A Review of the College Access Literature

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Abstract

Since the 1960s much research has been done within the college access field in an attempt to isolate the key factors that either facilitate or hinder an individual's access to higher education. This review highlights the college access field of research that focuses on low socio-economic status (SES) students. The review is divided into two sections: high school students' access to college and college retention. At the high school level, the most powerful factors related to college enrollment for low-SES families are (1) measured academic ability, (2) adult support in the college search and application process, and (3) knowledge of financing strategies. Research focusing on college retention is murkier. For example, it remains unclear whether community colleges divert low-SES students from Bachelor's Degree attainment or provide needed and affordable access. Additionally, although postsecondary attainment also encompasses a wider range of possible "successes" than high school such as Associates, Bachelor's, and Master's Degrees, the majority of research is directed toward students who desire to attain a Bachelor's Degree and attend four-year institutions. Research indicates that the most important factors in college retention are academic integration and social integration into the college. I conclude the review with a discussion of the gaps in the current literature and research questions critical to ISAC.

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Figures, Tables, and Graphs

Introduction

College access research naturally focuses on high school, where predictive factors and decisions appear to have the greatest effect on college access and success. First, students who wish to attend college must have a strong academic foundation. Second, social factors are important to the college decision process including: the student's level of social capital, peer support, parental support, and aspiration levels. Third, college bound students require knowledge and guidance about the college application and decision process. Finally, knowledge and availability of financial aid influences whether and where students go to college.

Students from low socio-economic status (SES) families are at a severe disadvantage in all four of these areas. Low-SES students are the least likely to develop a strong academic foundation while in high school. This academic deficit makes college enrollment and graduation unlikely. While they have strong aspirations for college, low-SES students are frequently unaware of what skills are needed for entrance into and success within the college environment. Low-SES students also needed the guidance of a knowledgeable adult when navigating the college pipeline, yet are frequently doubly disadvantaged. First, they frequently cannot rely on friends and family for help as their family members frequently have no experience with college. Second, low-SES students are concentrated in schools that are least capable of providing them with a helpful, knowledgeable adult. Finally, financial aid makes a large difference in a student's decision to apply for, and remain enrolled, in college. However, studies have shown that all high school students and their parents are misinformed and confused about how financial aid works and how to pay for college (ACSFA 2002; Burdman 2005; De La Rosa 2006; Dynarski 2002; Dynarski & Scott-Clayton 2006; Horn et al. 2003; Ikenberry & Hartle 1998; King 2004). Moreover, because the financial aid application process is so complicated, students most in need

of aid typically never apply for financial assistance. The financial aid system is also extremely

poor at adjusting to changes in a student's situation. All of these reasons combine to prevent

many low-SES students from entering college or from succeeding in college if they do gain

entrance.

Researchers have been studying issues of college access for many years and the field is

extremely diverse. This literature review, while drawing on some older work, focuses on the

most recent literature in the field. The literature review is divided into two broad sections. The

first section, illustrated in Figure 1, addresses high school factors related to college access, such

as academics and applying for financial aid as a senior in high school. The second section

addresses the factors associated with college retention and persistence.

High School Factors and College Access

Figure 1: Section I Map
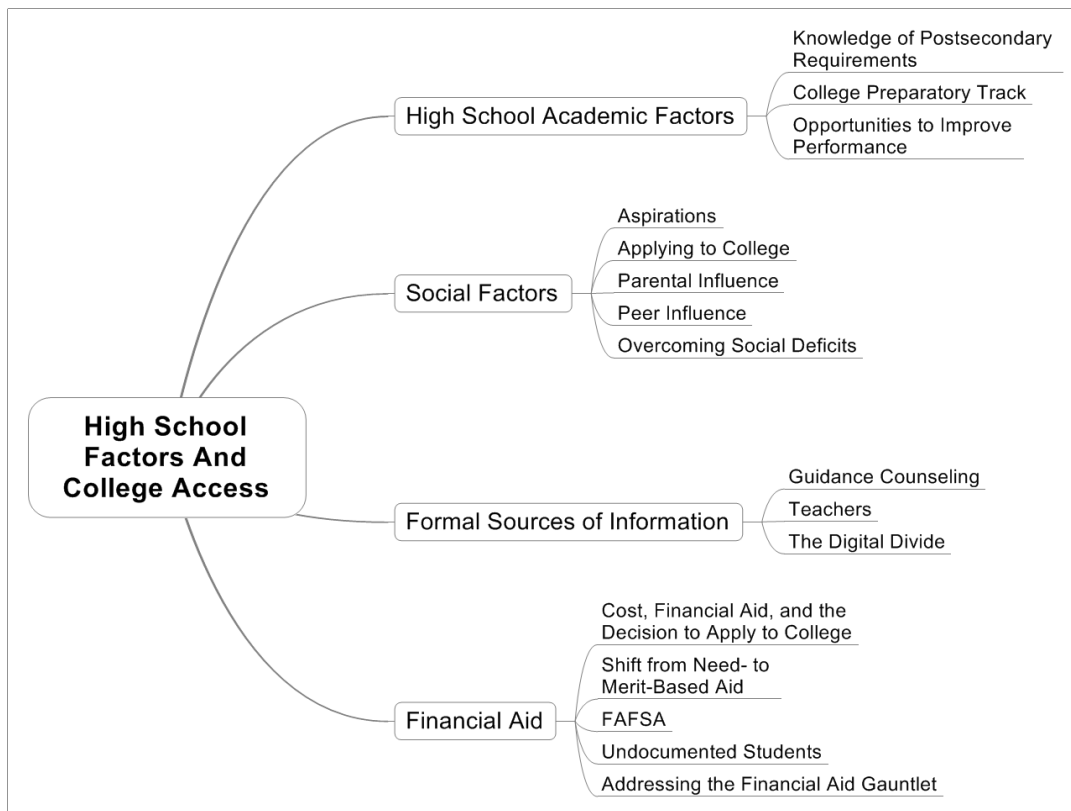
Section I: High School Academics

Researchers overwhelmingly agree that development and demonstration of academic ability is of paramount importance to students' future enrollment and success in college. Measured academic achievement is strongly correlated with family income, and low socioeconomic status (SES) students are the most likely to struggle academically (Adelman 2004; Deil-Amen & Turley 2007). Without the proper academic foundation in primary school, students are unlikely to excel in high school (Bui 2005; Deil-Amen & Turley 2007; Trent et al. 2007). While high school success is predicated on previous education, high school is key in predicting college access. Because colleges assess high school academics when making admissions decisions and it is during high school that students' make the decision of whether and where to attend college, high school academic achievement is paramount to college access.

There are several opportunities to boost high school academic performance. First, programs can help students understand the connection between high school academics and success at college. Second, innovative strategies, such as "Senior Seminars" and providing tutoring can boost academic performance. Third, programs that allow students to enroll in college classes while in high school improve academic performance, may ease the transition to college after high school, and enable students to enter college with a "head start" on college coursework. Fourth, Advanced Placement (AP) classes provide students with a solid academic foundation and can lower the cost of college by allowing high school students to earn college credit at no cost.

Knowledge of Postsecondary Requirements

Although educators, researchers, and policymakers know that success in high school is the single best predictor of success in college, many students are unaware of this fact. A

surprising number of high school students believe that, because many colleges have open enrollment policies, doing well in high school and acquiring academic skills is unimportant (Rosenbaum 1998). Horn and colleagues (2003) find the majority of students who have GPAs in the F and D range expect they will go to college, as do the students' parents. Surprisingly, students who are at risk of not finishing high school *expect* to go on to college.[1] Furthermore, surveys of college-bound high school seniors find that many do not see a connection between academic performance and career opportunities or success in college (Rosenbaum 2004).

Figure 2: Adelman's Composite of Academic Ability

Academic performance remains the best indicator of whether students will go to college, as compared to race, SES, and parents' education level. Adelman's (1999) composite of high school class rank/GPA, standardized test scores, and high school curriculum, as shown in Figure 2, is the greatest predictor
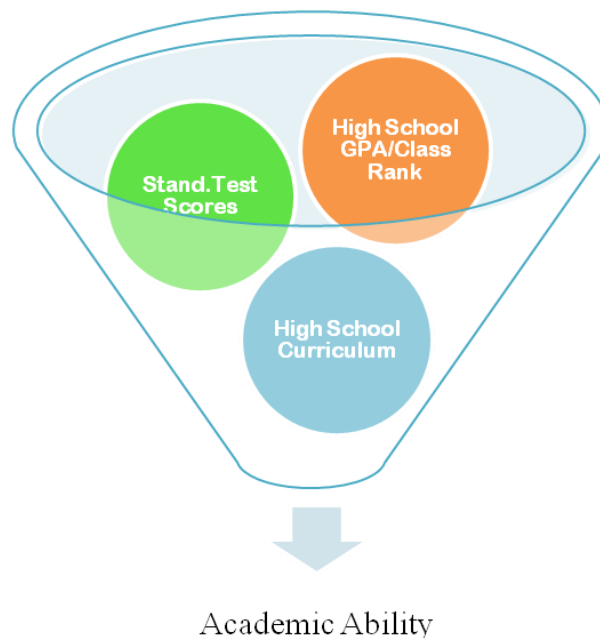
both of college attendance and degree completion (DesJardins et al. 2002). Other researchers

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[1] **SES and Understanding Academic Performance**: Alexander and Entwisle (1994) report that parents and students have over inflated recall of students' past grades, and that the ability to accurately recall previous grades affects prediction of future grades. Lower-SES parents and students are especially poor at connecting past academic performance with future academic performance. This suggests that improving academic measures of low-SES students may be difficult, because these students and their parents do not "know" that they are doing poorly. Moreover, students' lack of knowledge about college may be exacerbated by high school counselors who feel that they should uniformly support students' plans to go to college regardless of whether or not they are academically prepared. Research indicates that high school counselors are reluctant to inform academically struggling students that they are unlikely to do well at the postsecondary level (Rosenbaum 2004).

have also documented a strong connection between high school GPA and entrance to college (Allensworth & Easton 2007; Roderick et al. 2006). Research indicates that high school freshman year GPA can be a useful indicator for identifying students who need additional support (Allensworth & Easton 2007; Roderick et al. 2006). Although GPA and academic performance is the number one predictor of college going, it is important to note that over 70 percent of low-SES students are academically unprepared for college (Cabrera & La Nasa 2001). Thus, academic enhancement is especially important for increasing low-SES college going. Moreover, college admissions officers report that academic ability, as measured in a manner very similar to Adelman's composite, is the most important factor in admissions decisions.

Researchers hypothesize that high school students are "tracked" at an early age and students who are not on the college preparatory track are unlikely to attend college (Lucas 1999; Rosenbaum 1980). However, the positive effects of taking a college "track" curriculum in high school remain disputed. While St. John (1991) finds that students enrolled in a college track curriculum were 12 percent more likely to attend college than students enrolled in general or vocational curriculum tracks, Karen (2002) finds little evidence that taking a college prep curriculum has an effect on being accepted into a more selective college. A possible explanation for this contradiction is that, while there is a correlation between students' academic track in data from the High School and Beyond 1980 (HS&B) study there is almost no correlation in the National Educational Longitudinal Study 1988 (NELS: 88) study (Karen 2002). There are considerable difficulties in measuring the impact of taking a college track curriculum versus a non-college track curriculum, as schools have great variety in their "college track" curricula. However, if "college track" is synonymous with taking the most challenging courses, then there is a clear connection between college "track" and going to college (Adelman 1999, 2004; Louie

2007). This research suggests that students and parents need to understand the importance of taking academically rigorous courses in high school.

> *Increasing the academic ability of low-SES high school students is the most important factor to increasing low-SES college attendance. Any college access program dealing with high school students should make academic improvement central to the program's mission.*

Opportunities to Improve Academic Performance

Several methods exist to improve academic performance including: tutoring, college partnership programs, AP courses, and Senior Seminars (See Table 1). Tutoring not only helps students finish high school, but also helps ensure that when students get to college, they have the proper academic foundation to succeed. All college access programs, especially the most effective ones, provide some tutoring component (Gandara 2001; Swail 2000). For example, AVID, one of the more successful college access programs for low-achieving (C-average), low-SES students links participants with college-student tutors (Jurich 1999). Similarly, programs such as Upward Bound provide academic tutoring to improve college-going rates among low-SES students (Myers & Schirm 1999). However, as Upward Bound is a multi-faceted program the importance of specific aspects of the program appears impossible to determine with the current data.[2] In addition, tutoring improves high school grades, and may provide a previously low-achieving student the opportunity to attend college.

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[2] **Program Evaluation:** One recurring problem in the college access literature is that few programs keep detailed records enabling reliable program evaluation. This is particularly a problem when attempting to understand whether or not particular aspects of a program are effective (Gandara 2001). For example, Rutgers University is particularly adept at boosting retention for low-income and first-generation students. Analysis has shown the school to have a six-year graduation rate of almost ninety-five percent for at risk youth (Thomas et al. 1998). Rutgers is like many other postsecondary institutions in offering a wide array of services to at risk students. Unfortunately the programs at Rutgers do not keep detailed records linking individual students with the type and quantity of services recieved, which makes it impossible to determine which particular programs are the most effective in boosting retention and persistence (Thomas et al. 1998).

College partnership programs provide another opportunity for students to improve their academic skills. College partnership programs allow students to take college courses while still in high school. Satisfaction with such programs is high and these programs are of particular benefit to low-SES students because they lower the cost of college, with college credits being earned while in high school (Gandara 2001). However, program evaluations indicate that college partnership programs tend to recruit mid- and upper-SES students who are already likely to attend college (Gandara 2001).

Table 1: Opportunities to Improve Academic Performance

Method	Definition	Goals
Tutoring	Tutoring helps students master their high school coursework and develop strong study skills.	Improving performance in high school coursework. Increasing the graduation rate. Increasing academic ability to expand postsecondary options.
College Partnerships	College partnerships allow students to take courses at a local college. Programs or the high school generally cover the cost of books and tuition charges.	Familiarizing students with college coursework, providing academically strong students with challenging classes, and cutting the cost of college by allowing students to earn college credit at little or no cost to the student.
Advanced Placement Classes	High school faculty teach AP classes and the courses qualify for college credit provided students score sufficiently high on the end-of-term standardized exam.	Providing students with a preview of what college courses are like and allowing students to cut college expenses by earning college credit while in high school.
Senior Seminars	Senior Seminar courses require students to incorporate a diverse field of knowledge, from writing skills learned in English to science or social studies courses. The possible course topics and structure are immense.	Providing students with a preview of what college courses are like and helping students to develop critical thinking skills.

AP courses are similar to the college partnership concept, as they provide students rigorous college credit courses in high school.[3] Many students recognize the importance of AP courses, evidenced by the doubling of AP course enrollment between 1997 and 2005 (Planty et

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[3] College partnership programs allow students to take college courses at a college, while AP courses are high school courses that allow for testing to earn college credit.

al. 2007). AP classes improve the college going rate of students in several ways. First, AP classes provide a rigorous curriculum and students who take a rigorous curriculum are the most likely to attend college (Adelman 1999, 2004; Gandara 2001). Second, AP classes may increase college aspirations. Third, as an added benefit AP courses allow students to earn college credit while in high school, thus lowering the future cost of college and enabling the student to build confidence about college coursework and enter college with a head start. Of particular concern to college access researchers is the great disparity in AP course access; as low-SES students and students in rural high schools are least likely to have access to AP courses (Geiser & Santelices 2004; Planty, et al. 2007). Moreover, Geiser and Santelices (2004) find that simply taking an AP course does not improve college performance, but that students must learn the material, as evidenced by scoring well on end of term AP exams.

Senior Seminar courses are another way to improve writing and critical thinking skills (Conley 2007). Senior Seminars are structured like college courses, requiring intensive writing and the ability to synthesize information from different high school courses. Like AP courses, Senior Seminars give students a preview of college coursework and helps high school students develop the critical thinking and writing skills required to succeed in college.

In conclusion, tutoring, AP classes, mentoring and college partnership programs can modestly improve the likelihood of low-SES students going to college. However, all these programs suffer from a self-selection problem, where those likely to attend college are much more likely to enroll in AP classes or college partnership programs. Estimating the cost of such programs is also difficult and can include expenses such as tuition, books, fees, and teacher or staff to run a tutoring program. Unfortunately the academic literature contains little analysis of these costs (Gandara 2001).

Section II: Social Factors

Many researchers have focused on the importance of social capital in college access. While researchers debate the exact meaning of social capital (Farr 2004; Portes 2000; Putnam 1997), for the purposes of this literature review social capital refers to the personal networks that students can draw upon to gain information and resources. For example, children of parents who went to college can draw on their parents' experience, while first-generation students must find less immediate sources of knowledge. Because college educated parents and friends serve as role models, low-SES students frequently lack such models (Horvat, Weininger, et al. 2003; Perna & Titus 2005) and encounter social capital deficits with regards to college access. A great deal of modern research aims to understand how aspirations, and processes of applying to colleges and parental and peer relationships help or hinder the ability of low-SES students to access college.

Aspirations

One social capital barrier for low-SES students may be aspiration levels. If students do not aspire to go to college, they are unlikely to enter the college pipeline. Many college access programs, such as AVID, I Have a Dream, and Upward Bound spend considerable resources raising students' college aspirations (Gandara 2001; Myers & Schirm 1999; Swail & Perna 2002). While many programs make raising students' aspirations a goal, researchers note that there are causation problems when measuring the effect of aspirations on the decision to attend college (Long 2007). Moreover, for more than ten years the *majority* of students who complete high school aspire to attend college (Schneider and Stevenson 1999). In fact, today college aspirations are so universal that even students who should be dissuaded from going to college now aspire to attend college (Avery & Kane 2004; Horn et al. 2003; Roderick, et al. 2006). Some researchers argue that instead of raising aspirations, programs should aim to encourage high

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school students to develop realistic expectations and understand the importance of doing well in high school (Rosenbaum 2004; Schneider & Stevenson 1999). As Steele (2008) notes, aspirations only matter when they lead to changes in behavior, such as getting good grades and taking a college entrance exam.

Unfortunately, most college access programs are not designed to foster realistic aspirations; they generally encourage all students to go to college. Yet students who are highly unlikely to succeed in college are done a disservice when they are encouraged to enter college and then fail to graduate and are left with loan debt.

College access programs should encourage students to develop realistic aspirations and help those unqualified for college to find more suitable educational or vocational opportunities.

Applying to College

Research indicates that even when low-SES students are academically prepared and have taken college entrance exams they are less likely to apply to college (Horn & Carroll 1997). The first important step in going to college is applying to college, and low-SES students submit fewer college applications than high-SES students (Hurtado, Inkelas, et al. 1997).[4] One possible explanation is variance in high- and low-SES students and their families understanding of college. High-SES students and families understand that students learn skills in college that prepare them for many different kinds of jobs, and that students do not need to choose a career until well into their college careers, or even until after finishing college. As a result, colleges are evaluated on academics, the "fit" of a student for a particular college, and other non-career factors. However, lower-SES students typically view college as a career-training center. As a result low-SES students are hesitant to apply to colleges because they believe they must choose a

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[4] One-fifth of college qualified low-SES students do not apply to any college in their senior year (Cabrera & La Nasa 2001).

career *before* choosing a college (Roderick, et al. 2008). Since college is generally marketed to students as the gateway to higher paying jobs, students are further encouraged to think of colleges primarily as career training centers.[5] Since students are going to college to get a good job, low-SES students figure they must be sure the schools to which they apply will train them a specific job. Why waste time and money on application fees if the schools will not train you for your desired career? However, students in high school are often unable to decide on a career at such a young age and, paralyzed by the fear of choosing the wrong college, low-SES students do not apply to college (Roderick, et al. 2008).

One important outcome of applying to college is additional information about college costs and available financial aid (Cabrera & La Nasa 2001). This additional information may be enough to encourage a student to attend college. However, since lower-SES students apply to few colleges, they inadvertently limit their exposure to information about financing college. Perhaps as important, low-SES students may choose strategies more conducive to success in college, such as attending full-time and living on-campus, once they apply to colleges and learn more about the actual price of attendance versus the sticker price. Given that each additional college application increases the amount of information students and parents have to make informed decisions, increasing the number of applications low-SES students submit could directly increase their access to information about financial aid, and indirectly increase college access. Waiving application fees and simplifying college applications could significantly increase the college going rate of low-SES students.

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[5] To some extent, the view of college as primarily designed to improve career prospects exists across SES levels. In focus group sessions, parents cite the importance of a college degree in getting a better job, but almost never cite any other benefit of college (Ikenberry & Hartle 1998).

Parental Influence

Successful college access programs involve parents in the college search and application process and increases the odds of students enrolling in college. Although researcher in 1989 reported that parental expectations were a strong predictor of college attendance (Stage & Hossler 1989), today almost all parents expect their children to attend college, making this causal relationship no longer relevant (Adelman 1999; Schneider & Stevenson 1999). The change to universal college expectations among students and parents is remarkable, occurring over a period of about ten years (Schneider & Stevenson 1999; Stage & Hossler 1989). Moreover, parental influence seems to be less important in explaining college access, as Goyette (2008) finds that the predictive power of parents' socio-economic status is also declining, at least in terms of whether a student attends any college, though not necessarily what type of college a student attends. In sum, although parents can be important sources of information in the college search, universal college aspirations have made parental indicators less predictive of basic college access.

Today there is increased concern that immigrant parents may be unable to adequately help students with college search and application because they may have little understanding of the educational system in the United States. In addition, language barriers can make it difficult for immigrant parents to communicate with school staff and fill out required forms. However, research is mixed on whether or not immigrant status is a barrier to entering college (Deil-Amen & Turley 2007). In fact, when researchers control for SES and family structure, being an immigrant is positively associated with going to college (Bankston III & Zhou 2002; White &

Glick 2000).[6] It is possible that immigrant parents and children have above average motivations to attend college because providing more opportunity to one's children is a common reason for immigrating to the U.S. It is also possible that there is variation in the likelihood of going to college related to ethnic background and language. For example, in Chicago Latino youth attend college at a somewhat lower rate than would be expected even after accounting for family background and SES (Roderick, et al. 2006). Yet without much larger studies that can control for the wide variation in immigrant backgrounds it is impossible to determine whether or not there are significant differences in the college going rate by ethnicity.

The research literature is inconclusive with regards to immigrant status and college access.

Peer Influence

Peer influence and the decision to attend college is a source of considerable interest in recent scholarly work (Betts et al. 2003; Sokatch 2006; Tierney & Venegas 2006; Turley 2003). Sokatch (2006) finds some evidence that among low-SES urban youth, peer influences are the best predictor of a student's decision to enroll in college. This new area of research has resulted in new college access programs, such as Posse, which encourages groups of students to go to college together (Gandara 2001).

Some researchers assert that the most significant indicator of college attendance is simply having friends who plan to go to college (Choy, Horn, et al. 2000). Youth who enroll in college generally have peer networks filled with other college bound students (Roderick, et al. 2008). Although it makes sense that student who are planning to go to college would be friends with

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[6] Although researchers suspect that there are differences between legal and undocumented immigrants, there is difficulty probing this issue due to a lack of reliable data (Roderick, Nagaoka et al. 2008). Undocumented immigrants generally are unwilling to disclose their legal status, which constitutes a very real barrier for researchers. In addition, high schools generally do not share or track their students' legal status (Deil-Amen and Turley 2007; Roderick, et al. 2008).

students who have similar interests, (e.g. planning to go to college); this does not constitute evidence that peers are the determining factor or even a significant causal factor in the decision to attend college. For example, Perna (2000) finds that friends' encouragement to attend college has no measurable effect on the college going rate, regardless of student race or ethnicity. Furthermore, researchers suggest that few high school students have long-lasting friendships (Schneider & Stevenson 1999), and that as students go through high school, they change friends to those who have similar interests. Thus, a college bound student who was friends with non-college bound students as a freshman is likely to develop friendships with college bound youth during high school.[7] While peers undoubtedly have influence on a student's decision to attend college, it appears to be a small influence. There remains very little systematic work on the role of peers in determining college choice (Long 2007).

> *Available research suggests that although peers may influence student perception of college and whether to go to college, they are not a major factor in the decision of whether or not to attend college. Available research suggests that peer networks are rapidly changing and that peer encouragement does not significantly affect students' decision, thus programs seeking to harness the power of peers are not likely to improve college access.*

Overcoming Social Capital Deficits

Opportunities for overcoming social capital deficits include workshops, networking, and mentoring. While direct analysis of workshops in mitigating social capital deficits is lacking, several programs hint at the potential benefits and limitations of workshops. Workshops provide an opportunity for low-SES parents to build social capital by meeting with one another and

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[7] **Peers and Inaccurate Information:** One negative association between peers and the dissemination of college knowledge is that peers can reinforce inaccurate knowledge of the college search process. As information passes through a chain of people, the information tends to become less reliable. If students are relying heavily on their peers for information regarding college access and knowledge, then that knowledge is more likely to be inaccurate. Mundel and Coles note that the perceptions and information of college available to peers is generally accepted among researchers to play some role in a student's decision of where to attend college (2004).

discussing their children's college plans. Workshops specifically geared towards low-SES families provide an important networking opportunity where parents can exchange information about college (Gandara 2001; Jurich 1999).

Another opportunity to overcome social capital deficits may be as simple as helping students with college search and application. First-generation college students report that receiving help navigating the application and financial aid requirements was very important to their success (Engle, Bermeo, et al. 2006). Low-SES and first-generation students who do attend four-year colleges are the most likely to have received help with their applications from a school counselor or teacher (Horn & Carroll 1997), even after adjusting for other factors. Researchers have found that many students have little difficulty finding general information on college, but that adult guidance is frequently lacking for low-SES students (Roderick, et al. 2008). Gandara finds that the best college access programs incorporate a caring adult (2001).

The mechanisms by which adult guidance affects college access remains unclear to researchers. It is possible that adults serve as a sounding board for students, allowing students to flesh out college plans and test them on someone older and respected. It is also possible that adults serve as a catalyst for students, encouraging students to take action to complete college forms and meet deadlines, and that adults serve as managers for students navigating the college application and decision process. Without a detailed study of adult interaction with students navigating the college access and decision process, the exact role adults have on students will remain unanswered.

> *Research suggests that providing social capital supplements and a supportive adult, such as a counselor, mentor or teacher to help students with college applications can significantly affect low-SES and first-generation college attendance.*

Section III: Formal Sources of Information

Accurate information about college search and selection is important for high school students and parents. Students and parents rely on a composite of resources when making decisions about college (see Graph 1). When asked about the most useful channels of knowledge, parents report that parent-teachers meetings are the most important source of information, followed by print materials, informal conversations, and the internet. Research indicates that knowledge of financial aid and adult guidance in the college search and application process are both significant factors in the likelihood of attending college (Plank & Jordan 2001). This section reviews the academic research on the role of guidance counselors, teachers, and online resources in the college search and selection process.

Guidance Counseling

Among all sources of college knowledge, the high school guidance counselor may be the least understood by school administrators, researchers, and the public. While in decades past, counselors played a critical role in facilitating access to college (Lee & Ekstrom 1987), today high school guidance counselors report that parents are now much more influential in students' academic decisions (Rosenbaum et al. 1996). Currently, high school counselors act primarily as disciplinarians rather than as information resources (Deil-Amen & Rosenbaum 2003) and college counseling is but one of many guidance counselor responsibilities (Lee & Ekstrom 1987; McDonough & Calderone 2006). Not surprisingly recent research finds little correlation between guidance counselor expectations and students' college enrollment decisions (Steele 2008).

However, while the role of high school guidance counselors in college access has became less important for middle- and upper-SES students, for low-SES students regular contact with a

guidance counselor is a significant predictor of college access and attendance (King 1996). For first-generation students in particular, high school guidance counselors are well situated to help students navigate the college search and application process (National Association for College Admission Counseling 1990). Guidance counselors provide college knowledge that first-generation, low-SES students cannot get from their parents and relatives. Moreover, guidance counselors (along with teachers) are highly trusted by students and parents, in some cases even more trusted than members of the clergy (Ikenberry & Hartle 1998).

Unfortunately, while guidance counselors appear important to low-SES students, these students are the least likely to receive adequate contact with high school counselors because low-SES students are concentrated in schools with low counselor to student ratios (Lee & Ekstrom 1987). In addition, guidance counselors at schools that serve predominately low-income communities are overburdened with discipline and family welfare issues (Lee & Ekstrom 1987). Thus, those students for whom guidance counseling could have the greatest impact are least likely to receive it. In response to the lack of guidance counseling available in schools, many college access programs incorporate guidance counseling into their programs (Gandara 2001; Engle, Bermeo et al. 2006). In addition, some schools are attempting to increase the contact between low-SES students and counselors by pairing counselors with a particular class, so one cohort of students works with the same counselor(s) during all four years of high school (Farmer-Hinton & Adams 2006).

Another way to enhance counseling service is to provide peer counseling. Peer counseling consists of students, supervised by a guidance counselor, helping other students with the college search and application process (Tierney & Venegas 2006). Peer-counseling programs were designed in response to research that finds that students turn to their peers for help with

Internet related problems (Venegas 2007). Interestingly, the only measurable impact of peer-counseling programs was an increase in the college going rate was for the peer-counselors themselves, likely because the peer-counselors had additional guidance from their "supervisor," and because counseling others reinforces the peer counselor's knowledge of the process (Tierney & Venegas 2006).

It remains unclear whether peer counseling is an effective method to improve college access for low-SES and first-generation students. It is possible that even if peer counseling produces only a weak affect on college access, it remains a good supplement to high school counseling services. Moreover, peer counseling is a comparably low-cost way to increase information sources for low-SES students.

Teachers

Teachers play a key role in the college search and application process. For acceptance to selective colleges, students frequently *must* incorporate teachers in the college application process in the form of letters of recommendation. Due to the large amount of time teachers spend with students, they are uniquely situated to help students in college search and application. Moreover, because students and parents trust teachers, they are in a good position to advise students about college (Ikenberry & Hartle 1998). In a detailed study of college access in the Chicago Public Schools, researchers find that teachers generally provide only superficial advice on college search and application, with little personal attention to students' specific needs, partly because teachers feel unqualified to provide advice to students regarding college search and application (Roderick, et al. 2008).

Considering the importance of teachers and speculation about their role in college access, it is disturbing to find little research on the role of teachers as a source of college knowledge.

This lack of research is likely a result of the difficulty in studying the student-teacher relationship. While interactions with guidance counselors can be easily monitored, almost all students have relatively equal contact with their teachers; it is the nature of that contact that shapes students' decisions of whether and where to attend college. However, because many teachers report feeling uncomfortable providing knowledge about college and students report having a great degree of trust in their teachers, it is possible that providing a small amount of college counseling training to teachers could prove beneficial to the dissemination of college search and application knowledge. Such information and training provided to teachers must go beyond the superficial - telling students to complete the FAFSA or apply to college - and give teachers an understanding of how modern students finance college. Only when high school teachers feel they understand the pros and cons of various college finance strategies will teachers be likely to help students with college financing questions.

> *Training high school teachers to assist in the college search and application process could affect college access for low-SES students.*

The Digital Divide

The Internet is an important source of college information for students. In addition to general information, the Internet frequently must be used to complete college admissions and financial aid applications. As illustrated in Graph 2, there is a clear gap in internet access between low-, and middle- and upper- SES students (Day et al. 2003). Not only are low-SES students unlikely to have Internet access at home, but as the number of low-SES students at a school increases, the availability and quality of internet access at a school decreases (Gladieux & Swail 1999). Additionally, in a study comparing four high schools in California, Venegas (2007) finds that low-SES students, if they have internet access, are the most likely to have slow internet

access both at home and at school. Furthermore, teachers and counselors at predominately low-SES schools often lack training and knowledge of the computers and online tools designed to assist students in their college search and application process (Venegas 2007). When low-SES students get online, they frequently describe online resources as confusing (Venegas 2006). Despite the proliferation of online college search and application tools, most low-SES students prefer more traditional sources of information (De La Rosa 2006), and low-SES minority parents also prefer traditional sources of information over the internet (Tornatzky, et al. 2002).

Graph 1: Percent of Parents Rating a Knowledge Source as "Most Helpful"
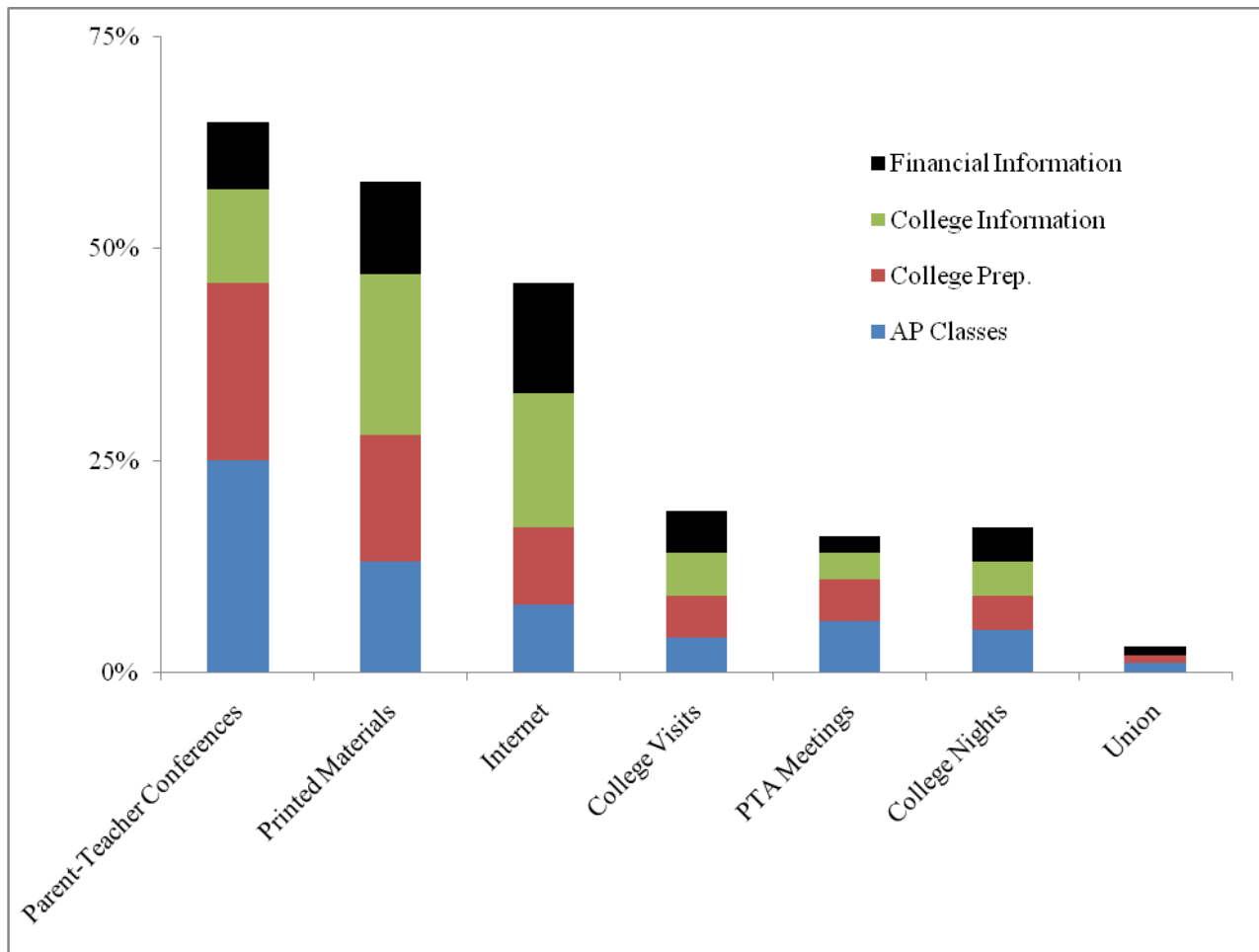
Graph 1 adapted from: Tornatzky, Louis G., Richard Cutler, and Jongho Lee. (2002). "College Knowledge: What Latino Parents Need to Know and Why They Don't Know It." Tomas Rivera Policy Institute, Claremont, CA

As colleges, states, and the federal government increasingly require students to submit documents via the Internet, the gap in Internet access will become an even larger barrier to low-SES students.

Graph 2: Estimated Households with a Computer and Internet Access, by Family Income (2003)
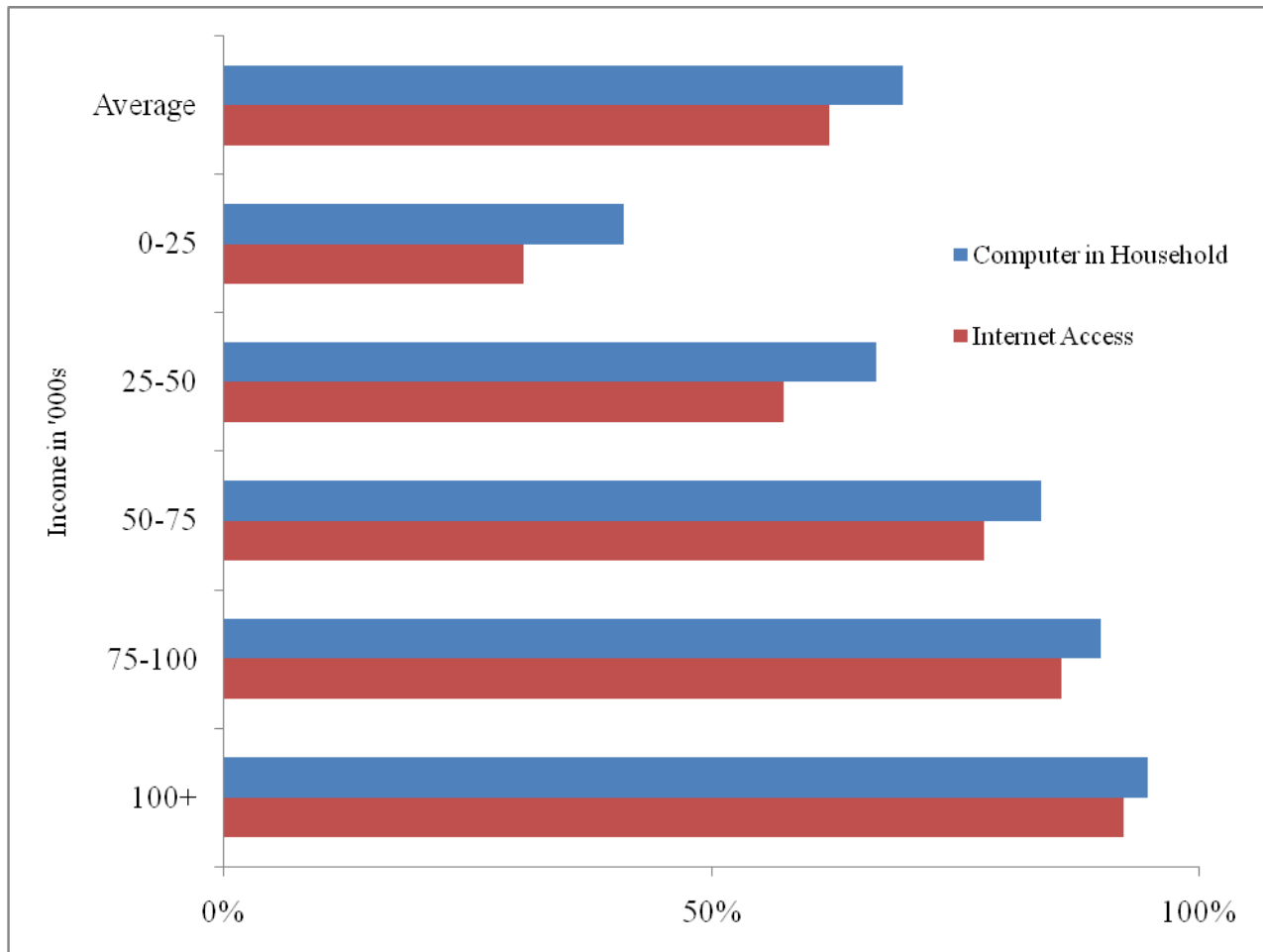
Graph 2 adapted from: Day, J., A. Janus, and J. Davis. (2005). Computer and Internet Use in the United States: 2003. <u>Current Population Reports</u>. Washington, D.C., U.S. Census Bureau: 14.

There are a number of strategies that can narrow the college access digital divide. First, college access centers can provide high-speed Internet access and adult assistance to help

students use these resources (TERI 2002). Second, workshops and information sessions can explain how to use the Internet (TERI 2002). Third, high schools can train counselors and teachers to better assist students (TERI 2002; Venegas 2007). Fourth, libraries with reliable internet access are a convenient resource for low-SES students, thus incorporating libraries into college access programs could help address the digital divide. Fifth, the Boston Public Schools provide low-SES students and their parents with computers and internet access at their homes for a modest monthly fee of $15 (Boston Digital Bridge Foundation 2008; Lazarus, Weiner, et al. 2005). This could be a model program for other districts. Unfortunately, like many college access programs, the Boston program and the college access center model have not been intensively evaluated. Moreover, there is little research and information on the role of the internet in alleviating or exacerbating college access issues, despite the important role of the internet in college search and application (Lazarus, Wainer, et al. 2005).

Section IV: Financial Aid

Cost, Financial Aid, and the Decision to Apply to College

Students and parents from all SES levels have considerable confusion and anxiety regarding financial aid and their ability to pay for college (Avery & Kane 2004; Byrd & Macdonald 2005; Ikenberry & Hartle 1998). Students, particularly low-SES students, encounter barriers at multiple stages in learning about and receiving financial aid information. First, it is possible that students do not pursue college from an early age because they believe is unaffordable (Long 2007). Second, the process of applying for financial aid (e.g. FAFSA, state assistance, college assistance programs, and scholarships) is a barrier to many students. Third, many students who successfully apply for and receive financial aid find that the available aid is insufficient to cover the cost of college. Moreover, students and parents are unable to accurately

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estimate tuition, fees, and financial aid levels (Horn, Chen, et al. 2003; Ikenberry & Hartle 1998). Further complicating the misperception of many applicants is the difficulty of accurately estimating the true cost of a particular college until one has already invested considerable money and time in the application process (Advisory Committee on Student Financial Assistance (ACSFA) 2008; Cabrera and La Nasa 2001; Perna 2006). It is only after applying to a college that it becomes possible to estimate the cost of attendance. Students frequently do not *apply* to colleges they perceive as unaffordable; even if those schools offer financial aid that can make them as affordable as schools to which students do apply (Singell & Stone 2002).[8] Because low-SES student cannot afford to apply to multiple colleges or spend the time completing many applications they have less information to make college decisions.

FAFSA

Applying for federal financial aid is crucially important as colleges use information from the FAFSA to determine students' aid packages and many states use the FAFSA to determine state administered aid. Students frequently find the process of applying for financial aid extremely confusing (ACSFA 2005, 2008). Students face several barriers in applying for aid including confusing forms that ask too many questions, deceptive and hard to meet deadlines, and the lack of knowledge of available aid. The most obvious problem is that the FAFSA demands far too much information from students (ACSFA 2008). In fact, researchers note that the FAFSA is longer and more confusing than the average tax return (Dynarski & Scott-Clayton 2006).

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[8] The sticker price of private institutions prevents many low-SES students from even attempting to attend private colleges. Many private colleges are cost competitive with public colleges for low-SES students because of more generous aid packages (Leslie & Brinkman 1987). However, colleges and universities are often reluctant to advertise their true cost (Mundel & Coles 2004; Glater & Finder 2006, December 12).

The FAFSA also has a confusing deadline for completion. The deadline for submitting a FAFSA form to the U.S. Department of Education is frequently months later than students are required to complete a FAFSA form in order to meet state and college financial aid deadlines (Roderick, et al. 2008). Moreover, the college and state deadlines frequently come before parents have received their W-2 forms, making it necessary for parents to use their previous year's tax information, though many parents may not know they can do this (Roderick, et al. 2008). The need for detailed parental information also ignores the fact that for children of single parent households it may be difficult, or even impossible, for students to obtain information that the FAFSA demands (ACSFA 2005). Similarly, students with an absent parent, a parent in jail, a non-traditional family, or who are emancipated or independent encounter additional problems.

A third challenge is that the federal government assumes that parents will help cover the cost of college (ACSFA 2005). Students whose parents do not help pay the cost of higher education must declare themselves independent; which is an arduous, and often impossible, task. Moreover, because students must prove to each college they are financially independent, it is difficult for students to apply to multiple colleges or transfer to different colleges. Finally, the current financial aid system does not easily adjust to changes in students' circumstances. For students whose parents lose their jobs after filing the FAFSA, it is difficult to renegotiate aid offers from colleges, states, or the federal government. While the Department of Education allows students and parents to adjust their income, the grueling and intimidating process likely prevents many students from attempting to rework their FAFSA (ACSFA 2005).

Due to the great complexity and many barriers students face, it is very important for parents and students to receive as much information as possible on how to navigate the financial aid application process. Providing workshops and equipping high school personnel to answer

questions is important; as is an easy to use system that helps students keep track of and meet multiple deadlines. Students and parents who encounter unique barriers likely require additional information on how to overcome these barriers. Moreover, while states cannot change the FAFSA, they can ensure that state applications and deadlines for financial aid are clear and easy to file. Finally, it is important that states make clear that their deadlines are earlier than the federal deadlines.

Graph 3: Average EFC and Unmet Need for Low-Income Undergraduates Enrolled Full-Time, by Type of Institution: 1995-96
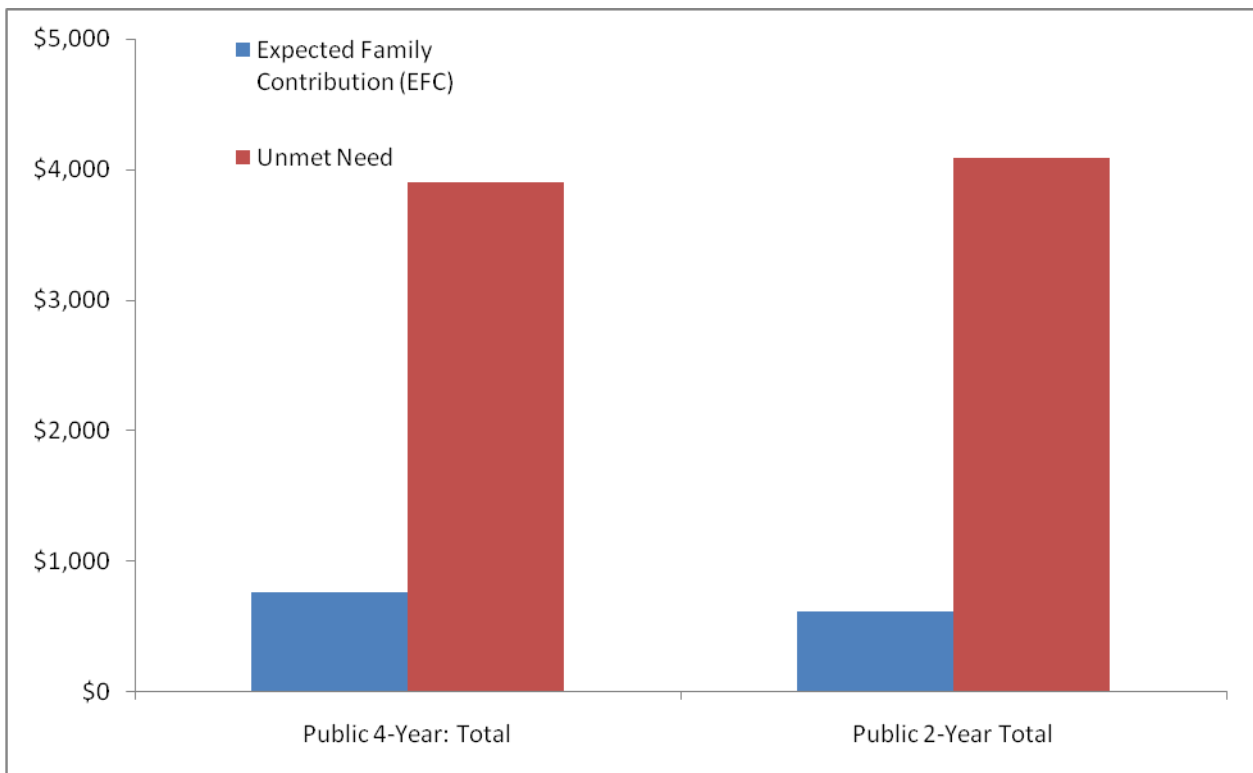
Graph 3 adapted from: Choy, Susan P. (2000). Low-Income Students: Who They Are and How They Pay for Their Education. Education Statistics Quarterly. National Center for Education Statistics, U.S. Department of Education, Washington, D.C.

Low-SES students and parents are rightly concerned about the cost of college. The

federal government frequently leaves a large gap between what college costs and what students

and families can afford. In academic year 1995-96, for the average low-income student the

difference between all student aid, including grants, government backed loans, and work study

and the cost of attendance was $4,800 dollars (Choy 2000). Further confusing parents and

students the FAFSA provides a calculator called the "expected family contribution" or EFC. The

EFC *appears to parents* to estimate the amount of money parents or independent students are

expected to contribute each year towards the cost of college (not including money students

receive from work-study, loans, etc.). However, the EFC does not reflect the actual cost of

college for many families (see Graph 3). Rather, the EFC was designed by Congress as a way to

ration expenditures on student aid, rather than as a way to accurately determine a *reasonable*

expected family contribution (Choy 2000). The perverse effect of the EFC is that for the poorest

students, those with an EFC of less than $1,000, the amount of borrowing and work required to

attend an average public four-year institution was over $8,000 dollars in the mid to late 1990s

(ACSFA 2002).

Shift from Need- to Merit-Based Aid

As the cost of college has risen faster than the rate of inflation the federal government has

shifted its aid emphasis from grants to loans (ACSFA 2002; Gelber 2007). For example, Pell

Grants have lost over half their purchasing power since the 1970s (ACSFA 2001). Since low-

SES students are more debt averse than other students, the shift from grants to loans counteracts

the goal of equal access for low-SES students (Burdman 2005).[9]

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[9] **Rationality and Debt Aversion of Low-SES Students:** The debt aversion of low-SES students may be a rational
response to labor market conditions. Recent research finds low-SES students earn less money after graduation than
the average for all college graduates (Baum & O'Malley 2002; Dynarski & Scott-Clayton 2006). Moreover, low-

States have moved from need-based to merit-based financial assistance (Long 2004, 2007). Singell and Stone hypothesize that because mid- and upper-SES students are more likely to respond to merit aid, the shift to merit aid may be increasing the gap between low- and upper-SES college going (2002). Because merit-based forms of financial assistance are dispersed in the form of tax credits, they frequently disqualify low-SES families who do not pay taxes (Long 2004). Depending upon how merit-aid is structured, it may improve overall college access, i.e. students may respond by increasing their high school GPAs knowing that this is essential in order to receive financial assistance (St. John, Chung et al. 2004; St John, Musoba et al. 2004). Some evidence suggests that merit-aid programs combined with additional support for students can increase low-SES college access (St. John, Musoba et al. 2004). However, the effect of merit-aid on low-SES students remains unclear, with most research focusing on how merit-aid impedes low-SES college access (ACSFA 2001; St. John, Chung et al. 2004).

Given the mixed research findings it is increasingly important to understand the effects of using merit-based and need-based financial aid, and to understand how changes in merit-based financial aid can affect college outcomes for low-SES students.

Undocumented Students

Undocumented students face unique challenges to financing a college education. The federal government and most states do not provide financial assistance to undocumented students (Szelenyi & Chang 2002), making college unaffordable for many otherwise qualified students (Burdman 2005). Moreover, many public colleges and universities charge non-resident tuition to undocumented students (Szelenyi & Chang 2002). As a further burden to undocumented

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SES students are likely to be academically weak (Adelman 1999; Roderick, Nagaoka et al. 2008). Since academically weak students are understandably concerned they will not finish college, they rationally avoid borrowing for college (Hilmer 1997). Not surprisingly, low-income students are most likely to attend community colleges, where students normally can finance their tuition and fees solely through work (Melguizo and Dowd 2009; Monk-Turner 1995; Roderick, Nagaoka et al. 2008).

students, many colleges use the FAFSA to calculate financial aid (Gray, Rolph, et al. 1996). Because undocumented students do not complete a FAFSA, they are often prevented from receiving college administered support. Individual institutions vary in their assistance to undocumented students, with some colleges providing financial aid and others not (Gray, Rolph, et al. 1996), and some states do not consider immigration status when awarding financial aid. Many undocumented students are likely to avoid filling out a FAFSA for fear of alerting the government to their immigration status, even if it is made clear to the students that doing so increases the chances of receiving other financial aid. States that do not wish to consider immigration status could provide an alternative financial aid application that does not require completing the FAFSA.

> *Until the federal government changes the current FAFSA system, undocumented students are likely to continue to encounter tough barriers to financing college.*

Addressing the Financial Aid Gauntlet

There is considerable opportunity for improving how high schools communicate with parents and students about financial aid. Few high schools provide any meaningful assistance in navigating the financial aid application process (McDonough & Calderone 2006), and when they do address ways to finance college it is typically halfway through a student's senior year of high school (ACSFA 2008; McDonough & Calderone 2006). Information about financial aid should be available much earlier than the senior year of high school, both to allay the fear students and parents have about paying for college and to ensure that students and parents can navigate the college and financial aid application processes (ACSFA 2008; Burdman 2005).

There are several opportunities to help students navigate the financial aid process. Workshops, counselors, and simpler applications would all likely increase the number of low-

SES students who apply for aid. Research finds that students who receive any formal assistance, such as attending a workshop or talking with a guidance counselor, are approximately 20 percent more likely to apply for financial aid (De La Rosa 2006). The probability of applying for financial aid, taking a standardized test, and applying to a college increases with each additional person to which the student talks to about their college plans (Berkner & Chavez 1997). Thus, research indicates that small investments can yield significant results.[10] Finally, increasing the number of colleges that low-SES students apply to will equip these students with better knowledge about the true cost of attending college and financial aid that exists for students. The state could assist students with the application fees if necessary to increase applications.

There are four ways to help low-SES students overcome the barriers that they face when attempting to finance college.

1. Students need to receive more information about how financial aid works.
2. The State of Illinois could provide an alternative financial assistance form that does not require students to submit a FAFSA.
3. Need-based aid should be increased for low-SES students.
4. Students should be encouraged to submit more college applications.

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[10] Upward Bound and Talent Search, two federally funded TRIO programs, provide counseling and workshops on financial aid (Engle et al. 2006).

Part II: Factors in College Retention and Persistence

Part II outlines the research on factors in college retention and college persistence. Figure 3 shows that there are three overarching areas of importance in retention and persistence: 1) academic performance, 2) social relationships, and 3) economic factors. The following sections detain the research findings in these three broad areas.

Research on college access at the postsecondary level typically centers on degree completion and retention.[11] Although colleges and universities spend considerable sums of money to recruit students, there remains significant attrition at colleges (Braxton & Lee 2005; Tinto 1993, 2003). More recently researchers have started to shift their focus from attrition and retention at individual institutions to understanding factors that explain attrition and retention across the postsecondary system (Mortenson 2005).[12] These researchers rely heavily on Tinto's model of college attrition, which is a highly accurate model of students' decisions to leave college (Nippert 2000).

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[11] While there is variation in the college access literature overall; in this paper retention refers to students staying at a particular institution; and persistence refers to students staying in the postsecondary system, not necessarily at a particular institution.

[12] **Calculating Retention and Persistence:** Calculating retention and persistence is controversial in the college access field. Adelman (1999) argues that since half of all college students transfer at least once in their academic careers (and over a third transfer more than once), institutional based retention figures are useless in assessing the higher education system (Adelman, Daniel, et al. 2003). The College Right-to Know Act has mandated guidelines for calculating institutions' retention rates, though these guidelines exclude many students from retention calculations (Hagedorn 2005). Under the current retention measurement guidelines, transfer students, part-time students, students who begin school at any time other than the fall semester, and even students who have not declared a major are *not* included when calculating the retention rate (Hagedorn 2005). With such large numbers of students switching institutions, institutional retention rates are not a useful measure of the true retention rate at a college or university, as so many students are ignored in the calculation. Furthermore, Astin notes that comparisons of colleges based on retention rates can be grossly misleading because colleges have such different student bodies (2005). Schools that appear to have high retention rates may in fact be subpar in retention, and schools that appear to have low retention rates may in fact have exceptional retention rates once a few freshmen demographic indicators of retention and persistence are factored out (Astin 2005). Finally, because the majority of low-SES students attend college part-time, institutional retention figures generally exclude most low-SES students from retention calculations (Corrigan 2003; Hagedorn 2005).

Figure 3: Section II Map
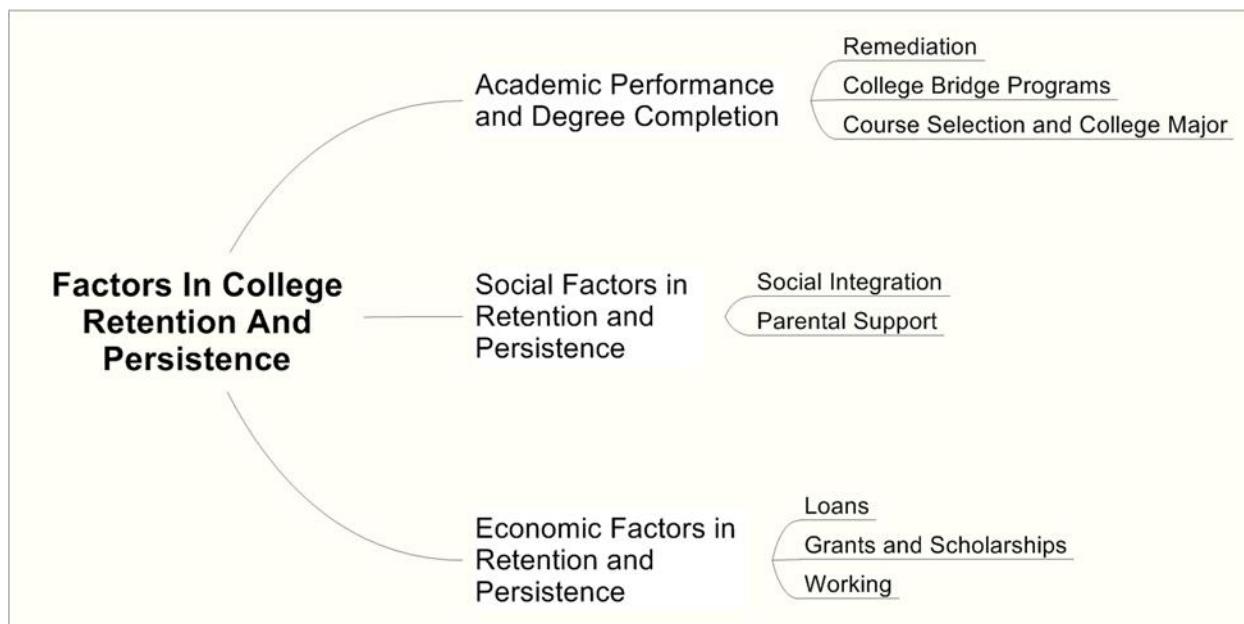
Vincent Tinto's model, shown in Figure 4, describes a student's decision of whether or not to remain enrolled at a particular institution. The student enters college with certain characteristics that are strong influences the student's goals and intentions. These include a student's SES and whether the student has a strong family connection to the institution being attended and toward the student's academic goals. A student's academic ability also shapes goals and intentions to an institution. Finally, the schooling a student receives plays a role in what the students wants and expects from a postsecondary education, as well as what types of skills the student brings to the postsecondary institution. Upon enrolling in college, both social and academic integration occurs, with the student either becoming part of the institutions social and academic environment or failing to integrate into the college atmosphere. The results of the students level of integration cause a student to reevaluate their goals and intentions after a period

of time (for example, the first semester), and to determine whether a) college is right for the

student, and b) if college is right, is the particular college being attended the right college for

achieving the goals and intentions of the student. All along the way, outside pressures affect a

student. These outside pressures vary depending on the choices of the student. For example, a

student with children has stronger external commitments than a student without a child.

**Figure 4: A Simplified Version of Tinto's Model of College Departure**
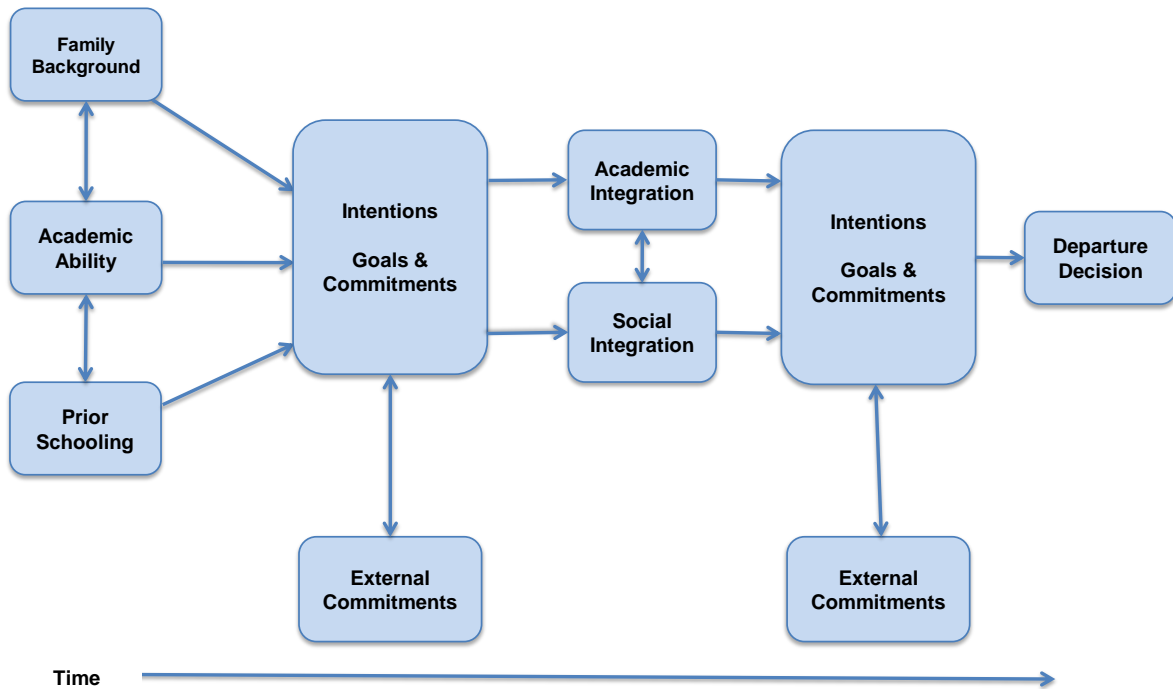
Adapted from: Tinto V. (1993). Leaving College: Rethinking the Causes and Cures of Student Attrition, 2nd Edition. University of Chicago Press, Chicago

The factors that predict college enrollment are the same factors that predict college graduation. The factors important at the college level include 1) student preparation for college, 2) the availability of academic support, 3) college GPA, 4) social integration and academic engagement at college, (Braxton & Lee 2005; Nippert 2000; Pascarella & Chapman 1983; Tinto 1975, 1993), 5) the family structure and living arrangements, and 6) financial aid and income. Research indicates that academic factors remain paramount in explaining college retention and persistence, and low-SES students are the least likely to complete college degrees just as they are the least likely to enter college (Bui 2005; Hauptman 2007; Kazis 2006; St. John et al. 2004; Stinebrickner & Stinebrickner 2003; Tinto 2003).

Section V: Academic Performance and Degree Completion

Academic ability, as measured by GPA, class rank, and standardized test scores, is the best predictor of degree completion (Adelman 1999; DesJardins, McCall, et al. 2002; Rosenbaum 1996, 2004). An astonishing 70 percent of *any* institutions graduation rate can be predicted by a small number of freshman characteristics, including academic ability and SES (Astin 2005). Graph 4 shows the strong effect that high school GPA has on college degree persistence and completion.

Graph 4: 4-Year and 6-Year Degree Attainment Rates, by Average High School Grades
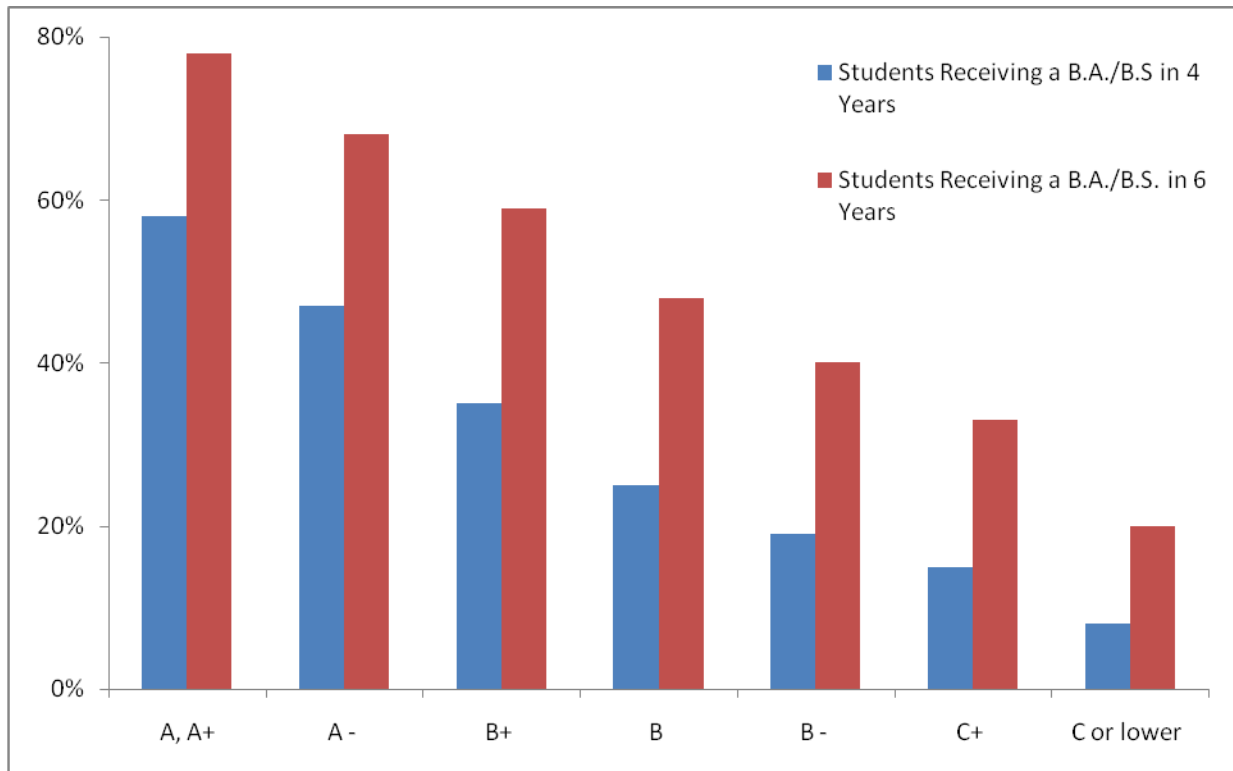
Graph 4 adapted from: Astin, A. W., and L. Oseguera. (2005). Pre-College and Institutional Influences on Degree Attainment. College Student Retention: Formula for Student Success. A Seidman, Westport, CT, Praeger Publishers: 245-276.

Being from a low-SES family, first-generation, and academically unprepared negatively affects college performance and lowers the likelihood of graduating (Adelman 1999; Astin 2005; Astin & Osguera 2005; Rosenbaum 2004). Furthermore, the majority of low-SES students who make it to college are "at best minimally qualified for college-level work" (Kazis 2006).

Since low-SES students are frequently academically unprepared for college, programs and policies that address academic deficiency are critical to boosting college persistence among low-SES students.

Of course, standardized test scores, and even high school GPA only serve as rough measures for the skill students need in college. One of the most fundamental skills required in almost all college courses is writing. Many students are surprised by the amount of writing required in college courses and report that high schools did not prepare them with sufficient writing skills (Byrd and MacDonald 2005; Engle, Bermeo, et al. 2006). The majority of disadvantaged college students who complete community college credit their success to writing assistance (Byrd & MacDonald 2005; Engle, Bermeo, et al. 2006). Tutoring and early detection programs are two examples of the numerous intervention strategies for overcoming poor study and writing skills.

The federal government funds a variety of programs seeking to improve the college enrollment and graduation rate of low-SES and first-generation students through the Student Support Services (SSS) program (Chaney &

The Literature on Community Colleges

Community colleges, also commonly referred to as two-year colleges, have at times enrolled the majority of undergraduate college students in the United States, and continue to enroll the majority of college undergraduates in many states, including Illinois (Berkner and Wei 2006; Lee, Mackie-Lewis, et al. 1993). Unfortunately, community colleges have received little research attention (Berkner and Wei 2006; Melguizo 2009). The research that has been done on community colleges centers around one debate: do community colleges help or hinder students in their quest for bachelor's degrees? Through the 1980s many researchers argued that community colleges offered the hope of gaining a bachelor's degree, but that few students ever actually attained bachelor's degrees (Brint and Karabel 1989; Monk-Turner 1995; Valez and Javalgi 1987). A simple calculation of the percentage of community college students who complete bachelor's degrees shows that attending a community college is second only to being low-income in lowering the probability of a student earning a bachelor's degree (Monk-Turner 1995). Of students who began college in the 1995-96 academic year at community colleges, less than five percent completed their two-year degrees within two years (Berkner, He, et al. 2002). However, research since then has produced a more nuanced picture, acknowledging that community college students are typically weaker academically than four-year college students, and that community college students frequently do not desire a bachelor's or associate's degree.

One reason that descriptive statistics show dismal bachelor's and associate's degree completion rates for community college students is that community colleges serve a wide range of needs (in addition to measurement issues, see footnote 12).

Muraskin 1997; Chaney et al. 1998). However, because institutions are given wide latitude in how SSS programs are structured, it is difficult for researchers to determine what specific programs, or aspects of programs, are effective (Chaney & Muraskin 1997; Chaney et al. 1998). Nonetheless, when broad types of SSS programs are compared, for example tutoring versus cultural outings, certain program types appear especially effective. Tutoring services and especially peer tutoring services have a strong and positive effect on college retention and persistence (Abrams & Jernigan 1984; Chaney et al. 1998). In addition, Student Support Services (SSS) programs that foster peer connections among low-SES and first-generation students are effective at boosting retention (Chaney et al. 1997). Colleges must also be sure that support services are available to students who need them. Tinto (1993) finds that student support services are often offered during hours when those most in need of support, such as students working and/or living off-campus, cannot

The Literature on Community Colleges

Students who attend community colleges are frequently disadvantaged in multiple ways (Lee, Mackenzie-Lewis, et al. 1993). Research indicates that students who attend community colleges have difficulty managing their course work (Schneider and Stevenson 1999), are the least academically prepared or focused (Horn, et al. 2006; Roderick, et al. 2008; Rosenbaum, et al. 1996; Terenzini, et al. 2001) and are the most likely to be unsure of their future plans. However, for students who are academically prepared for college, community college attendance does not appear to hinder students' degree completion rates. Research shows that students who do successfully transfer from community colleges to four-year institutions complete degrees at similar rates as students who went directly to four-year institutions (Hilmer 1997; Lee, et al. 1993; Melguizo and Dowd 2009). When calculating the degree completion rate after factoring out students who 1) take no college level courses, 2) have no interest in obtaining a degree, or 3) obtain fewer than 10 college credits, community colleges have degree completion rates comparable to four-year institutions (Adelman 1999; Lavin 2000).

Moreover, work by Rouse (1994) shows that as the geographical distance decreases between a high school student and a community college, the greater the likelihood that that student will at attend a community college. However, proximity to community colleges has very little effect on the four-year college going rate. This suggests that community colleges do not divert students from attending college, but rather that community colleges encourage students to attend college who otherwise would not do so.

utilize these services. Programs attempting to boost college retention and persistence must make

sure the services are offered at times that those most in need can utilize the services. Thus,

tutoring services should have evening, early morning, or weekend hours (Tinto 1993). Analysis

of SSS programs finds timing a key determinant in program effectiveness, with services provided

the freshman year and particularly the first semester providing the greatest boost in retention and

persistence of program participants (Abrams & Jernigan 1984; Chaney et al. 1998).

An important factor in shaping college retention and the success of retention programs is

the ability to identify students who are at risk of failing. Unfortunately, academically challenged

college students frequently do not seek help until it is too late to avoid failing or dropping out

(Tinto 1993). Some colleges have instituted faculty monitoring, whereby faculty members who

notice students struggling report these students to the counseling office. The counseling office

then directs students to academic support services *before* students fall too far behind in their

work (Tinto 1993).

Increasing tutoring services and early identification of students who need academic support services likely would have a major impact on college retention.

Faculty interaction with students is an important aspect of academic integration into an

institution. Tinto (1993) and Nippert (2000) find that faculty interaction increases the likelihood

of retention at both four-year and community colleges and that student interaction with faculty is

positively associated with GPA even after controlling for background factors (Tinto 1993).

Furthermore, although connecting with faculty may be most important during the freshman year,

at many universities freshmen have the least opportunity to connect with faculty members (Tinto

1993).

Universities seeking to boost their retention rate should find new ways of encouraging faculty interaction with students, especially in the freshmen year.

Remediation

Remediation is both a challenge *and* an opportunity for academically underprepared students and remedial classes are widely offered at 2- and 4-Year institutions. Of students enrolled in community colleges, nearly two-thirds take at least one remedial class (Adelman 2004; Deil-Amen & Rosenbaum 2002). Even at selective colleges, it is common for many students to take remedial classes (Kreysa 2006).[13] As a result, research indicates that many college students enroll in one to three semesters of courses but because the majority of the courses they take are remedial, students frequently earn fewer than ten college level credits (Adelman 1999, 2004; Deil-Amen & Rosenbaum 2002, 2003). Remediation increases the time-to-degree and the likelihood of graduation decreases with each remedial class a student is required to take (Rosenbaum 2004). The relationship between remedial courses and time to degree and the likelihood of graduation is explained by two factors. First, many students enroll in remedial classes because they are unprepared for college and thus are unlikely to graduate in the first place. Therefore the remedial class is not a barrier to graduation, but rather an indicator that the student is academically weak or unqualified to be in college. Second, remedial classes do cause a barrier to low-SES students who attend college part-time. Students, who begin college and find that college will cost them significantly more money than originally anticipated, because they must pay for many non-credit classes, are likely discouraged from continuing their education.

While remediation provides an increased level of access for academically unprepared students, the relationship between remediation and college retention is complicated. Kreysa

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[13] Nationally, approximately one-third of college students report taking remedial classes (Horn et al. 2006); though this is likely an undercount. Deil-Amen and Rosenbaum find that many students do not realize they are enrolled in non-credit remedial classes at the college level (2002, 2003).

(2006) argues that remediation coupled with academic support services could significantly improve completion rates. However, it will take additional research to determine whether investments in remediation are better than investments in other retention strategies (Breneman & Marisotis 2002).

College Bridge Programs

College bridge programs help students by preparing them for the academic rigors of college before the regular academic year begins (Engle et al. 2006). College bridge programs specifically designed to assist at-risk students can increase retention (Chaney et al. 1998; Thayer 2000). Research indicates that programs at Drexel University and Michigan State University, where college bridge was combined with group living space and intensive support services, are both effective (Thayer 2000). Of course, these programs are intensive, requiring substantial resources per student. In general, college bridge programs are associated with increased institutional retention, but since many of the students in college bridge programs also receive other services, the direct effect of the bridge program is difficult to isolate.

One important outcome of college bridge programs is that participants make friends and form peer networks, which can affect retention (Chaney et al. 1998; Thayer 2000). Mentoring programs also increase retention. For example, mentors at the University of New Mexico and California State University at Fullerton help new students adjust to the college environment by serving both as advisors and as gateways to peer groups (Tinto 1993). Unfortunately, research on college peer groups and mentoring is limited and many questions remain about their effect on social integration, retention and persistence rates.

Course Selection and College Major

Selecting courses at college is a challenge for many students. Students must carefully choose classes, as only a fraction of courses offered at a college are generally required for any individual degree program (Deil-Amen & Rosenbaum 2003). Interviews with predominantly low-SES and first-generation students find that many students do not know which courses are required to complete their degree (Deil-Amen & Rosenbaum 2002, 2003). Additionally non-traditional students report taking many classes unrelated to their major and that do not count toward graduation (Deil-Amen & Rosenbaum 2002).

In addition to selecting coursework, researchers expect that choosing a major is a challenge for low-income and first-generation students. In a study of college choice among Chicago Public School students, who are overwhelmingly low-income, researchers found that many students fail to apply to *any* college because they cannot decide on a career choice (Roderick, et al. 2008) and therefore a major at college. Research shows that difficulty deciding on a major in college can make it difficult to earn enough credits to graduate (Schneider & Stevenson 1999). Moreover, when studying programs designed to help academically underprepared students, Kreysa (2006) found that choosing a major had different effects on academically prepared students compared to academically challenged students, with degree completion positively associated with changing major if those students received academic support. It seems likely that disadvantaged students, particularly those at large universities, face similar challenges selecting courses and deciding on a major as those found by Deil-Amen and Rosenbaum at community colleges (2002, 2003). However, research on these more "mundane" challenges is lacking, even though increased time to graduation and the additional expense of

taking "unnecessary" classes disproportionately affects low-SES students.[14] There remains little conclusive research about choice of major and its effect on likelihood of persistence to degree.

Section VI: Social Factors in Retention and Persistence

In Tinto's original model (See Figure 4 on page 33) of college retention, social integration was second to academic integration as the strongest factor predicting institutional retention (1975, 1993). Two social factors are very important at the college level. First, social interaction is very important to retention at a particular institution. Social integration includes interactions with other students as well as interactions with college staff. Most colleges use Tinto's model to improve the first-year experience and design programs to foster social integration, such as freshman seminars and requiring that students live on-campus; as students who live with their parents appear less likely to continue at college as compared to students who do not. Second, external family issues affect student retention and persistence. Parents remain important in financing college for most students. In addition, students who have a family of their own will have difficulty integrating into campus, as there are significant off-campus family demands on their time and attention.

Social Integration

Tinto's model shows that for students at four-year residential colleges, social integration is the second most predictive factor of retention (Grant-Vallone et al. 2004; Nora, Cabrera, et al. 1996; Pascarella & Chapman 1983; Tinto 1975, 1993). Students who feel they do not "fit in" or "belong" at a college are more likely to drop out or to transfer to a different institution. Social

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[14] **Counseling at College:** Low-SES students also are most likely to attend colleges where there are few counselors available to help them choose classes (Deil-Amen & Rosenbaum 2003). Community colleges tend to have counselor rations of 800:1, whereas many private and vocational schools that have higher graduation rates keep ratios below 200:1 (Deil-Amen & Rosenbaum 2003). Low-SES and first-generation students are the least likely to have academic and career counselors at the colleges they predominantly attend, despite the fact that they are the most likely to need counselors.

integration includes making friends and interactions with other members of the campus community.

Many colleges attempt to foster social integration by requiring students to live on-campus the freshmen year (or longer). Breneman and Merisotis (2002) find that students who live on-campus the freshmen year experience increased social integration - more interaction with peers and faculty members and participate in more extra-curricular activities. The effect of social integration is even stronger for low-SES students than for medium- to high-SES students. Research shows that first-generation students receive a greater than average benefit from participation in extracurricular activities and living on-campus (Pascarella et al. 2004). It is important to note that while participation in extracurricular activities has a positive effect on retention; notable exceptions are participation in intercollegiate athletic programs, off-campus work, and volunteer work, which have a negative effect on retention and persistence (Pascarella et al. 2004). However, research shows that first-generation students, while deriving the greatest benefit from these activities, are the least likely to live on-campus or participate in extracurricular activities. Unfortunately it is difficult to encourage low-SES students and first-generation students to get involved in activities, especially when those students live off-campus or work. It is possible that students are not participating in campus activities because they are working.

Programs to increase low-SES and first-generation student retention at college are needed encourage greater social integration and participation from their targeted groups.

Graph 5: Percent Distribution of Undergraduates' Attendance Patterns in Community Colleges and 4-Year Institutions: 2003-2004
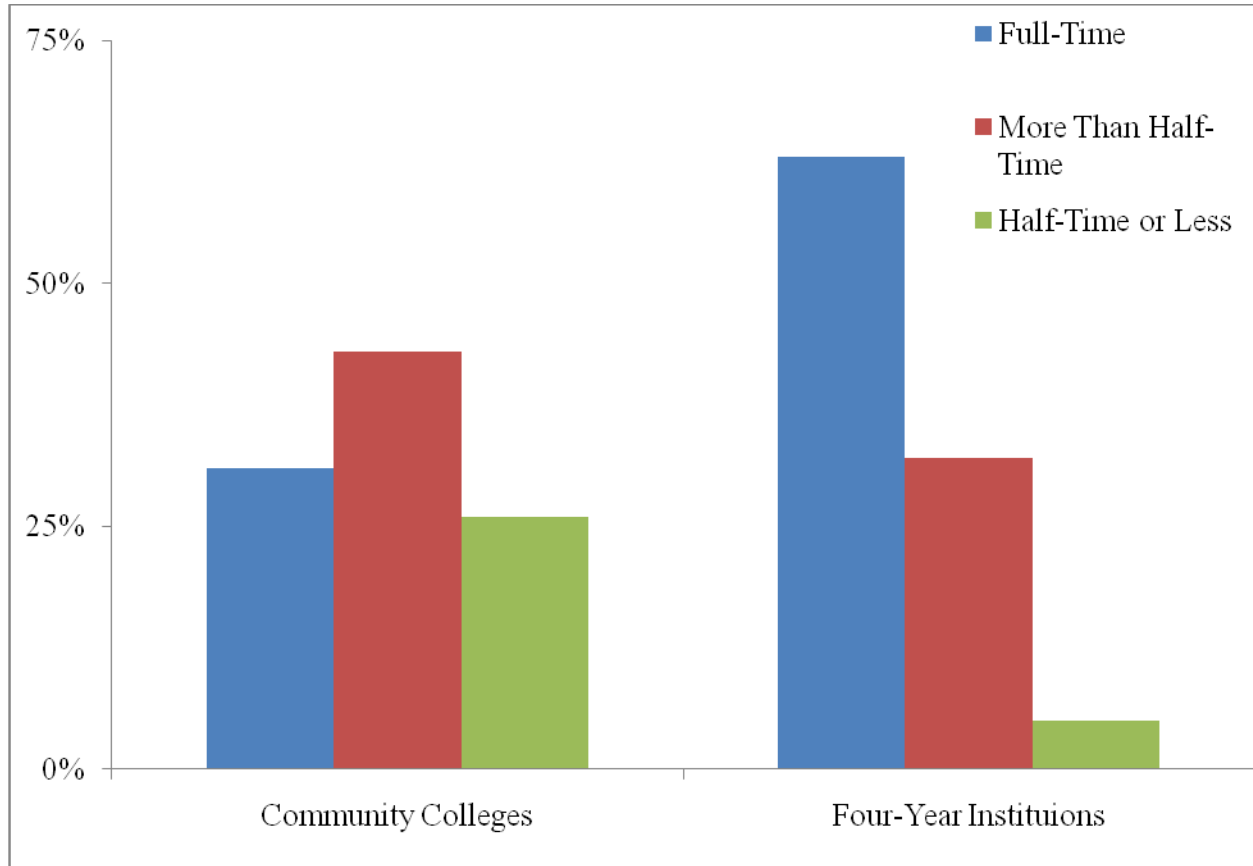
Adapted from: Horn, Laura, S. Nevill, and J. Griffith. (2006). Profile of Undergraduates in U.S. Postsecondary Education Institutions, 2003-04: With a Special Analysis of Community College Students. National Center for Education Statistics, U.S. Department of Education, Washington, D.C.

Part of the confusion in determining factors associated with college retention and persistence is that institutions vary. Tinto's model was designed for four-year, residential colleges (Tinto 1975; 1993; 2003). However 35% of all postsecondary students are enrolled in community colleges (Provasnik & Planty 2008), and in Illinois the majority of college undergraduates are enrolled in community colleges (Berkner & Wei 2006). Community colleges are almost entirely commuter colleges, and there are also 4-year colleges that are primarily commuter colleges as well. In addition, Tinto's model does not address students who attend college part-time or older students.[15] Researchers find that for students at commuter colleges,

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[15] **Age and Life Stage:** The traditional picture of a college student is someone in her late teens or early twenties attending a four-year college full-time with the goal of completing a degree. However, today 25 percent of all

social integration is unimportant in predicting either retention or persistence (Braxton & Lee 2005). Unfortunately, with such a wide variety of colleges, it is not possible to make blanket statements about which factors are important to all college students.

Parental Support

For many college students, parents continue to be important to student success in college. Two areas are of particular interest to researchers and college administrators: 1) the effect of parental support on students not living at home compared to students who do live at home, and 2) the role parents play in financing college education.[16] Many students choose to live at home while they attend college. For these students, interactions with parents and family members can be an important factor in college persistence (Tinto 1993). First-generation students who chose a college or university because they can live at home are slightly more likely to persist than students who do not choose an institution so they can live at home (Lohfink & Paulsen 2005). The current, albeit limited, research on low-SES and first-generation students attending college who do *not* live at home suggests that for these students, parental support is not a strong

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undergraduates are at least 30 years old and less than half of undergraduates (47%) are in the traditional 19-23 age bracket (Horn, Nevill, et al. 2006; Louie 2007). Furthermore, a significant percentage of students are now alternating between full-time and part-time enrollment, transferring multiple times, or attending more than one institution simultaneously (Adelman 1999; Berkner, He, et al. 2002; Hagedorn 2005; McCormick 2003; Mortenson 2005). The changing "non-traditional" demographic of college students is most prevalent among low-income students who are the most likely to be independent, attend part-time, and work full-time (Corrigan 2003). For these reasons, it is very difficult to determine such simple questions as degree completion rates for low-income students, much less to determine how variables such as peer influence, tutoring, services, and financial aid affect persistence. Moreover, the national datasets used to determine the college going rate and degree completion rates can be misleading. For example, upon inspection, Adelman finds that many survey respondents claiming to be college students had never enrolled in college credit courses (Adelman 2004).

[16] **Filling in the Funding Gap:** It remains unclear how students make up the gap between estimated revenues and expenses in financing higher education. Parents may contribute substantially more than the federal government's estimate, the expected family contribution (EFC), students may work longer hours than they report, or low-income students may receive additional resources from extended family and friends (Advisory Committee on Student Financial Assistance 2002; Choy 2000). Additional research is needed to understand how low-SES students finance a college education.

predictor of retention (Grant-Vallone et al. 2004). Unfortunately, there is not enough research in this area to determine the role of parental expectations in retention and persistence.

Section VII: Economic Factors in Retention and Persistence

Financing college is a consistent significant challenge for students and their families and low-SES students report considerable stress caused by financing their education (ACSFA 2002).[17] While the barriers students face when initially applying for aid have already been discussed, financing college is a continuing source of anxiety for students and families. Moreover, financial stress affects a student's ability to integrate into campus life and can inhibit social interaction (Nora, Barlow, et al. 2005). Finally, even though states and colleges have increased grants to students, Choy (2004) finds that these increases have failed to keep pace with the rise in college tuition and fees. Students currently face several challenges to financing their educations that continue throughout their time in college, including acquiring loans and becoming comfortable carrying loan debt, finding grants and scholarships, and working while in college.

Loans

The degree to which students rely on loans to finance their education is evidenced by the rapid increase in graduate debt loads. Among students who graduated with loans in 2007, the average debt load was greater than $20,000 dollars (Ho 2008, November 11). While this is a large amount of money for a new graduate to owe, this average debt level is not unreasonable as it is comparable to a car loan. However, for low-SES students, loans constitute a significant burden. Though low-SES students are the population most in need of loans to finance higher education, low-SES students and their families are the most debt-averse population (Baum &

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[17] Among the class of 2004, students who had entered and subsequently left the postsecondary system cited financial concerns as their primary reason for stopping or dropping out (Bozick & Lauff et al. 2007).

O'Malley 2002; Burdman 2005; Terenzini, et al. 2001). Debt-averse low-SES students have developed three strategies to finance their higher education. First, they opt for community colleges to save on tuition (Choy 2004; Heller 1997; Leslie & Brinkman 1987). Second, they are more likely to live off-campus or at home to save money. For examples, a large percentage of students who say that their choice of college was primarily dependent on the college being close to their home likely live with their parents to save money (Bozick & Lauff 2007). Third, students who are from low-SES backgrounds work long hours and/or attend college part-time to overcome the gap between financial aid and attendance cost (ACSFA 2001, 2002). The shortage of need-based aid coupled with the increased necessity of loans to finance a college education has caused low-income students to adopt strategies that make them less likely to complete a college degree. For example, working long hours and living off-campus lowers social integration. Moreover, since low-SES students are more debt averse than average, the necessity of financing college through loans likely results in low-SES students abandoning college plans either before they begin college or after they have accumulated significant debt.

Grants and Scholarships

Grants and scholarships constitute a major component of low-SES students' college finance strategies, especially at four-year institutions (Choy 2000, 2004; Kane 2003; Leslie & Fife 1974). Dynarski (2003) finds a strong linear relationship between the amount of money low-SES students receive, and their probability of persisting in college even when controlling for background factors. Unfortunately, while increased grants and loans are crucially important for low-SES students, the trend in recent years has been toward merit-aid, which predominantly benefits middle- and upper-SES students (Hawkins et al. 2005; Long 2007). For researchers, it can be difficult to remove the effects of family income from the effects of grant aid, as students

who are eligible for need-based aid also come from low-SES families (Long 2007). Moreover, there is strong evidence that the negative effects of being low-SES on degree completion cannot be overcome by grants and aid alone. At Berea College, where all students receive a full-tuition subsidy, and all students are low-SES, the poorest students are more likely to drop out of college than the comparatively "wealthier" students (Stinebrickner & Stinebrickner 2003).

Working

Since the 1970s the percentage of students working while they are in college has dramatically increased. Between 1970 and 1995 the proportion of college students working full-time increased by 14 percentage points; and there was a doubling in the percent of students working more than 20 hours per week (Schuh 2005). Perhaps of more concern, among full-time college students who work, one-fifth work full-time, and nearly half work more than 21 hours per week (Terenzini, et al. 2001). This increase in working constitutes a major challenge for students as research shows a negative association between the number of hours students work and their probability of completing a college degree (Jacobs & King 2002; Tinto 1993). Students who work long hours spend less time studying or interacting with their fellow students, which decreases the probability of graduating from college; over one-third of students report that working has a negative effect on their coursework (Schuch 2005). Additionally, work schedules can delay degree completion because classes may not be offered at times convenient to working students (Deil-Amen & Rosenbaum 2003). For example, on-campus part-time employment is associated with increased degree completion (Astin & Oseguera 2005).

Despite the negative association between work and college retention, there are some opportunities to help working college students. Astin and Oseguera (2005) find that while work is generally negatively associated with retention, working on-campus is positively associated

with retention. One would expect that on-campus employment reinforces social integration and thus has a positive effect on retention. Colleges and universities may be able to promote retention by increasing the number of student employment positions available to students. Deil-Amen and Rosenbaum (2003) argue that colleges could benefit students by spending more time helping students find quality off-campus jobs while they are enrolled. If student must work off-campus, it would be best for the students to gain work experience related to their college major and their career goals. Rather than viewing students who work as an unfortunate necessity, colleges that help students find work in their fields, even if it is part-time and of lower pay, might increase degree completion (Deil-amen & Rosenbaum 2003).

Work is often a necessity to finance college, particularly for low-SES students. Since working on-campus is positively correlated with retention and persistence, colleges should encourage more low-SES students to take on-campus employment. In order to help students who must work off-campus, colleges should help students find rewarding jobs that align with the student's course of study and career goals.

Conclusion

Academic factors are the most important to college access at the high school and college level. Students who are academically strong are the most likely to pursue and complete a college education. Students' academic ability, more than race, sex, SES, or any other characteristic, is the strongest predictor of college enrollment. Academic factors are also the single best predictor of success in college. Students who enter college with a strong foundation from high school, who do not repeat courses, and who do not need extensive remediation are the most likely to graduate. Goldberger (2007) argues that in order to significantly increase the college going rate of low-SES students, new ways must be found to increase low-SES academic achievement in high

school. Of course, many academically average and weak students also enroll in college and students with weak academic indicators are neither barred from attending college nor doomed to be unsuccessful in college. Research clearly shows that students who are offered and accept academic help can significantly improve their academic performance, especially when academic assistance is coupled with social integration, such as peer tutoring. Many students who are unlikely to succeed in college remain unaware that they are unlikely to earn a degree. Unfortunately, many students never connect the importance of academic training to earning a college degree and are left with college debt but no degree.

In addition to academic training, guidance from a helpful and knowledgeable adult is important to entering and succeeding in college. Additionally, because low-SES students are concentrated in high schools *and* colleges with fewer dedicated counselors they face additional barriers connecting with knowledgeable adults for guidance. Moreover, low-SES students generally choose colleges that provide limited contact with other students or faculty members, leaving them unable to socially integrate.

Students and parents across all SES levels have little understanding of how to pay for college, what college costs, or what programs are available to help finance the cost of college. The financial aid system is byzantine in its complexity and unresponsive to students with unique circumstances. Low-SES students lack programs designed to overcome financial barriers. Even when low-SES students are academically prepared and socially integrated they still have fewer resources to fund a college education. Pell grants have lost much of their purchasing power and states have cut back subsidies to public colleges and universities. In order to finance higher education, both mid- and lower-SES students have increased their reliance on borrowing. Debt-averse students have adopted strategies to finance their educations that are not conducive to

success. First, low-SES students have increased the number of hours they work while in college. Second, they have chosen to attend college part-time to lower the immediate cost of education. These two strategies, coupled with their preference for community colleges or other schools to which they can commute from home, limit social integration on campus. By limiting social integration, low-SES students may be decreasing their likelihood of succeeding in college.

Many programs exist with the goal of increasing college access. The federal government created the TRIO programs to increase low-income and first-generation students' access to and success at college. However, the federal TRIO programs have the funds to help only 10 percent of low-income and first-generation college students (Swail 2000). Colleges, high schools, and non-profits have also designed a multitude of programs to increase college access. However, there is little rigorous research evaluating these programs and many of these programs cannot be widely implemented due to their high cost per student.

While there is a considerable amount of research on college access, many questions remain unanswered. Much more is known about the factors that affect the decision to apply and enroll in college than the factors important to success at college. One possible reason is that administrators and researchers have viewed K-12 education as a more cohesive system. There are wide differences among colleges and universities, and it is only recently that they have been viewed as part of a larger postsecondary system.

At the college level, the majority of research into retention and persistence is limited to four-year residential colleges. For example, community colleges enroll well over one-third of students at the postsecondary level, yet have received little research attention (Bozick et al. 2008;

Deil-Amen & Turley 2007; Wellman et al. 2009).[18] In addition, the available research credits social integration as being, second to academics, the most important factor in retention. Yet retention research often ignores transfer students, and the *majority* of students transfer (Adelman et al. 2003). Social integration may explain why students stay at one institution, but research into transfer students, understanding why students transfer and why they stay at the institutions they graduate from is desperately needed. More recently, there has been rapid growth in for-profit and online education providers, such as DeVry University or the University of Phoenix. Very little research investigates the ways in which for-profit and online educational providers affect college going and persistence.

In conclusion, three factors are particularly important to improving the college going rate of low-SES students. First, teaching the importance of academics and boosting the academic performance of low-SES students should be the most important goal of any program attempting to increase low-SES college going and college graduation. More than any other factor, including SES, academics are the most predictive indicator of college attendance and graduation, and low-SES students are the least academically prepared.

Second, improving social integration on college campuses and bolstering counseling at high schools and colleges is critically important. Low-SES students have the least access to guidance counselors and other knowledgeable adults but they remain the most likely to need non-familial adult guidance. Whether teachers, mentors, or traditional guidance counselors are used, bolstering adult guidance for low-SES students is needed if these students are to successfully navigate the college pipeline.

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[18] Illinois has an above average number of community colleges students. Approximately 60% of all college undergraduates in Illinois are enrolled in community colleges (Berkner & Wei 2006).

Third, students and parents need more information about financing college. However, proliferating generic knowledge such as putting general information on line or providing information packets to students and parents will likely be ineffectual. Instead, students and parents must be taught how to navigate the financial aid process. Moreover, states, colleges, and the federal government will need to find ways of simplifying the financial aid application process and adjusting to students' and parents' unique circumstance. Finally, low-SES students require need-based aid. In order to finance college, low-SES need the time and support required to maintain academic success and integrate into campus life.

Recommendations

#1	Increasing the academic ability of low-SES high school students is the most important factor to increasing low-SES college attendance. Any college access program dealing with high school students should make academic improvement central to the program's mission.
#2	College access programs should encourage students to develop realistic aspirations and help those unqualified for college to find more suitable educational or vocational opportunities.
#3	Providing social capital supplements and a supportive adult to help students with college search and application can significantly affect low-SES and first-generation college attendance.
#4	Training high school teachers to assist students with college search and application could increase college access for low-SES students.
#5	Students must receive accurate information on how financial aid works.
#6	If the State of Illinois wants to provide aid to undocumented students it should develop an alternative state form in lieu of the FAFSA.
#7	Need-based aid should be increased for low-SES students, as this form of aid is the most targeted.
#8	Students need to be encouraged to apply to several colleges, and application fees should be waived if doing so will result in low-SES students applying to more institutions.
#9	Since low-SES students are frequently academically unprepared for college, programs and policies that address academic deficiency are critical to boosting college persistence among low-SES students.
#10	Tutoring services should be increased at colleges, and students who need academic support should be targeted early.
#11	Colleges need to develop programs specifically aimed at increasing social integration on campus among first-generation and low-SES students.
#12	Since on-campus employment is positively correlated with retention and persistence, colleges should encourage more low-SES students to take on-campus employment. When students must work off-campus, colleges should help students find jobs that align with the student's course of study and career goals.

Key Findings

#1	The research literature is inconclusive with regards to immigrant status and college access.
#2	Available research suggests that although peers may influence student perception of college and whether to go to college, they are not a major factor in the decision of whether or not to attend college. Programs seeking to harness the power of peers are not likely to improve college access.
#3	It is increasingly important to understand the effects of using merit-based aid versus need-based aid.
#4	Until the federal government changes the current financial aid system, undocumented students are likely to continue to encounter tough barriers to college.
#5	Universities seeking to boost their retention rate should find new ways of encouraging faculty interaction with students, especially in the freshmen year.

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