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Transmitting the Right Signals: The Continued Significance of Promoting College Entry  
to Urban Youth

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**Abstract**

The central purpose of this research project was to understand the signals that urban students of color believe deter or inspire them to pursue a four-year college education. The urban setting for this study was Denver, Colorado where the Denver Public School (DPS) system has a poor track record related to college access. Almost 80% of all DPS students are of color and recently less than 9% go on to complete a four-year college degree (Denver Public Schools, 2008). Therefore, this study sought to gain a better understanding of the signals that influence the college aspirations of urban students of color. The study utilized an adapted signaling theory lens to qualitatively examine the experiences of students of color enrolled in the DPS at three high school sites. The overall goal of the study was to develop a better understanding in order to suggest best practices for guidance counselors and college enrollment management practitioners seeking to improve access to college for students of color in the DPS system.

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Access to postsecondary education is a priority for state and federal policymakers as it not only provides socioeconomic equity but also promotes economic competitiveness (Hossler & Maple, 1993). Despite efforts by policymakers to improve college access, particularly for students of color and low-income students, the disconnection between policy and praxis continues to hinder substantial improvements to closing the postsecondary entrance gap. There has been an overall increase in postsecondary enrollment from 1980 through 2004, yet the gap between students of color and White students has expanded over the past two decades (See Figure 1). While policymakers attempt to attenuate this gap, the overwhelming majority of state and federal programs seeking to improve college access fail to account for the factors deemed critically important to improving college access. For instance, Perna, Rowan-Kenyon, Bell, Thomas, and Li (2008) pointed out that 90% of state and federal programs focus solely on financial aid. Yet higher education research has indicated that factors such as parental involvement, information access, rigorous K-12 curriculum, and culturally relevant programming impact college aspirations and enrollment beyond financial aid programming (Hossler & Stage, 1992; Hurtado, Inkelas, Briggs, & Rhee, 1997; Tierney & Yun, 2001).

### Percent of 18-24-Year-Olds Enrolled in Postsecondary Institutions by Race/Ethnicity

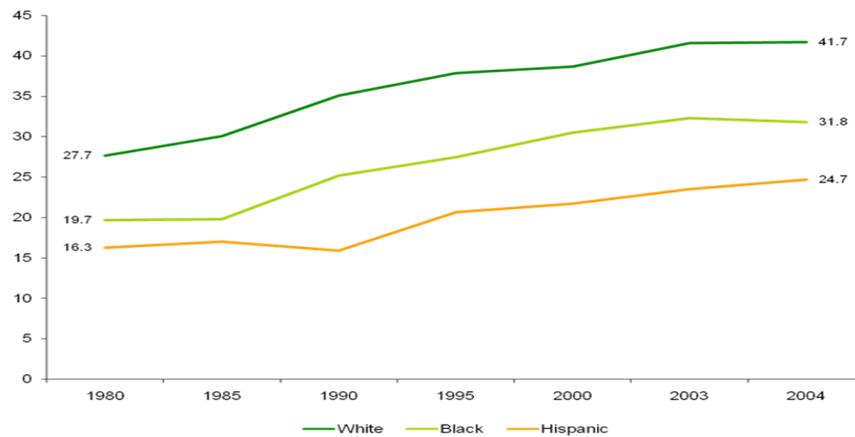


Figure 1: Percent of 18-24-Year-Olds Enrolled in Postsecondary Institutions by Race/Ethnicity. National Center for Education Statistics

According to empirical research, students form their college going aspirations early in high school (Hossler, Braxton, & Coopersmith, 1989). However, for students of color in urban school districts, the lower their family income, the poorer their prospect for gaining access to higher education (Astin, 1982; Perna, Rowan-Kenyon, Thomas, Bell, Anderson, & Li, 2008). This was the unfortunate reality in Denver, Colorado where 77% of students were racial and ethnic minority students and approximately 66% were eligible for a free or reduced lunch program in 2008 (Denver Public Schools, 2008). These statistics coupled with insufficient state and federal policy to improve college access demand a better understanding of the barriers faced by urban students of color and the signals and strategies for improving their access to postsecondary education. Thus, the central purpose of this study was to investigate how students of color enrolled in the DPS system identify and understand the signals that may deter or inspire them to pursue postsecondary education.

### Conceptual Framework

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According to social scientists, college choice is influenced by a plethora of factors, such as parental education levels and involvement, socioeconomic status, student and parent expectations, ethnicity, gender, and residency (Astin & Oseguera, 2004; Charles, Roscigno, & Torres, 2007; Hossler & Stage, 1992; Hurtado, Inkelas, Briggs, & Rhee, 1997; Perna & Titus, 2005). Therefore, it is imperative to consider the multiple facets that impact college choice when establishing or selecting a framework to inform access research. Within this study, we defined college aspiration as a student's desire to achieve postsecondary education. College aspiration is one dimension of college choice, the decision to attend a particular college. We viewed these two constructs as interrelated and layered, with college aspiration nested within college choice and college choice nested within postsecondary access. Guided by this notion, we sought to incorporate the multiple layers imbedded in the college choice process for students of color. We accomplished this by extrapolating a conceptual framework from Tuitt, Agans, Choudaha, and Krusemark's (2008) model of graduate student recruitment and Perna's (2006) student college choice model.

Tuitt, Agans, Choudaha, and Krusemark (2008) provided a model of graduate student recruitment based on signaling theory that focuses on structural and behavioral features of organizations and markets along with perceptions, characteristics, and behaviors of individuals to describe why universities select a particular candidate and candidates choose a particular institution. Nobel laureate Michael Spence's (1973) signaling theory suggested that communication occurs between institutions, the environment, and the students in the form of various signals that influence college going aspirations. Spence denoted that the observable attributes of a college applicant can

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either be immutably fixed or alterable. The alterable factors are analogous to items that influence college aspirations and are referred to as signals, while the generally unalterable attributes, such as race or sex, are regarded as indices. The Tuitt, Agans, Choudaha, and Krusemark model captures the multifaceted nature of college choice by accounting for the social, political, cultural, and external contexts that shape decision making. The model rests upon the following four components: a) environmental, b) personal, c) organizational design, and d) organizational behavior. The environmental tenant accounts for the transmission of signals and indices between the student and phenomena such as the labor market, related laws, and policy issues (i.e., affirmative action and need-based financial aid). Familial relationships and community social networks, such as peer groups and mentorship relationships, are represented within the personal integrant of the model. The organizational design segment encapsulates macro-level policies that impact the daily operations of an institution. A university mission statement, affirmative action policy, curriculum, and values would be captured within the organizational design model component. Finally, organizational behavior, the final dimension of the Tuitt, Agans, Choudaha, and Krusemark model represents the operational aspects of the organizations design. Signals can be derived from policies and initiatives such as scholarship programs, student support services, inclusive pedagogy, and hiring practices and from the day-to-day interactions of the institution.

Similarly, Perna's (2006) model which builds upon previous research by Hossler, Schmit, and Vesper (1998) provides four layers in which to contextualize factors that impact college choice. The first layer, Habitus, encompasses personal factors that relate directly to the student such as demographics, cultural and social capital, family income,

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and academic achievement. The second layer embodies school and community related factors that involve resource availability and structural supports and barriers. The higher education context, layer three, is utilized to explain how college choice is influenced by postsecondary institutions through mechanisms such as marketing and recruitment, location, and institutional characteristics. Finally, the fourth layer denotes the social, economic, and political context of college choice.

Since college choice is a complex interactional process where student signals/indices and institutional characteristics interact to influence the decision making process (Cabrera & La Nasa, 2000; DesJardins, Dundar, & Hendel, 1999), we utilized a combination of the Tuitt, Agans, Choudaha, and Krusemark's (2008) model of graduate student recruitment and Perna's (2006) model of college choice to construct a framework as they each provide multilayered and integrated approach to examine a complicated and multifaceted problem, college access for students of color. The proposed model for the study denotes that students' college going aspirations are shaped by interactions with four primary signal sources—environmental, institutional-high school, institutional-higher education, and the personal, which encompasses the immutably fixed indices proposed by Spence (1973) (See Figure 2).

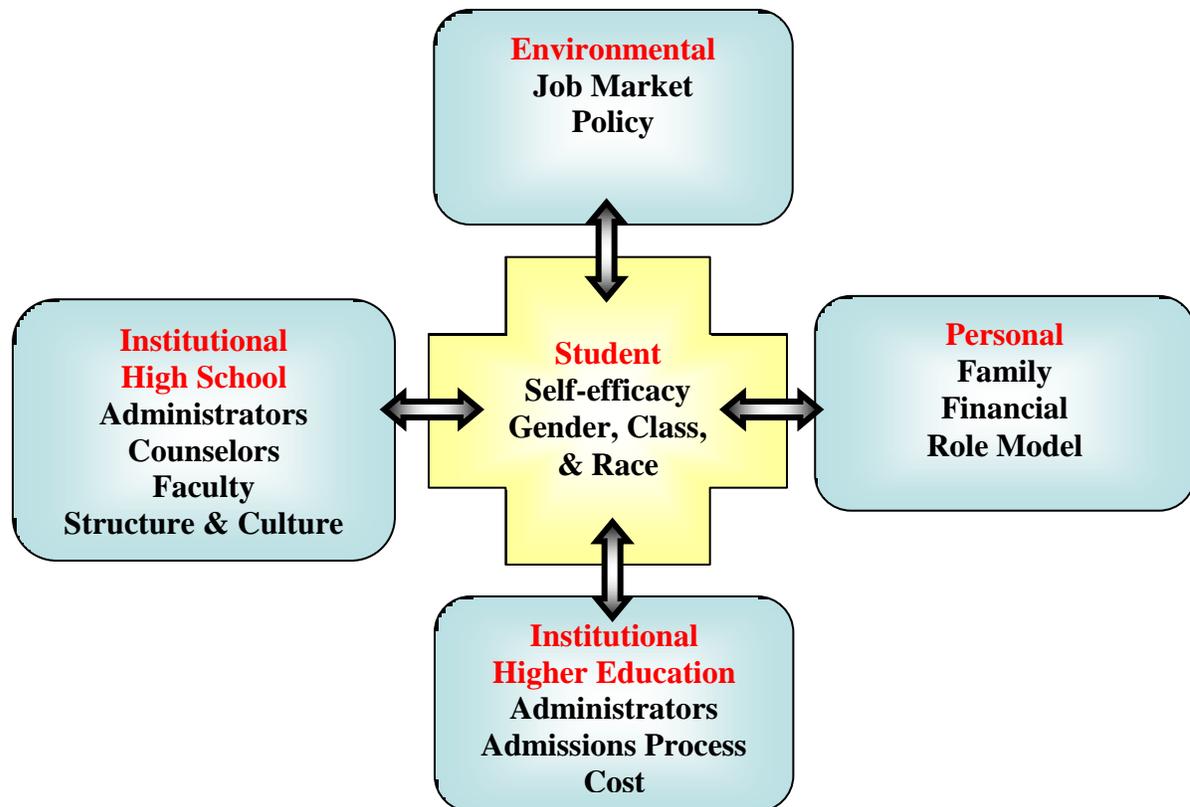


Figure 2. Conceptual model for interactions between student and signal sources

The environmental and institutional higher education signal sources reflect how policies such as merit-based or need-based financial aid, tuition costs, and admissions related processes, among other factors, effect college choice. For example, research has shown that tuition costs have a negative correlation with college choice and demonstrates that in some cases where merit-based financial aid programs have widened the gap in college attendance between African American and White students and between students from low and high-income families (Heller, 1999; Dyrarski, 2000). Farmer-Hinton (2008) asserted the importance of considering the social networks of support and guidance for students of color within school and neighborhood settings. Even further, findings from the Stanford University Bridge Project demonstrated that access to college preparation

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information and policy was restricted along racial, ethnic, income, and curricular tracking lines (Venezia & Kirst, 2005). By assessing and understanding signals from the personal and institutional high school realms, we attempted to capture the disparities asserted by Venezia and Kirst and to understand how the social networks discussed by Farmer-Hinton may impact college choice for DPS students. Finally, we sought to understand how Spence's (1973) indices, such as race, interact with the signals from environmental, institutional, and personal spheres of influence thus impacting college choice. Guided by a model grounded in and supported by research, we sought to investigate the signals that promote or hinder the college choice process of urban students of color and to build upon current research to enhance and expand knowledge regarding best practices and areas of improvement for increasing postsecondary access and attainment.

### **Research Design**

A majority of research in the area of college choice is quantitative, leading to a gap in the literature and our investigation of the experiences of urban students of color through their own stories and words, was facilitated by a qualitative research design.

### **Setting**

Through a partnership with the Denver Scholarship Foundation ([www.denverscholarship.org](http://www.denverscholarship.org)), we identified three high schools in the Denver Public School system to serve as data collection sites for this study. Each high school, Lincoln, Montbello, and South, has over 58% of the student body comprised of students of color and each report a high percentage of students who receive free or reduced lunch (Denver Public Schools, 2008).

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Table 1. High school interview sites with percent of racial and ethnic representation and percents of free and reduced lunch recipients

School Name	Ethnic population served	% on free or reduced lunch
Lincoln	87% Hispanic	80%
Montbello	57.4% Hispanic 34.4% African American	58%
South	38% Hispanic 20% African American	44%

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Source: Denver Public Schools, 2008

### Methods

In this study, we conducted focus groups and individual interviews with DPS high school students of color (18 years or older) in their senior year at the aforementioned three high school sites. Qualitative interviewing was appropriate for our research as the purpose of our study was to understand students' perspectives and experiences (Patton, 2002), specifically, their college going aspirations. We conducted six focus groups in a semi-structured format taking into consideration that the facilitation and interaction among participants would be guided by our interview protocol (Patton, 2002). Prior to engaging in the data collection process we developed and piloted an interview protocol (See Appendix A) to guide the focus group and individual interviews.

In order to account for students with different levels of college access information we sought to identify students who either had a high amount of contact or low amount of contact with high school college preparatory programs. High exposure to college preparatory programs was defined as student participation in the Denver Scholarship Foundation (DSF), Advancement Via Individual Determination (AVID), or other program, while low exposure was defined as no participation in any organized college preparatory programs. Accordingly, at each of our three school sites one focus group was for

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students who had high levels of interaction with college access programs and one was held for students with low levels of interaction with college access programs. Each focus group had eight to ten student participants and lasted 60-90 minutes.

Once the focus groups were concluded, we invited a sub-set of students to participate further in individual interviews. Three to five students from each focus group participated in individual interviews, lasting 30-45 minutes. Our individual interviews were conducted in an informal conversational format as to provide flexibility and responsiveness to individual differences (Patton, 2002). Four doctoral students conducted the focus groups and individual interviews. In total, we were able to collect over 10 hours of focus group data and more than 20 hours of individual interview data. All focus groups and individual interviews were recorded and professionally transcribed.

Data analysis proceeded with multiple reviewers to ensure triangulation and verification of codes and classification. Creswell (2007) notes that triangulation is a type of validity for qualitative research via the comparison of data sources, methods, and researchers. Data analysis began with a meeting of the research team to discuss the themes that arose in each of the focus groups they attended and an initial list of codes was developed. The interview team cross-analyzed the data so that each transcript was read and coded by three researchers. Then, the team reconvened to review the separate analyses as a group. During this process, codes were further defined and new codes were added that had been neglected during the first generation of codes. Each transcript was reviewed a second time by three researchers with the new code list and the final research team meeting solidified codes and a collective understanding of the categorization of the focus group data.

### **Discussion and Findings**

In this section, we present the findings as they relate to the four components of our model – personal, institutional high school, institutional college, and environmental. The two areas that had the most impact on students’ college aspirations were the personal component and the institutional high school component, while the institutional higher education and environmental components transmitted the least amount of signals.

#### **Personal**

The findings from our study support the importance of parental involvement and encouragement for postsecondary matriculation, among the personal signal sources. Parents had the most influence of all individuals in contact with students interviewed within this study. Most students cited parents as the driving force in encouraging them to apply and attend college. For instance, one female student stated the following when responding to a question regarding individuals in their community who talk about going to college:

Because they are the ones that are on top of us in a good way saying, “Apply, apply, it’s important,” probably it leads through to the parents, because maybe they didn’t get the chance to do it. So, they are trying to push you to get the test, so you can move forward ...

Your parents, they might give you examples like how they couldn’t work or afford to do it, because they had to work to support the whole family, though it’s something that you have to do. It will be good if you tried it.

Another student responded to the same line of questioning the following way:

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The reason that I decided to go into college was because my parents would always kind of push me into it. They were telling me that I had to do something, that I didn't really want to go into college, I never thought about going into it, until my junior years that I took courses from the [xx] community college and I liked it. That's when I took my med prep, and my parents encouraged me more. So, I think it was more my parents than anyone else that influenced me.

Although parental encouragement was common among participants in our study, many of the students' parents lacked knowledge about the college-going process to pass onto their children. Consequently, these students had to rely on their own social capital, which was limited to high school teachers, counselors, staff, and other family and friends for information on navigating through the educational pipeline.

Higher education literature indicates that parental involvement and encouragement are some of the most salient factors that impact college choice for students across racial/ethnic and socioeconomic lines. A study conducted by Horn and Nuñez (2000) illustrated this point as they analyzed data from the National Educational Longitudinal Study (NELS) 1988 and confirmed the importance of parental involvement and school support in preparing students for college. They found that parental involvement in curricular decisions and college planning activities were associated with higher college enrollment rates even after controlling for parents' income and education level and for students' mathematics enrollment and level of college qualification.

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Furthermore, Perna and Titus (2005) had similar findings when they used the multinomial extension of hierarchical linear modeling (HLM) to determine the relationship between parental involvement and college entry after controlling for other student-level predictors of college enrollment and school-level structural characteristics. Additionally, they sought to determine how parental involvement might impact enrollment rates by race/ethnicity. Perna and Titus found that the odds of enrolling in either a 2-year or 4-year college increased with the frequency with which the parent discusses education-related topics with the student, contacts the school to volunteer, and initiates contact with the school about academics. In the same study, they also found that a student's friends' postsecondary plans and the ways in which parents subtly structured a student's peer group were also related to college enrollment.

### **Institutional High School**

Investigating the impact of signals that promote or hinder the college choice process of urban students of color and originate from high school constituents and structures, we asked students at DPS schools to explain who at the school influenced their decisions to attend college and in what ways. Findings from our study indicate that there are several individuals, counselors, teachers, and non-affiliated staff who transmitted signals to students regarding college attendance. For example, the DPS students had a clear understanding of the importance of academic rigor and obtaining high grades and test scores. Additionally, these students were cognizant of how admission requirements varied by institution. Students cited the University of Colorado and the University of Denver as schools that require high academic achievement in comparison to other

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Colorado colleges and universities. At the high school institutional level, students noted differences among DPS high schools in levels of college preparation. One student stated:

Lincoln themselves focus more on college than any high school I know of.

Here at Lincoln, we have so much help to offer [xxx], because I came from a different high school, and over there, they really don't have all that... Here, I mean they have college courses.

In this particular case, this student received signals to pursue postsecondary education from Lincoln high school because they offered resources and support for this endeavor.

Another structural signal surfaced in the data. Students mentioned that the high school academic expectations and achievement can impact students' perceptions of the collegiate academic experience. For example, one student testified about the high school coursework load and its impact on his college perspective:

I think the amount of homework and like pressure they [students] get in high school because like when you think about college you are like, oh, you get more homework and you know it's harder. And they are like you can't do your homework here at high school, like it kind of destroys the whole dream of going to college.

This student was expressing how difficulty with high school level coursework impedes a student's motivation to pursue higher education. Therefore academic progress and feedback has the potential to send negative or positive signals regarding a student's ability to succeed in college.

The findings from this study support the current research that indicates the importance of high school staff in promoting college entry for youth of color. DPS

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students received signals from counselors, teachers, and non-affiliated high school staff members that either encouraged or discouraged them from preparing or applying to college. Many students professed that teachers and/or counselors have supported them in their endeavor to acquire postsecondary education. Equally, the Denver Scholarship Foundation (DSF) Future Center, an on-site location equipped with staff, computers, and resources to assist students in applying for college, also played a vital role in providing students with college related resources, information, and support. Some students stated that their college application experience would have changed for the worse if it were not for the intervention of the DSF Future Center staff. One student asserted, “because I mean if you don’t hear it from the teacher, you hear it from, like the Future Center.” When asked who provides information regarding college, some students stated that teachers played a vital role, yet one student pointed out that only some teachers actually provide support and assistance to college-bound students by stating, “some of the teachers. Let’s be clear about it some of the teachers. Some of the teachers [care] and some don’t care.” Additionally, one student commented on the reactive nature of college-going support at his school by stating that, “Yeah just nobody really comes to you and tells you what to do. Unless you go and tell them you want to do it.” This demonstrates that those students who seek out information and resources are served to some extent while other students may be missing vital information and assistance.

Several students mentioned college preparation programs such as DSF, AVID, Women in Engineering, and the Rotary Club as resources that helped them prepare by contributing positive signals toward college entry. One student stated, “I am in probably four or five different clubs and organizations based on going to college. So probably

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since I got out of fifth grade I have been pulled behind going to college.” For many students, college preparation programs and organizations submerged students in a college-going atmosphere and provided them with hands on experience and preparation for entry into the academy.

It is not surprising that the role of high school staff was instrumental in transmitting signals to students within the study. Research indicates that the K-12 environment with regard to fiscal and academic resources, curriculum, teachers, demographics, and geography have a deterministic effect on college access for high school students (Martin, Karabel, & Jaquez, 2005; Perna, Rowan-Kenyon, Thomas, Bell, Anderson, & Li, 2008; Wolniak & Engberg, 2007; Yun & Moreno, 2006). For example, Yun and Moreno (2006) conducted a study examining K-12 school related college access disadvantages disaggregated by ethnicity and found that schools with a high percentage of African American and Latino students in California tend to have higher poverty rates, lower teacher certification, and lower advanced placement course offerings than predominately Asian and White schools. The factors analyzed by Yun and Moreno hinder postsecondary entry and completion. Similarly, a study by Martin, Karabel, and Jaquez (2005) demonstrated that high school segregation negatively affects college access in the state of California for minority students. Furthermore, Adelman (1999) contended that the impact of a rigorous high school curriculum is far more pronounced and positively correlated for African-American and Latino students than any other pre-college indicator. Adelman further asserted that many minority students, especially those who live in rural areas, do not have the opportunity to partake in such a rigorous curriculum.

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The availability of information related to the college admissions process is critical to college enrollment, thereby making the role of high school counselors, teachers, and staff working with students of color essential to students' decisions to pursue postsecondary education. In addition to a rigorous college preparatory curriculum and a college-going culture within high schools, Corwin, Venegas, Oliverez, and Colyar (2004) cited appropriate counseling and resources committed to advising college-bound students as a reflection of factors critical to postsecondary entry. Low-income students and students of color, like those in DPS, need guidance from teachers and high school counselors regarding the process of preparation for postsecondary education, yet budgetary constraints, alarming counselor-to-student ratios, and in some cases a lack of caring faculty and staff hinder students' ability to successfully navigate through the postsecondary educational pipeline (Corwin, Venegas, Oliverez, & Colyar, 2004; Freeman, 2005; Lee & Ekstrom, 1987).

Within the institutional high school component of the signaling model, the students noted teachers and counselors who provided information and encouragement to attend college. From the teachers and counselors, students received information about the academic expectations of high school to prepare for college and the increased level of academic work at the college level. Teachers and counselors also provided encouragement about succeeding in college, and, in the case of college preparatory programs, a college-going culture.

### **Institutional Higher Education & Environmental**

The institutional higher education and environmental contexts had the least significant impact on students' perceptions of college choice and demonstrated the

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greatest differences between those students who had high exposure to college preparatory programs and those students with low exposure. The main signals students gained from the higher education and environmental components of the model were that college was beneficial to their futures, involved more academic rigor than what they experienced at the high school level, and was very expensive. Additionally, students' knowledge of federal and state level financial aid programs, state level high school graduation requirements, and college entry requirements was limited at best. For most of the students within the study, their understanding of financial aid was in the context of scholarships, both need-based and merit-based. Many of them had heard of the Free Application for Federal Student Aid (FAFSA) from their high school counselors in the sense that it served as a form that they needed to fill out. When asked specific questions about loans versus grants, students' knowledge was limited in scope. A comparison of responses from students with high exposure to college preparation programs and students with low exposure to college preparation programs demonstrates student knowledge surrounding federal programs and the source(s) from which they retrieved such information (See Table 1).

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Table 1: Comparison of high exposure and low exposure to college preparation programs on financial aid questions.

High Exposure to College Preparation	Low Exposure to College Preparation
Interviewer: Are you aware of the Federal Financial Aid programs available to you to attend college?	Interviewer 1: Do you know about federal financial aid?
Tyrone: Yeah, I'm aware of them. Like the FAFSA? You got to apply for that pretty soon here next month. My parents are stressed about that one all the time too.	Student 1: Not really.
Interviewer: So, you've been receiving support for completing the form? Has anyone, classmates, mentor, teacher, counselor in your high school talked to you about college? If so, what did they say about college and what do you think?	Interviewer 2: OK. Are you aware of Federal Financial Aid programs available to you to attend college?
Tyrone: Well, all my teachers have. I only have one counselor, Ms. [xxxx] right over there, he talks to me about it all the time. Mr. xxxx when he was here, and Mr. [xx]. They've basically said, if this is what you really want to do after -- I was like, what everybody wants you to do when you get out of high school, is to go to college.	Jazmine: Not really.
	Interviewer: Have you completed FAFSA yet?
	Jazmine: No.

The comparison of student responses to financial aid questions demonstrates the differences in knowledge between students who have been participating in college preparation programs and those who have not been participants in college preparatory programs. Students who have participated in college preparatory programs are more sophisticated in their college perspectives and information, while students who have not participated in college preparatory programs know that they want to go to college, or should go to college, but lack the information necessary to enroll and persist in postsecondary education. On the issue of financial aid alone, differential knowledge

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could lead directly to a difference in college enrollment (Hurtado, Inkelas, Briggs, & Rhee, 1997) for the two groups of students.

Colorado has state level high school graduation requirements that apply to all high schools within the state. The student participants within our study had limited knowledge about the existence of such requirements and those who were cognizant of them garnered their information from staff members of college preparation programs, like TRIO or AVID, or from their high school counselors. A few students stated they had to seek out this information because it was not presented to them in a timely fashion. For instance, many students mentioned not receiving information related to state level high school graduation requirements until their junior year of high school. Based on the lack of knowledge surrounding federal and state level tools to assist them in the college-going process on the part of some students, it appears that this information was not readily available to all students or some students were unaware of how to access such information. Students attained information regarding Colorado's state level high school graduation requirements differentially with regard to their college preparatory exposure (See Table 2).

Table 2: Comparison of high exposure and low exposure to college preparation programs on high school graduation requirements questions.

High Exposure to College Preparation	Low Exposure to College Preparation
Interviewer 1: Do you know about the State of Colorado High School Graduation requirements, first of all, yes or no?	Interviewer: Are you aware of the state, of the State of Colorado high school graduation requirements?
Male Speaker: Yeah, some of them.	Student: I believe so. I don't know what they are but I know I am meeting them. I'm in two classes that I have to use to graduate, that's it.
Victoria: Some.	
Interviewer 1: Some, OK. If so, how did you gain your awareness?	Interviewer: And how do you know that

Male Speaker: Probably because I took the initiative to go ask my counselors. From here, the Future Center, Cynthia, the old lady that works here, but also -- well here they offer a lot of programs that always -- they have posters everywhere. Then, probably because we have very good counselors, that they look you up, and then they tell you what your requirements are, and if you need to get those to graduate? They ask you do you want to go to college, what do you want to do, and then they tell you what class you need to take and all that.

Interviewer 1: OK, that's good.

Victoria: From mostly the counselors, I go to college prep like every two weeks, and they tell us what we need to do, and we got to get this from our counselor and we got to get this done, and they give us a list to complete.

Interviewer 2: Are you aware of the State of Colorado High School graduation requirements, and if so, how did you gain your awareness, and did the requirements help you prepare for high school graduation?

Tyrone: I found this out from my counselor, freshman year. Their information helped me a lot, because it lets you know that you can't be messing around in high school. You got to pass all your classes and stuff like that.

Another student: I got the information. [xx] students who can't get in. I see that like they are going to be like fifth year seniors and not even graduate at all. So, I felt that that information taught me a lot to get ready for my senior year.

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you are meeting them, where did you get that information?

Student: My counselor, I bother him a lot.

Interviewer: OK and when did he start talking to you about what you had to take it mean what is required for you?

Student: [xx] I was in his office like almost every day last year in this semester.

Interviewer: OK so like your 11<sup>th</sup> grade year its when..?

Student: Kind of, well yeah, because [xx] is really bad about telling you what you need to graduate because if they would have told me [xx] where I needed to graduate, I would have taken them when I was a junior so I wouldn't have to worry about them now.

The students quoted above indicate the importance of college preparatory programs keeping them abreast of state level policy as it relates to high school graduation. Almost all of the students with high levels of exposure to college preparation program staff were cognizant of the state's high school graduation requirements while only some of the students with limited to no exposure were informed. For example, the student with limited exposure to college preparation programs was aware of the existence of the high school graduation requirements but was unsure of what they actually were. The student also complained the he had to press his high school counselor for the information that he did not receive until his junior year of high school.

Additionally, the signals transmitted from colleges and universities were more related to the type of institutions to which they choose to apply and did not necessarily impact their decision to attend college generally. Students utilized college visitation days and marketing materials to get a sense of whether or not they would be accepted into an institution, whether they would fit into the environment, and to address logistics such as specific program and degree offerings. When we inquired about the signals students received from institutions of higher education, students derived much of their information from college representatives who visited their high school, college campus visitations, and marketing materials, however there was again, an evident difference between those students enrolled in college preparatory programs and those who were not.

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Table 3: Table 2: Comparison of high exposure and low exposure to college preparation programs on institutional higher education questions.

High Exposure to College Preparation	Low Exposure to College Preparation
Well, I toured that school [the University of Denver], and I love the programs over there. I like the business program they have, and it'd be really a good school to go to, and my favorite tour.	College friends are good because you get to ask questions about their school, how much did they attend, so I think [xx] what you have to pay, what majors, programs do they offer and what kind of clubs do they have and stuff like that...and I think the brochure.
Well, it just seemed like the classrooms and how the professors give their speeches and lectures, it's really great just to go to a good school like that and know you're getting the right information and the right training you need, and get a good profession.	

More of the students who had no exposure to college preparation programs had not visited a college campus, as compared to those who were exposed to a college preparatory program. Therefore, the student who had limited contact with the preparatory programming relied on information from his friends within his social network and marketing materials sent to him from colleges and universities.

While there were fewer signals overall being transmitted from the institutional higher education and environmental contexts, there were some notable differences between the groups of students with high exposure to college preparatory programs and low exposure. Specifically, students with high exposure were more sophisticated in their understandings of financial aid, high school graduation requirements, and the college campus experience as they tended to rely on friends and family without the explicit knowledge of college admission.

## **Implications**

### **Exposure to College Preparation Programs**

Within the study we interviewed two types of students; those students who had limited to no contact with college preparation programs and those with high exposure to such programs. The findings derived from the study were similar within both groups except that students with limited exposure to college preparation programs were much less knowledgeable than their well connected counterparts. The students with limited contact relied on anecdotal information regarding the college-going process from their peers and relatives. Relying on such information can potentially disadvantage these students because their information could be faulty and limited depending upon the source's knowledge and experience with the college entry process. Such a situation becomes more apparent when one considers that the students who participated in the study were from families who lack the social and cultural capital to fully equip their children with the information needed to successfully navigate through the educational pipeline. Conversely, the students who were well connected were privy to information regarding high school graduation requirements, college entry requirements, participated in honors and Advanced Placement courses, and had visited college campuses at higher rates than students who had limited to no contact with college preparation programs.

Our findings also indicate that in the wake of continuing efforts to increase college access for low-income and underrepresented students there exist missed opportunities to increase the impact of these efforts in both quality and quantity. Our study reinforces existing data regarding the influence of college preparatory programs; however we also recognize that these programs, while valuable, only reach a limited

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amount of students. For instance, a study by Adelman (2000) indicated that college preparation programs at the national, state, local, and institutional level only impact a small number of students with no more than 11.4% of African American and 5.3% of Hispanic students participating in such programs. Therefore, a large percentage of students who necessitate college admissions assistance are deprived from such benefits mainly due to the high costs related to the type of college preparation services we currently provide. For those students left to figure out the college entry process on their own or through their own social networks, the quality of the information garnered could be extremely limited in scope and accuracy.

Assuming, therefore, that not every student will have the opportunity to participate in college preparatory programs, and that students of color will have disproportionately fewer opportunities to enroll in college preparatory programs, what does this research tell educational advocates about transmitting the right signals?

### **Parents' Encouragement and Access to Information**

Our findings indicate that parental encouragement and involvement is effective in influencing students to attend college yet, in the case of many underrepresented students, its impact is stifled by a lack of experience and information both vital to navigating an educational pipeline with multiple layers and facets. Horn and Nunez (2000) note specifically that for first generation college students, because “they cannot benefit from their parents’ experiences in preparing for and applying to college, they may be at a distinct disadvantage in gaining access to postsecondary education” (p. 81). Therefore, while positive signals were transmitted to students via their parents in our study, the motivation to pursue college that results is merely the beginning of the foundation needed

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to gain access to postsecondary education. Accurate, timely, and relevant information is needed to assist students with higher education attainment.

Horn and Nunez (2000) recommend getting college preparatory information to parents and students early, beginning in middle school so that students and families are ready to enroll in algebra in eighth grade, which is a strong predictor of future college enrollment. Horn and Nunez also recommend supporting parents who do not have college experience in an effort to improve the chances of first generation students going to college. Although, Horn and Nunez (2000) do not discuss who should be distributing information and support to first generation families, Venezia and Kisrt (2005) recommend that higher education take the lead and Perna and Titus (2005) implicate the high schools. Perna and Titus, also noting the importance of parental involvement in college enrollment, advise that parents are drawn into the college experience by both schools and college preparatory programs. Beyond just inviting parents to be a part of their student's experience, Perna and Titus suggest creating situations that promote the specific types of involvement that support college enrollment including parent and student discussions of educational aspirations and parent contact with the school about volunteering and academics. Additionally, Perna and Titus note that supporting parents in their encouragement of their own students could also influence the overall peer cohort by increasing the social capital of students' and parents' communities.

### **High School Teachers, Counselors, and Culture**

The findings from our study at the institutional high school level suggest that the signals a student receives related to how to gain access to college can be delivered as either a positive or negative depending on the college-going environment of his/her high

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school. The high school type, structure, culture and the adults entrusted with supporting these institutional features play a significant role in shaping the views of students regarding college attendance. Martin, Karabel, and Jaquez (2005) were able to predict 80% of the variance in college admissions in California based on structural high school information such as racial composition, urban or suburban location, total enrollment, and socioeconomic indicators. Short of reorganizing state high school systems or redistributing educational funding, Martin, Karabel, and Jaquez recommend increased outreach from institutions of higher education and a shift in admissions policies away from standardized testing and in favor of class rank to account for structural high school differences.

High school educators should keep in mind that the manner in which they communicate academic progress and feedback has the potential to send negative or positive signals regarding a student's ability to succeed in college. High school environments that provide opportunities for students to acquire information related to the college admissions process are more likely to signal to urban low income students and students of color that getting into and succeeding in college is an achievable goal. Corwin, Venegas, Oliveras, and Colyar (2004) note that urban high schools face overcrowding and insufficient counselor support for students. Having too many students leads to the impression that counselors only help certain students and become "gatekeepers," encouraging some students to pursue college and necessarily neglecting others due to high advising loads. Additionally, the situation of having too many students to advise often leads to a triage approach to college counseling, where the students who are immediately applying to college get assistance, even though, by the senior year it is

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often too late for adequate college preparation. More structured counseling, beginning college counseling early in students' academic careers, teaching students and parents about positive relationships with counselors, and more resources devoted towards college counseling are some ways to alleviate the lack of college counseling in the school setting. Further, many students have relationships with and talk to teachers about college, however, teachers are rarely equipped with the information and time to support many students in their college pursuits (Venezia and Kirst, 2005). Counselors and teachers make a difference in students' college plans and educational systems need to support the work of counselors with the appropriate structure.

High school environments that hold students to high expectations provide the support that can increase students' chances for academic success. Additionally, Venezia and Kirst (2005) warn access supporters about the perception that getting in is the hardest part. Instead, it should be clear to students that a rigorous high school curriculum is preparation for increased academic challenge once he/she moves onto college.

### **The Role of Higher Education in Outreach**

Finally, students within our study seemed to be less impacted by both the institutional college and environmental level signals. Within this study, students' knowledge related to federal, state, and higher education institutional tools and requirements was highly dependent upon high school counselors and, in many cases, college preparation program staff members. It was also clear that students that had the most social capital were at a clear advantage in understanding the necessary steps to attaining postsecondary education.

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The findings of this study have implications for educational leaders and policy makers at both the K-12 and postsecondary education levels. Because our findings suggest that students received most of their signals from parents, family, high school counselors, and teachers, resource allocation and policy formation and modification might be focused on these constituents. Our findings indicate that current models at the high school level involving staggering counselor to student ratios and college preparation programs that impact a limited number of students in need of such services is inadequate for eliminating college entry stratification along racial and socioeconomic lines. Furthermore, new ways of interacting with and equipping parents with the information necessary to help their children enter the college of their choice is also vital to closing the gaps in college entry. Venezia and Kirst (2005) stress the importance of higher education institutions supporting parents and students in their college aspirations, as high schools and colleges have a shared interest to increase college applications and college readiness. Also evident in this research is the value of campus visits leading to the possibility of bringing students and families to campus to provide group-specific college counseling, academic readiness and application information, and exposure to the on-campus people and climate that facilitate the college choice process.

Factors for institutional consideration in support of increased college access include shifting admissions policies (Martin, Karabel, & Jaquez, 2005), campus climate assessment and intentional admissions counseling (Elam & Brown, 2005), and interventions to support campus diversity (Bresciani, 2003) in order to communicate inclusive initiatives to perspective students of color and their families.

### **Conclusion**

The findings from our study confirm current literature that asserts the importance of parental encouragement and involvement, the vital role teachers and counselors play in impacting student college choice and preparation, and the on-going importance of college access programs as students received most of their signals from these entities. Students from our study and their knowledge of and perceptions about the college going process were impacted most significantly by their parents, family members, high school counselors, and teachers. Each of these constituents is represented within the personal and institutional high school dimensions of the conceptual model framing this study. Furthermore, students' participation in college preparation programs proved to be beneficial as these students were more versed in their understandings of the requirements and tools necessary to enter the academy.

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### **GROUP INTERVIEW GUIDE**

1. Introduction by researchers about purpose and protocol. Emphasize that participants are the experts.
2. Introduction by participants.

#### **A. Background**

1. What is it like to be a student here? How do you spend your time at school?
2. What do you know about college?
3. What kind of students go to college?
4. How did you learn about college?

#### **B. Questions to identify personal factors (i.e. family, peer groups, etc.) that can potentially influence college attendance and institution choice:**

1. What do you feel are the most important factors considered by high school students in choosing to attend or not to attend college?
2. Why do you think high school students choose to go or not go to college?
3. Who in your community talks about the importance of going? How is it discussed?

#### **C. Questions to identify environmental factors that can potentially influence college attendance and institution choice:**

##### Programs:

1. Are you aware of any in-school programs that help students get into college? (AP, IB, Honors)
2. Are you aware of any programs outside of school that help students get into college? (Bridge Project, Gear Up, Princeton Review and Kaplan)
3. How did you learn about these programs and how has it influenced your thoughts about going to college?

##### Tests:

4. What do you think about standardized tests such as the ACT/SAT/CSAP?

##### Costs:

5. How much do you think college costs? How does the cost of going to college impact your decision to attend college or a particular college? (follow-up: ask about different institutions in CO like DU, CU-Boulder, Metro, Community Colleges)
6. What do you know about the federal financial aid programs (FAFSA)? How does this impact your desire or ability to attend college?

##### Career Aspirations

7. What are your plans after high school?

**D. Questions to identify high school institutional factors that can potentially influence college attendance and institution choice:**

1. Has being at this school influenced your decision to attend college? (teachers, administrators, counselors, peers) Who talks about the importance of going to college in your school? How is it discussed?
2. How many people in this school will go to college? Why do you think some decide to go while others do not?
3. Whose responsibility is to prepare you to attend college?
4. How much time do you spend at school and how much of it is academic?

**E. Questions to identify higher educational institutional factors that can potentially influence college attendance and institution choice:**

1. What are colleges looking for in prospective college students?
2. What type of interaction have you had with individuals associated with college (admission counselors, coaches, alumni, etc.)? What did you learn about college through those interactions? Has this played a role in your decision to attend or not attend college?
3. Have sports or any other extracurricular like theater or music played a role in your college decision process? If so, how and why are sports or extracurricular activities important?
4. How have you gained information regarding college (i.e. television, internet, campus visits, etc.)? Based on the information you received, what messages and/or images come to mind and how does this relate to you, if at all? Do you like or dislike what you have seen, heard, or experienced? Why?

**F. General Closing:**

1. Share data on Denver college going rates and ask for participants' thoughts
2. Has personal factors like race, gender, class influenced your decision to attend college and/or a specific institution? If so, how?