate infrequently or not at all. Several staff also reported that it is challenging when they advocate for a student whom they believe should be admitted into a program but does not get selected during the admission process. In these situations, they added, staff can lose the respect or credibility of parents who were relying on them to be advocates. These situations may act as a disincentive for staff to share information about magnet programs or to advocate for students.

When asked how MCPS could improve information to reach *all* families, respondents suggested that the district conduct more community-based outreach, such as at community events where MCPS staff could meet prospective families. Respondents also suggested providing more training for school staff across *all* MCPS schools about the programs and strategies for

“Elementary schools with center programs do a great job of exposing students to the middle school programs. Other schools do not; you just get a postcard about the program and [it] tell[s] you to go to the website. If parents are not immersed in it, it is easy to lose your bearing fast - not be able to get all of the forms fill[ed] out or [meet] the deadline.” – MCPS parent

“It has been a big track. And when you are in 5th grade and ready to apply to the middle school, the teachers will tell you about it and make sure you are up-to-date. Once you are sort of in it, it is easy to get information about it. People want you to continue in it.” – MCPS student

encouraging students to apply to the programs who do not have parents who can advocate for them. Finally, they added that MCPS should develop more streamlined, targeted, and easy-to-read information about what the programs are, who should apply, and how to apply, that are presented in “digestible bites” of information.

5. Impact on sending schools

There are perceptions that magnet and other application programs with selective admissions criteria cause a “brain drain” on other schools across the district; however analyses of MCPS milestone data reveal that evidence to support this viewpoint is limited to a small number of schools. During focus groups and interviews, district staff and high school principals articulated concerns that schools that do not house selective programs suffer academically due to the loss of high achieving students to magnet programs.

Furthermore, they expressed concern that schools are not able to offer a variety of honors and Advanced Placement courses at their schools when a critical mass of high achieving students choose to attend a selective program instead of the home school. As one high school principal stated, *“Magnets have an adverse effect on the Strategic Planning Framework for some schools because they take the top students out, which may decrease the number of staff positions, decrease the number of high level courses that can be offered, and decrease [the] peer group for high achieving students.”* Other principals and staff, however, argued that students should not be denied the opportunity to enroll in programs that meet their needs and interests because of the impact on school-level outcomes.

Data from the analyses of MCPS milestone data showed impacts of the enrollment of students in secondary magnet and other application programs with selective admissions criteria only at a limited number of those students’ home schools. In 2013–14, rising Grade 6 students assigned to 33 of the 38 middle schools based on attendance zones chose to enroll in a selective program rather than attend their home middle school. Rocky Hill MS had the highest number of zoned students who were enrolled in programs at other schools, 37 students. Other schools with high number of rising Grade 6 students in their local population who decided to enroll in middle school magnet programs included: Kingsview MS (29 students), Cabin John MS (25 students), and Herbert Hoover MS (22 students). Only two middle schools—A. Mario Loiederman MS and Parkland MS, which are both in the MSMC, discussed below—did not have students who were zoned to attend the school but chose rather to enroll in a middle school magnet program with selective admissions criteria in 2013–14.

At the high school level in 2013–14, each of the 25 MCPS high schools had rising Grade 9 students who chose to enroll in a magnet or other application program with selective admissions criteria at another high school rather than attend their home high school. The schools from which the largest number of Grade 9 students attended programs at other schools during the 2013–14 school year were Northwest HS (59 students), Wootton HS (44 students), Clarksburg HS (33 students), and Quince Orchard HS (32 students). Complete lists of the number of

students from each middle and high school data who enrolled in a magnet or other application program with selective admissions criteria are presented in the Appendix.

To examine the potential impact on the sending schools of students choosing to attend a magnet or other application program with selective admissions criteria rather than their home school, researchers compared MCPS milestone data using two student enrollment scenarios: 1) actual enrollment, i.e., all students who were enrolled in the school in 2013–14; and 2) hypothetical enrollment, i.e., enrollment in the school if *all* students who chose to attend a program were reassigned back to their home school. Data were analyzed to calculate and compare the percentage of students in each enrollment scenario that met the milestones. It should be noted that these analyses do not take into account any contribution that the program or school may have had in student achievement on the milestones. Furthermore, because the analyses require two scenarios using the same students, tests of statistical significance were not conducted.¹³⁸

At the middle school level, the analyses show that Sligo MS and Francis Scott Key MS had lower schoolwide achievement levels on MCPS milestones than they would if all of their zoned students chose to enroll in the home school. The analysis of MCPS milestone data for the two groups, actual enrollment and hypothetical enrollment (as defined above), found that for Sligo MS, the total proportion of students who met the Grade 8 reading milestone in 2013–14 was 4.1 percentage points lower than it would have been if all students who chose to enroll in a magnet program were reassigned back to Sligo MS. Similarly, the school's percentage of students meeting the Algebra I by Grade 8 milestone was 7.4 percentage points lower than it would have been if program students chose to enroll in Sligo MS. There was also an impact at Francis Scott Key MS. Performance on the Algebra I by Grade 8 milestone in 2013–14 was 3.9 percentage points lower than it would have been if all program students were reassigned back to Key MS. The impact on all other middle schools was minimal (differences of less than two percentage points).

At the high school level for the 2013–14 school year, the differences in the achievement levels based on actual and hypothetical enrollment scenarios were greatest for Northwest HS. The analysis of MCPS milestone data for the two groups show that for Northwest HS, the total proportion of students who met the MCPS milestones was lower in three of the seven areas studied than it would have been if all students who chose to enroll in a program were reassigned back to Northwest HS: Algebra 2 by Grade 11 (3.0 percentage points lower), SAT/ACT (8.4 percentage points lower), and AP/IB (6.2 percentage points lower). It should be noted that the

¹³⁸ In order to conduct tests of statistical significance, researchers would have to create duplicate data sets using dummy variables for the two scenarios, thus creating duplicate cases for each student. Due to the complexity of the task and the scope of research, these tests were not conducted. Furthermore, because the data show results for population-level analyses, rather than samples, differences can be interpreted as actual difference and do not require tests of statistical significance to measure the size of the differences.

AP/IB milestone may be impacted by students leaving Northwest HS to attend the Richard Montgomery IB magnet program.

There were impacts on other schools as well. For example, on the SAT/ACT milestone, four schools had lower percentages of students who met the milestone than if program students were reassigned back to their home school, including Seneca Valley HS (4.3 percentage points lower), Quince Orchard HS (4.4 percentage points lower), and Watkins Mill HS and Gaithersburg HS (both 4.6 percentage points lower). Again, it should be noted that these findings assume that school experience would not impact student achievement on the milestone. The impacts on other high schools were generally small with differences of less than two percentage points. Complete data for these analyses for middle and high schools are presented in the Appendix.

6. Impact on schools in which the programs are located

In schools with magnet and other application programs with selective admissions criteria, program students are not fully-integrated into the larger school population. In the focus group interviews, parents, students, and staff expressed concerns that the magnet and other application programs with selective admissions criteria often function as separate programs within the home schools. They added that the programs are oftentimes not fully integrated into the schools that house them, even though a single principal at each school oversees both the magnet program and the rest of the curriculum. It should be noted that this viewpoint was expressed even at Poolesville HS, which was designed as a “whole school” in order to increase integration among program and non-program students. At Poolesville HS, students from within and outside the attendance boundary can apply to enroll in one of three academically-selective magnet houses, and in-boundary students who do not enroll in an academically-selective magnet house are enrolled in a non-selective magnet program, the Independent Studies Program.

Respondents provided a number of possible reasons for the perceived separation between magnet programs and the home schools. Some respondents point to the fact that magnet students enroll in self-contained classes and only mix with non-magnet students during electives or non-instructional activities. These interactions can be further diminished if magnet students are scheduled for elective classes with primarily other magnet students due to scheduling constraints. A

“Unfortunately, it causes the relationships between groups of students to butt heads. Some of the students in the program feel they are entitled or better and sometimes the home students feel resentment.” – MCPS staff

“The magnet is for people that excel, but it also kind of creates a barrier between people who are not in the magnet and are in the magnet.” – MCPS student

“Special programs hurt more than they help. I think they create a sense of second class citizens among children who are too young to be subjected to that.” – MCPS parent

“Special programs create a stigma for people who are in it and who are not in it. We are cutting kids off early by identifying them in one way.” – MCPS parent

magnet student noted this problem by stating, *“We are not trying to purposely exclude people who aren’t in your house [program], sometimes your classes just happen to be that way.”* Another reason given was that magnet students travel long distances to get to school and have limited opportunities to socialize with non-magnet students after school or on weekends. Both of these reasons indicate the challenges of integrating two distinct populations within one school building.

However, some respondents also expressed concerns that labeling of students can contribute to the perceived separation of magnet and other students. For example, some staff reported that magnet students and home school students participate in name-calling that causes a division between the groups. They added that name-calling can be exacerbated when adults use terms such as *“gifted,” “magnet,”* or *“regular”* to describe students. At the middle school level, parents, staff, and students reported the use of the term *“normie”* to refer to non-magnet students. The separation can be especially detrimental for home school students who apply to magnet programs but who are not accepted. These students must remain in the school and observe other students participating in the program when they cannot.

The perceived separation of students within the building may serve as a deterrent to attracting a more diverse population to the magnet programs. As a community leader and parent noted, *“When you have one Black child amongst all these White and Asian [students], they feel alienated.”* Furthermore, another parent stated, *“When we put our children into these programs, we don’t realize the psychological impact that it is going to have later on as well; and that is something, if you had more diversity in these programs and more support for children of color, more of them would be in there and they would be successful.”*

Enrollment data further illustrate substantial differences in the racial, ethnic and socioeconomic characteristics of magnet students and the non-magnet student populations in schools that house these programs. As shown in Exhibits 32 and 33, the magnet student population includes higher proportions of Asian, White, and non-FARMS eligible students and lower proportion of Black/African American, Hispanic/Latino, and FARMS-eligible students when compared with the non-magnet populations. At the middle school level, the proportion of students who are eligible for FARMS is 46.8 percentage points higher in the non-magnet population than in the magnet student population. At the high school level, the difference is 49.3 percentage points.

Exhibit 32: Enrollment by Race and Ethnicity and Eligibility for FARMS—Middle Schools with Magnet Programs (2013–14)

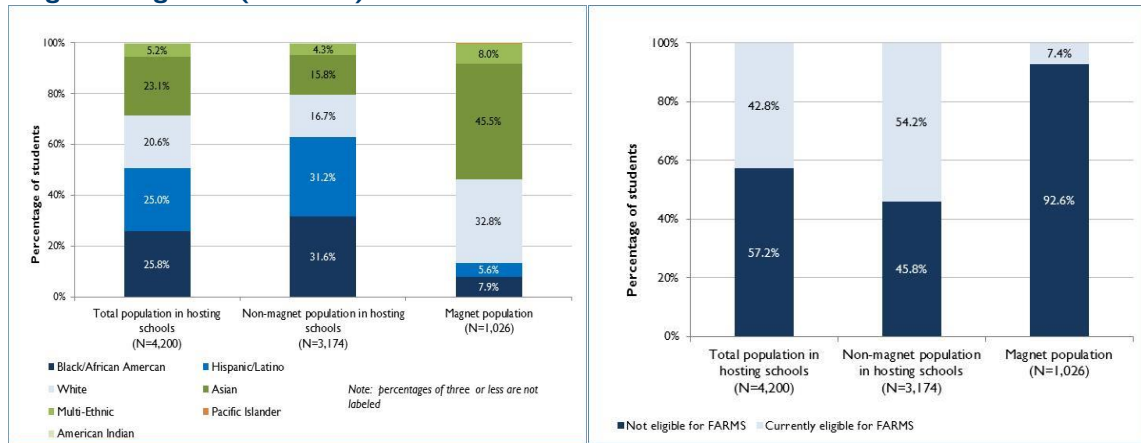
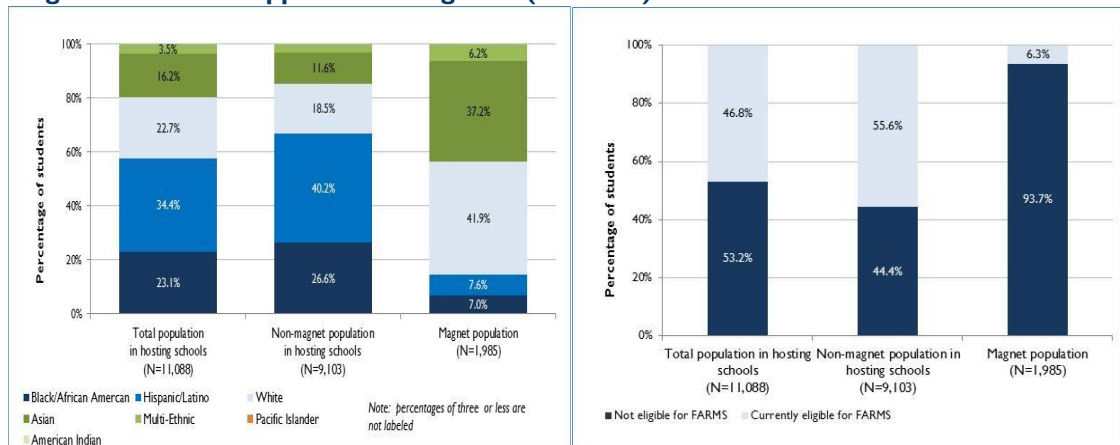


Exhibit 33: Enrollment by Race and Ethnicity and Eligibility for FARMS—High Schools with Magnet and Other Application Programs (2013–14)



7. Staffing and transportation costs for magnets and application programs

According to data provided by MCPS, the additional incremental costs for staffing and transportation associated with the magnet and application programs for the current school year (2015–16) totals approximately \$3,938,093. The district allocates \$123,887 to support testing and selection of students, including the costs of the test, scoring, and staffing for the selection process. This total also includes \$289,952 allocated for district-level staff and program resources, including portions of the salaries of program directors, supervisors, instructional specialists, a data management coordinator, and site-based administrative staff to support program enrollment, as well as resources to support program training, membership in recognized gifted and talented organizations, IB annual membership dues (for Richard Montgomery HS), office supplies (to support program training), and local travel to support program implementation.

Also included in these costs are additional incremental school-based staffing allocations. At the middle school level, the total cost for school-level magnet staff was \$734,254. The magnet programs at Takoma Park MS and Eastern MS were each allocated 1.6 FTE in staffing, and Roberto Clemente MS was allocated 2.0 FTE in staffing to support the magnet programs. At the high school level, the total cost for school-level magnet staff was \$1.59 million. The budget was used to support 3.4 FTE in staffing for the IB program at Richard Montgomery HS, 4.6 FTE in staffing for the magnet houses at Poolesville HS, 6.2 FTE in staffing for the magnet and application programs at Montgomery Blair HS, 0.6 FTE in staffing for the Engineering and Bioscience programs at Wheaton HS, and 0.4 FTE in staffing for the VAC at Einstein HS. These allocations do not include magnet coordinators at the high school level because these positions are counted as additional administrators comparable to what other high schools receive based on their student enrollment.

In addition, MCPS allocates approximately \$1.2 million for the additional incremental costs of transportation for students using centralized stops. The budget paid for 21.82 additional bus routes, including the cost of staff, fuel, equipment, and repairs.

8. Benchmarking and research

Most of the benchmark school districts of similar size and demographics to MCPS offer a variety of academically selective and non-selective secondary magnet and application programs. In contrast to MCPS’s reliance on selective admissions criteria for magnets and other application programs at the secondary level, six of the seven school districts used to benchmark MCPS’s secondary magnet and application programs—all but FCPS—offer a mix of academically selective and interest-based magnet or application programs. They also offer a broad selection of program models, including programs within schools as well as whole-school magnets. MCPS uses selective admissions criteria in all secondary magnets and other application programs that allow students to attend a school other than their home attendance school. MCPS also offers non-selective signature programs at the middle and high school level; however, these programs are only available to the local students in those schools or through the consortia model discussed below.

- **Clark County School District (CCSD)** offers magnet programs in 10 middle schools and 10 high schools. One high school magnet program is a “whole school” magnet. None of the middle school magnets are “whole school” magnet schools. CCSD does not have any academic criteria for admission to its middle school magnet programs. Students are selected through a lottery that includes a preference for siblings and also takes into account geography and feeder schools. At the high school level, CCSD also uses a lottery with a preference for siblings and considers geography and feeder schools. To be eligible for the lottery, students must meet certain criteria. The criteria that may be considered include grade point average, attendance, and citizenship (i.e., positive school

behaviors). For some high school magnet programs, additional criteria may be considered such as specific courses, grades in those courses, and auditions.

Magnet themes include: IB; international studies; creative arts; performing arts; technology; science, technology, arts, and engineering (STEM); coding, video gaming, and web design; leadership; finance; law; teacher education; aviation; medical; hospitality and tourism; and military science, technology, and emergency management (MSTEM).¹³⁹

- **Wake County Public School System (WCPSS)** offers magnet programs at 10 middle schools, nine high schools, and two middle/high schools. Examples of the middle and high school themes offered include: gifted and talented (GT)/academically or intellectually gifted (AIG) basics; museums; technology; language immersion; leadership; global studies; IB; university connections, creative arts; medical sciences; STEM Early College; Vernon Malone College and Career Academy; and Wake Early College of Health & Science. At the middle school level, WCPSS does not use academic admission criteria for magnet programs, except for the Early College magnet programs and half of the seats in each of the gifted and talented/AIG magnets. Students applying for the AIG Basics program at the middle school level must be identified as academically or intellectually gifted according to Wake County policy in order to apply for that program. Any student may apply for the gifted and talented part of the program, and all students participate in the elective program of the gifted and talented theme. At the high school level, WCPSS uses academic admission criteria only for the Early College program. Selection for the Early College magnet program is aligned with, but not based solely on, the score on the early college application.

WCPSS uses a weighted lottery selection process except for middle and high school Early College programs and for 50% of the seats in each of the gifted and talented/AIG middle school magnets. For the lottery, each applicant is assigned a random number that is generated by the selection software. Then, points are awarded to applicants who meet any of the selection priorities. The first priority is for incoming entry grade siblings of current magnet students. If a sibling applies during the magnet application period, that student is guaranteed admission to the magnet program to which he or she applied. After WCPSS has assigned all of the siblings who meet priority 1, WCPSS fills 90% of the remaining seats in the following order: current magnet students following program pathway (priority 2); current magnet students who seek to change their magnet pathway (priority 3); non-magnet student at magnet schools who follow their program pathway

¹³⁹ <http://magnet.ccsd.net/magnet-schools/>.

(priority 4); students residing in areas designated as high-performing (priority 5); students whose next facility is projected to be crowded (priority 6); and non-entry grade siblings of current magnet students whose first choice school is their sibling's school (priority 7). The remaining 10% of the seats are filled using the random number only.¹⁴⁰

- **Hillsborough County School District (HCS D)** offers magnet programs at 12 middle schools and 14 magnet programs at the high school level. The middle school program themes include: environmental studies, a girls preparatory academy, a boys preparatory academy, two Visual, Performing and Communication Arts programs, cultural arts and the humanities, IB middle years program at three schools, medial studies, and STEM.¹⁴¹ The high school program themes include: architecture; STEM; health; performing arts; college prep; collegiate academy; IB and urban teaching academy. HCS D does not use academic criteria to select students for its magnet middle schools. HCS D uses a random lottery process for selecting students for its magnet middle schools with a preference for siblings and students who live in the walk zone for the magnet school.

HCS D uses academic criteria for all of its magnet high school programs. The criteria include: grades in core course (language arts, math, science, and social studies) from Grade 7 and from the first quarter of Grade 8; a writing sample; and standardized test scores from Grades 6 and 7 (the better of the two) for reading and math. Ten of the 12 magnet middle schools are “whole school” magnets. None of the high schools are “whole school” magnets.

- **Houston Independent School District (HIS D)** offers middle school magnet programs in 30 schools. The magnet themes offered in middle schools include: gifted and talented (“Vanguard”); medicine; foreign language; engineering; career technology education; IB; Montessori; environmental studies; robotics; STEM; fine arts; health and medical science; performing and visual arts; futures; allied health; fine arts; single gender; math and science; and sports medicine.

HIS D’s offerings are similar at the high school level: among the magnet programs at 32 schools, the themes include gifted and talented (“Vanguard”); college and career readiness; international studies; foreign language; maritime; teaching professions; fine arts; Early College; biomedical science; environmental sciences; engineering; media; culinary arts; hotel management; health professions; STEM; energy; futures; law enforcement and criminal justice; performing and visual arts; IB; single gender; computing science; aviation; technology; maritime and communications.

¹⁴⁰ <http://www.wcpss.net/magnet>.

¹⁴¹ <http://www.sdhc.k12.fl.us/doc/688/magnet-high>.

At both the middle and high school levels, some magnet programs are designated as “open enrollment,” meaning there are no admission criteria, but rather HISD uses a random lottery to choose students based on interest. For other programs at both levels, HISD uses a matrix to determine whether students have the minimum skills necessary for the magnet curriculum. The matrix includes grades, test scores, and consideration of LEP and/or FARMS status. For the Vanguard middle and high school magnet programs, students must be identified as gifted and talented.

- **Baltimore County Public Schools (BCPS)** offers a similar range of secondary magnet programs. At the middle school level, the district offers four whole-school and four program-within-a-school magnets. Themes include: 21st Century digital learning; career and professional studies; conservation sciences; earth/space science; environmental; exploratory; health sciences; law and finance; performing arts; visual arts, mass communications, and world language. BCPS uses a random lottery to select students for the two middle school magnet programs that do not have admission criteria. For the other six programs, BCPS uses criteria for admission including academic performance and performance on a magnet assessment, which may include an audition, a practicum, an interview, a writing sample, or a test or performance assessment. To qualify, students must earn at least 70 of 100 points in the evaluation process. BCPS fills up to 20% of the seats by qualified applicants who show exceptional commitment and promise in the magnet program based on their performance on the magnet assessments. For the remainder of the seats, BCPS fills the seats using a random lottery of remaining qualified applicants.

For high school, there are six “whole school” and nine program-within-a-school magnet programs. At the high school level, themes include: IB; sports science; computer science; mass communications; environmental studies; arts and communications; business and information technology; leadership and humanities; biomedical sciences; STEM; visual art; performing arts; teaching academy; information technology; law and public policy; interactive media production; engineering; and career and technical education programs. BCPS has admission criteria for all of its high school magnet programs, using a similar approach as described for the selection middle school magnets.¹⁴²

- **Jefferson County Public Schools (JCPS)** offers magnet or optional programs at 23 of its 28 middle schools. The middle school themes include: excellence in teaching and learning; aerospace; all-boys school; all-girls school; Catalpa/Waldorf model; digital and global leadership; gifted and talented; international studies; mathematics, science, and

¹⁴² <https://www.bcps.org/offices/omp/>.

technology; Montessori; self-directed learning; sixth grade academy; seventh and eighth grade academy; traditional; visual and performing arts; environmental and life science; environmental education; fine arts; health careers and liberal arts. Schools may develop and use criteria for admission to magnet programs, such as a student work sample or test scores. The criteria are reviewed by the magnet staff. Schools select students based on their criteria. Four of the middle schools offering magnet or options programs are “whole school” magnets. Five of the 23 middle school programs are optional programs. This means that students living outside the school’s attendance area may apply and be accepted into the options programs, but JCPS does not provide transportation.

Additionally, JCPS offers magnet programs at six high schools and all six of the high schools offering magnet programs are “whole schools” magnets. The magnet themes include: self-directed learning; precollege curriculum with ten specialized programs in four areas of concentration – business, law, technology and health services; communications; college preparation; math/science/technology; visual arts; youth performing arts and traditional. Schools may develop and use criteria for admission to magnet programs, such as a writing samples, test scores, report cards, attendance records; behavior report, activities and interests surveys, teacher recommendations, interview, and auditions. Magnet staff reviews the criteria. Schools select students based on their criteria. Students from throughout JCPS may apply for the high school magnet programs. For five of the six high schools offering magnet programs, JCPS provides transportation for most students. JCPS does not provide transportation for one the high schools offering magnet programs.

Academic research has shown that non-selective magnet schools have a greater impact on promoting diversity than selective programs, and at the same time produce academic and social benefits for students. Over the past 40 years, numerous studies have been published about the academic and social benefits to students who attend racially, ethnically, and socioeconomically diverse schools.¹⁴³ The data indicate that students who attend schools with youth from different racial and ethnic backgrounds have improved academic outcomes, benefit from stronger in-class dialogue and debate, and form better understandings about different backgrounds and points of view.¹⁴⁴

Research also shows that different types of magnet programs yield different impacts on student outcomes. For example, magnet programs that use selective admissions criteria have strong

¹⁴³ Hawley, Willis. (2007). Designing Schools that Use Student Diversity to Enhance Learning of All Students. In Erica Frankenberg and Gary Orfield (Ed). *Lessons in Integration*. Charlottesville: University of Virginia Press.

¹⁴⁴ Siegel-Hawley, Genevieve (2012). How Non-Minority Students Also Benefit from Racially Diverse Schools. *The National Coalition of School Diversity. Research Brief No. 8.*

academic outcomes, largely due to the fact that they only accept high achieving applicants. However, research shows that magnet programs that utilize non-competitive standards, such as lotteries or open enrollment, have a stronger impact on promoting diversity and supporting desegregation goals.¹⁴⁵ Additionally, rigorous evaluations of magnet programs, in Connecticut and California, have presented data showing higher academic outcomes of students in non-selective magnet programs compared with students in comparable non-magnet schools.¹⁴⁶

Furthermore, selective magnet schools that do not yield racially diverse student enrollment can negatively affect student outcomes, through increased racial isolation and within-school segregation. For example, a 2012 article “*To Be Black at Stuyvesant High*,” in the New York Times documented the experiences of a student who was one of only a few African American students at the elite high school in New York City. As stated in the article, “*She [student] has been the only black person in most of her classes, and often goes hours without seeing another. The school’s attendance sheets have names and pictures of the students, and she said teachers were quick to learn who she is; there are few others like her, she said.*” In recent years, these issues of racial isolation and racial stereotypes have been spotlighted by minority students in MCPS. For example, in 2015, students at Bethesda Chevy-Chase HS were inspired by a play, video, and photo project conducted by African American students in Ivy League universities to create a six-minute YouTube video entitled “*I, Too, Am B-CC.*” The video used short narratives from students of color to describe the challenges of African American and Hispanic students at the school. These narratives highlight the implementation of racial isolation in MCPS. For example as described in one student’s words, “*I just felt like everyone was looking at me like, oh, I was that black girl who made the team because she was black and not because of merit.*”¹⁴⁷

Research also indicates that the over-reliance on standardized tests in identifying students to participate in selective programs does not fully capture the wide ranges of intellectual capacities and abilities that are indicators of academic success. Academic research and the voices of community leaders and advocates have long highlighted the role that admissions tests play in creating barriers to access for some students. Data indicate that across school districts, as in MCPS, selective programs enroll higher proportions of Asian and White students and lower proportions of Black/African American and Hispanic/Latino when compared with district

¹⁴⁵ Frankenberg, E., & Siegel-Hawley, G. (2008). *The Forgotten Choice: Rethinking Magnet Schools in a Changing Landscape*. Los Angeles: Civil Rights Project/ Proyecto Derechos Civiles. UCLA.

¹⁴⁶ Frankenberg, E., & Siegel-Hawley, G. (2011). Magnet School Student Outcomes: What the Research Says. *The National Coalition of School Diversity. Research Brief No. 6.*

¹⁴⁷ St. George, Donna (2015, February 23). Struggle of minority students in Montgomery: ‘I, Too, Am B-CC’. *The Washington Post*.

enrollments.¹⁴⁸ The level of racial and ethnic segregation in selective programs, which was originally ameliorated with the use of race-conscious admissions processes established as part of court-ordered desegregation plans or local efforts but since limited by decisions of the U.S. Supreme Court, has increased over the past several decades as districts started relying primarily on admissions tests to select the highest achieving students.

Research has highlighted that over-reliance on standardized tests to select students for programs may under-identify the academic potential of many students, especially of students of color and those from low-income backgrounds.¹⁴⁹ Research also suggests that the use of tests that evaluate material that students have not yet had the opportunity to learn in school is a less effective predictor of academic success than the use of school grades and exams that evaluate mastery of curriculum content. Additionally, the latter are not only more effective in predicting academic success but are a more equitable and fairer measure for low-income students and students of color.¹⁵⁰ In fact, some colleges and universities are shifting away from over-reliance on test scores to evaluate applicants, but rather are recognizing that high school grades “*outperform standardized tests in predicting college outcomes,*” irrespective of the quality or type of high school attended, and are also less closely associated with students’ socioeconomic or racial backgrounds than the results of standardized tests.¹⁵¹

Challenges to the over-reliance on assessments have been a key point in complaints made against the academically selective high school, Thomas Jefferson (TJ) HS for Science and Technology in FCPS, as well as specialized high schools in New York City, as discussed more fully below. TJ is a nationally recognized selective high school that is designed to serve gifted and talented students from across FCPS and neighboring districts. However, it has struggled with issues of equitable access. The current admissions policy identifies a pool of semifinalist applicants who have the highest combined admissions test scores and grade point averages. A second review is conducted for each semifinalist using a holistic assessment that examines applicants’ merits based on aptitude in science and technology, record of prior academic achievement, and interest and motivation, as well as considering gender and socioeconomic factors. In 2003, a complaint was filed with the U.S. Department of Education’s Office for Civil Rights (OCR) claiming that the policy was being used to discriminate on the basis of race, against White students in favor of

¹⁴⁸ Shakarian, Katrina. (2014, November 11). Remaining Elite, Ensuring Diversity: Boston, Chicago & New York Wrestle with Admissions to Special High Schools. *Gotham Gazette*.

¹⁴⁹ Callahan, Carolyn M. (2005). Identifying Gifted Students from Underrepresented Populations. *Theory into Practice*, 44(2), 98-104.

¹⁵⁰ Atkinson Richard C. & Geiser, Saul (2009). Reflections on a Century of College Admissions. *Research & Occasional Papers Series: CSHE.4.09*. Retrieved from <http://www.cshe.berkeley.edu/sites/default/files/shared/publications/docs/ROPS-AtkinsonGeiser-Tests-04-15-09.pdf>.

¹⁵¹ Ibid; see also William G. Bowen et al., *Crossing the Finish Line: Completing College at America’s Public Universities* 8-10 (2009).

Black/African American students. In 2012, the complaint was resolved, finding no evidence of discrimination.¹⁵²

However, in that same year, the Coalition of The Silence and the Fairfax County Branch of the NAACP jointly filed another complaint with OCR, this time claiming discrimination against Black/African American and Hispanic/Latino students. The complaint claimed that the disparity in the quality of education across FCPS schools and programs offered in the schools has produced a system of separate and unequal schools that are not equitably preparing students for admission to FCPS GT programs, which serve as a pipeline to TJ. Admissions to the gifted and talented programs use multiple factors but is heavily weighted on cognitive and standardized test scores.¹⁵³ As stated in the complaint, “*Nearly every FCPS student admitted to TJ attended a level 4 Advanced Academic center (GT) in middle school. Because Black and Latino students are denied access to these services at the very earliest stages of identification for ‘giftedness,’ the lack of Black and Latino representation at TJ should come as no surprise.*”¹⁵⁴ The most recent complaint against TJ underscores that impact of early identification of students for GT programs and the heavy reliance on test scores on admissions to selective programs at the secondary level.

The use of non-cognitive factors, such as self-efficacy and persistence, is an emerging area for admissions to selective colleges and universities that could also hold promise at the secondary level. Much of the traction for the trend toward using non-cognitive factors stems from the work of academic researchers such as Paul Tough, Carol Dweck, and Angela Duckworth.¹⁵⁵ Their research is focused primarily on the importance of preparing students to succeed to college and careers by equipping them with non-cognitive skills in addition to academic skills. It also highlights the importance of displaying other skills, such as motivation, perseverance, and grit to equip students with skills to excel and succeed. Numerous research studies have been conducted to study the link between non-cognitive skills and college or workforce performance.¹⁵⁶ In response to this research, admissions offices at some selective colleges and universities are factoring in non-cognitive skills into their processes.¹⁵⁷ These processes include greater emphasis on essays and recommendations, and less or no emphasis on SAT or ACT scores. These institutions, however, have been challenged with the task of determining how to measure the non-cognitive skills in a valid and reliable way. The Educational

¹⁵² <http://www2.ed.gov/about/offices/list/ocr/docs/investigations/11041020-a.html>.

¹⁵³ <http://www.fcps.edu/is/aap/packet/ParentInformationPacketFCPS.pdf>.

¹⁵⁴ <https://coalitionofthesilence.files.wordpress.com/2012/10/fairfax-complaint-7-23.pdf>.

¹⁵⁵ Tough, Paul (2012) *How Children Succeed: Grit, Curiosity, and the Hidden Power of Character*. Houghton Mifflin Harcourt, New York, NY; Dweck, Carol S. Ph.D. (2008). *Mindset: The New Psychology of Success*. New York: Ballantine Books; Duckworth, Angela (2016). *Grit: The Power of Passion and Perseverance*. New York: Scribner.

¹⁵⁶ https://www.ets.org/s/workforce_readiness/pdf/21334_big_5.pdf

¹⁵⁷ Jaschik, Scott (2012, April 9). How They Really Get In. *Inside Higher Ed*.

Testing Service (ETS), in response to the increased interest in non-cognitive measures, has developed the Personal Potential Index (PPI), a teacher-completed assessment that rates students on a five-point scale in six categories: communication skills, ethics and integrity, knowledge and creativity, planning and organization, resilience, and teamwork.¹⁵⁸ The PPI has been used at the graduate admissions level, but has not been tested for secondary level admissions. Additionally, research in this topic area revealed no published tools that have been implemented on a large scale to measure non-cognitive skills for high school application processes. Furthermore, research also suggests that while non-cognitive skills are important, traditional academic skills are still critical to student success and should not entirely overlooked.¹⁵⁹

There has been some academic research on the potential benefits of using guaranteed admissions to selective programs for a percentage of top academic performers at all feeder schools. For example, a study conducted in 2015 by the Research Alliance for New York City Schools and the Institute for Education and Social Policy in New York University examined the impact of admissions rules on diversity in the city’s selective high schools. As in other districts, New York City has long faced significant challenges to its selective admissions process with claims that tests are racially biased and favor students who can afford expensive test preparation courses. In September 2012, the NAACP Legal Defense Fund, LatinoJustice PRLDEF, and The Center for Law and Social Justice at Medgar Evers College filed a federal civil rights complaint on behalf of a broad coalition of organizations challenging the admissions process. Since then, there have been many recommendations for modifying the selection process to incorporate alternative measurements or considerations. To study this issue, researchers from NYU conducted simulations of alternative admissions rules to the city’s selective high schools using combinations of state test scores, grades, attendance, and other criteria. The data showed that one scenario produced substantial changes in the demographic mix of the programs—this scenario included a rule that guaranteed admissions to all students across the city who were in the top 10% of their middle school graduating class.¹⁶⁰

This model, sometimes referred to as the “top ten percent” plan, has not been tested widely at the secondary school level, but there have been some recent experiments with reserving seats in magnet programs. After a desegregation consent decree ended, Chicago Public Schools (CPS)

¹⁵⁸ Hoover, Eric. (2014, April 17). Colleges Want Student With Character, But Can’t Measure It. *Nautilus*.

¹⁵⁹ For example, see Kohn, Alfie (2014, April 6). The Downside of “Grit:” What Happens When Kids are Pushed to Be More Persistent? *The Washington Post*; Sparks, Sarah D. (2014, August 19). Grit May Not Spur Creative Success, Scholars Say. *Edweek*.

¹⁶⁰ Corcoran, Sean P. & Baker-Smith, Christine (2015). *Pathways to an Elite Education: Exploring Strategies to Diversify NYC’s Specialized High Schools*. New York: New York University. Retrieved from http://steinhardt.nyu.edu/research_alliance/publications/pathways_to_an_elite_education.

made revisions to its admissions process for magnet and selective schools to maintain diversity. For the entry grade level in CPS's selective elementary and secondary programs, 30% of seats are filled based on students' test scores and grades; the remaining seats are allocated through a lottery to the highest-scoring students from each of four different geographic tiers, which group census tracts based on: median family income; percentage of single-parent households; percentage of households where English is not the first language; percentage of homes occupied by the home-owner; adult education attainment; and the achievement scores from attendance area schools for the students who live in each census tract. For other non-selective magnets, the tiered approach is utilized for a portion of the seats, and for the remainder, there are separate lotteries for siblings and students who live in proximity to the schools.¹⁶¹

Another example is New York City, which recently announced a program in which seven elementary schools will set aside a percentage of seats in their choice admissions process for low-income families, English-language learners, or students in the child welfare system as a means of creating greater diversity within their schools.¹⁶² In addition, there are other districts that expressly consider socioeconomic diversity in their magnet school selection processes, even if they do not reserve a percentage of seats on this basis.¹⁶³

Moreover, several state university systems have had extensive experience with the percentage plan model. For example, the University of Texas was the first to implement the "Top Ten Percent" plan (TTP) to grant automatic admission to the top 10% of students across all districts across the state based on grade point average and class rank. Enrollment data since the plan was first adopted in 1998 have shown increases in the number and proportion of Black/African American, Hispanic/Latino, and Native American students who are being selected for and enrolling in the state's selective public universities.¹⁶⁴ However, the increase in diversity was not seen until the universities increased scholarships and financial aid for low-income students identified through the TTP in order to ensure that these students could afford to accept the admissions offer.¹⁶⁵ Two other states, Florida and California, have since adopted similar plans:

¹⁶¹ Chicago Public Schools, Office of Access and Enrollment, Selection Process for Magnet and Selective Enrollment Schools: An Overview, available at: http://www.cpsmagnet.org/apps/news/show_news.jsp?REC_ID=184188&id=0.

¹⁶² Spencer, Kyle (2016, February 16). Programs Aim to Keep Schools Diverse as New York Neighborhoods Gentrify. *The New York Times*.

¹⁶³ Potter, Halley et al. (2016). A New Wave of School Integration: Districts and Charters Pursuing Socioeconomic Diversity. Century Foundation 15-16.

¹⁶⁴ Daugherty, Lindsay, Martorelli, Paco, & McFarlin, Issac (2014). The Texas Ten Percent Plan's Impact of College Enrollment. *EducationNext*, 14, 63-69.

¹⁶⁵ Webster, Nicholas (2007). *Analysis of the Texas Ten Percent Plan*. Kirwan Institute for the Study of Race and Ethnicity, The Ohio State University. Retrieved from http://kirwaninstitute.osu.edu/wp-content/uploads/2012/05/Texas-Ten-Percent_style.pdf.

Florida grants automatic admission to the University for Florida for the top 20% of students in graduating high school classes; the University of California systems provides automatic admissions to the top 4% of graduating high school classes.¹⁶⁶

Observers point out that the TTP relies for its efficacy on segregation and racial isolation at the high school level; another critique is that the TTP admits under-prepared students who excelled in lower-performing high schools but who are not equipped to handle the rigor of an elite university and who may struggle to succeed academically. Critics also argue that the TTP may overlook qualified students who rank lower in high-performing high schools.¹⁶⁷ Another concern is that the TTP may benefit students who focus primarily on traditional schooling activities and coursework and may not identify students who are late bloomers in their high school careers or those who focus on extracurricular activities or civic activism which may be just as strong an indicator of college success. In response to these criticisms of the TTP, research from the Texas Higher Education Opportunity Project at Princeton University has provided data showing that Texas college students who were admitted under the TTP out-performed non-TTP in college success, even when the non-TTP had better admissions test scores.¹⁶⁸

The TTP and other models discussed above are among the menu of options for admissions processes that focus specifically on promoting diversity, consistent with applicable law, which can be found in joint guidance issued by the U.S. Department of Education and the U.S. Department of Justice, including:¹⁶⁹

- A school district could identify race-neutral criteria for admission to a school (*e.g.*, minimum academic qualifications and talent in art) and then conduct a lottery for all qualified applicants rather than selecting only those students with the highest scores under the admission criteria, if doing so would help to achieve racial diversity or avoid racial isolation.
- For students who meet the basic admissions criteria, a school district could give greater weight to the applications of students based on their socioeconomic status, whether they attend underperforming feeder schools, their parents' level of education, or the average income level of the neighborhood from which the student

¹⁶⁶ Horn, Catherine L. & Flores, Stella M. (2003). *Percent Plan in College Admissions: A Comparative Analysis of Three States' Experiences*. Cambridge, MA: The Civil Rights Project at Harvard University.

¹⁶⁷ Webster, Nicholas (2007). *Analysis of the Texas Ten Percent Plan*. Kirwan Institute for the Study of Race and Ethnicity, The Ohio State University. Retrieved from http://kirwaninstitute.osu.edu/wp-content/uploads/2012/05/Texas-Ten-Percent_style.pdf.

¹⁶⁸ Tienda, M. (2006). Harnessing diversity in higher education: Lessons from Texas. *Texas Higher Education Opportunity Project* forthcoming report. Available at: <http://texastop10.princeton.edu/reports/forthcoming/Tienda--R03.pdf>.

¹⁶⁹ <http://www2.ed.gov/about/offices/list/ocr/docs/guidance-ese-201111.pdf>.

comes, if the use of one or more of these additional factors would help to achieve racial diversity or avoid racial isolation.

- If it would help achieve racial diversity or avoid racial isolation, a school district could decide to admit all applicants with grades that put them within the top quartile of their class at the schools from which the competitive program draws.
- A school district could give special consideration to students from neighborhoods selected specifically because of their racial composition and other factors. In the selection process, a district would treat all the students who live in the selected neighborhood the same regardless of their race.

Conclusion and Program-Level Recommendations

Secondary magnets and other application programs with selective admissions criteria were originally developed in MCPS to promote diversity and provide academically rigorous opportunities for students. Admissions to the programs is based on multiple criteria, including test scores, essays, report card grades, teacher and parent recommendations, and consideration of unique student characteristics, among others. However, qualitative and quantitative data suggest that test scores are a significant factor in the admissions process. This section provides the following key findings about the magnets and other application programs with selective admissions criteria in MCPS:

- Demand for magnets and other application programs with selective admissions criteria at the secondary level is high—overall approximately 1,350 students competed for 300 middle school magnet seats and 1,550 students competed for 530 high school magnet and application program seats in 2013–14.
- Magnet programs are not only popular, but they serve as a tool for MCPS to provide unique academic experiences for highly able and highly motivated students to learn within a cohort model.
- A review of academic data found that the implementation of selective magnet programs has limited effects on other schools in the district.
- MCPS uses a program-within-a-school model that houses magnet programs within larger school populations. This practice has caused perceptions of a divide between magnet students and local student populations. In the model, magnet students are separated into cohort groups for magnet classes and sometimes non-magnet classes, due to scheduling constraints. Additionally, the demographic characteristics of the magnet student population are different from those of the larger school populations which further

perpetuates perceptions of within-school separation of the groups. Overall, the magnet student population comprises lower proportions of Hispanic/Latino, Black/African American, and low-income students and higher proportions of White, Asian, and higher income students.

- The demographic differences in the two populations are caused, in part, by lower application and acceptance rates for certain segments of the MCPS population, namely for Hispanic/Latino, Black/African American, LEP, and low-income students. The lower acceptance rates for these subgroups—a factor that may also deter applications—suggest that there are areas for needed revision in the selection process.
- Lower application rates may also be due to different levels of parental awareness of the programs. Stakeholders stated that, although MCPS mails information on programs to all eligible students in English and Spanish, the district’s approach to communications requires parents to seek out additional information and be able and have time to delve into the complex information that is presented. As a result, information may not filter to all segments of the community equally, especially to low-income or non-native English speakers.
- The additional incremental costs for staffing and transportation associated with the magnet and application programs for the 2015–16 school year was approximately \$3,938,093. These costs include resources for testing and selection of students, district-level staff and program resources, school-based staff allocations, staff training, membership in recognized gifted and talented organizations, IB annual membership dues (for Richard Montgomery HS), office supplies, and local travel to support program implementation. The costs also include transportation for students using centralized stops on 21.82 additional bus routes.
- Research and benchmarking on magnet and selective application programs show that many school districts have opted to offer a combination of academically-selective and non-selective programs that meet the needs and interests of a broad segment of their student populations. Academic research suggests that non-selective magnet schools have a greater impact on promoting diversity than selective programs, and at the same time produce academic and social benefits for students.
- Academic research on selective magnet and application programs also indicates that the over-reliance on standardized tests in identifying students to participate in selective programs does not fully capture the wide ranges of intellectual capacities and abilities that are indicators of academic success. As a result, some school districts are following a practice used in postsecondary admissions of using non-cognitive factors, such as self-efficacy and persistence in admissions decisions. Additionally, several school districts are specifically factoring socioeconomic status into their selection process or utilizing a

model developed at the postsecondary level of using guaranteed admissions for a percentage of top academic performers at all feeder schools.

In light of these findings, MCPS should consider the following recommendations for the magnets and other application programs with selective admissions criteria:

- Work to address barriers to equitable access in the magnets and other application programs with selective admission criteria by revising Board Policy IOA to broaden the definition of giftedness to focus on identifying students who are highly able from all backgrounds, as stated in the section on elementary center programs for highly gifted students.
- Work to address barriers to equitable access in the middle and high school magnets and application programs by:
 - (a) implementing modifications to the selection process to focus these programs on selecting equitably from among those applicants that demonstrate a capacity to thrive in the program, through a process that includes use of non-cognitive measures and/or offers automatic admissions to the programs for students in the top 5-10% of sending elementary or middle schools in the district; and
 - (b) developing additional communication, outreach, and recruitment methods and tools that incorporate clearer messaging and community-based approaches that are designed to meet the needs and preferences of a broader segment of the MCPS community, including low-income families and non-native English speakers.
- Develop new and enhance existing practices for all magnet and application programs to follow in order to ensure that program and local student populations have meaningful social and academic interactions, such as expanded use of electives, non-instructional in-school time, and extracurricular programs.
- To the extent that MCPS decides to expand seat capacity for magnet programs at the middle and high school level to keep up with demand and increasing enrollment, the district should consider utilizing a wider variety of program models such as whole-school magnet programs and programs that incorporate student interest rather than rely primarily on academic criteria.