
INFORMED PRACTICE:
Syntheses of Higher Education Research for Campus Leaders

The School- to-College Transition:

Challenges and Prospects



American Council on Education
Center for Policy Analysis

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by Patricia M. McDonough



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One Dupont Circle NW
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Foreword

In May 2001, the American Council on Education (ACE) convened a meeting to assess the current state of analysis of higher education policy issues. The purpose was to identify ways in which the needs of institutions, the interests of foundations, and the talents of scholars could be better aligned. Participants included higher education scholars, foundation executives, college and university presidents, and education policy analysts.

In particular, we were eager to learn how ACE could help make research on higher education more accessible and useful to institution leaders. Several participants suggested that ACE produce short publications that summarize the findings of important areas of higher education research. We have embraced that suggestion and created a new series, *Informed Practice: Syntheses of Higher Education Research for Campus Leaders*. The first report in that series, released in 2002, *Access & Persistence: Findings from 10 Years of Longitudinal Research on Students*, summarized major findings on access, persistence, and outcomes from a decade of federally funded longitudinal studies of college students. In 2003, we continued the series with *Diversifying Campus Revenue Streams: Opportunities and Risks*, summarizing the emerging literature on the myriad ways that campuses are raising revenue and the issues and problems that leaders must confront as they consider such new ventures.

As school districts around the country face the first round of potential sanctions under the No Child Left Behind legislation, and colleges confront increased scrutiny of graduation rates, we thought a focus on the school-to-college transition would be timely. We are very grateful to the Bill & Melinda Gates Foundation for its support of this year's essay. Patricia McDonough, a leading scholar on how students, schools, and colleges manage this critical transition, has summarized the large body of research on access to college, focusing in particular on how campus and system leaders can help schools better prepare low-income and minority youth for success in higher education.

We hope you will share this report with your staff and that it will spark useful conversations on your campus. Additional copies are available for purchase or may be downloaded from the ACE web site. We welcome your suggestions for areas of research that future essays should address and for ways we can make these documents more useful to you.



Jacqueline E. King

Director, Center for Policy Analysis

Executive Summary

Within U.S. elementary and secondary schools, the pathway to college access is marked by vast disparities in preparation for, knowledge of, and attitude toward college. How do students get to college? Student aspirations precede the development of college plans, college preparation precedes college choice, and all of these steps are the precursors to college enrollment. Over the course of elementary, middle, and high school, students pass through predisposition, search, and choice stages in which they decide whether to attend college, search for information, consider specific colleges, and finally choose their college destination.

Fortunately, a convergence of research evidence indicates the clearest priorities for shrinking the college access gap. These priorities are to: lower financial barriers to college affordability; ensure better academic preparation for college; encourage counselors to advise students for college and focus schools on their college preparatory mission; increase the quality and quantity of college entrance and financial aid information; engage families as college preparation partners; and create more equitable admissions policies. Removing financial barriers and academic preparation are widely acknowledged as the two first-order priorities in improving college access.

Working to improve college access, though, is not something that colleges and universities can do alone, and it is important to understand the state of K-12 education in order to understand how to improve the conditions of college access. The playing field of education is anything but level, and we have become virtually inured to reports by policy makers, assessment experts, researchers, and journalists about the crumbling K-12 system, especially as it affects students in low-performing schools. Improving K-12 education through effective teaching and offering a challenging curriculum will not only improve college readiness, but also strengthen workforce preparation and educational accountability in general.

Evidence shows that many current accountability systems focus on the educational floor—minimum literacy standards—not the ceiling—college readiness. A wealth of policy reports acknowledge that K-12 schools need significant transformation. Policy makers and foundations express near unanimity, supported by a body of research evidence, that a more inclusive P-16 system would ensure greater alignment between high school exit skills and the skills required for college entry and success.

College outreach and early intervention programs are another means of improving the college access gap. Their proven benefits include: a doubling of the college-going rates for at-risk youth, an expansion of students' educational aspirations, an increase in students' educational and cultural capital assets, and a boost to college enrollment and graduation rates. These benefits are often greatest for low-income students, who enter such programs with low college expectations and low achievement levels.

For their part, college leaders can take six steps to narrow the college access gap now, and many university leaders already have taken some of these steps. Through partnerships with K-12 schools, postsecondary leaders can align placement exams or other college readiness indicators with K-12 standards or exit tests; contribute to teacher professional development to improve the rigor of high school classes; improve school counseling for college; make the student aid system more understandable; make early commitments to middle and high school students who commit to the college track; and develop intervention programs, either individually or in collaboration with other colleges, schools districts, or other statewide partners.

Introduction

Over the last half century, American public policy has offered equal opportunity for a college education as a cornerstone of our free-market economy and democracy. Federal student aid has made that opportunity a reality for many people, as reflected in huge growth in college attendance and educational attainment (Gladieux and Swail, 1999). Sixty-five percent of high school graduates in 2002 immediately went on to college (U.S. Department of Labor, 2003). Yet, for all the opportunity afforded, there remains opportunity lost. Although the college continuation rate is good, it is 25 percentage points lower than the 90 percent of middle and high school students who expect to go to college (U.S. Department of Education, 2003a).

Widespread evidence exists that the United States is experiencing a *de facto* retreat from its longstanding commitment to providing equal college opportunity and instead is offering an increasingly stratified higher education system. We have compelling market forces and legal mandates that are driving admissions offices away from expanding access and toward fiscally and competitively necessary marketing and recruitment strategies (Kinzie et al., 2004). We have K-12 schools that look more often to statehouse and White House imperatives for guidance than to admissions requirements (Kirst and Venezia, 2004). We have a student aid system that is geared less toward expanding opportunity for poor students and more toward making it possible to recruit middle- and upper-income students who would be attending college regardless of that aid (Heller, 2002).

In 2004, the playing field of education is anything but level, and the general public has become virtually inured to reports by policy makers, assessment experts, researchers, and journalists about the large and persistent achievement gaps in the K-12 system, especially for low-income students, urban students, and students of color (Barton, 2004). In fact, despite four decades of major policy efforts, the college participation gap between low-income and high-income students today is roughly the same as it was in the 1960s (Gladieux and Swail, 1999; Pathways to College Network, 2003).

Surprisingly, a majority of adults believe that education is so indispensable that they will do whatever it takes to ensure their child's college attendance (Ikenberry and Hartle, 1998; Miller, 1997). They know that the increasing competitiveness of the global market and the U.S. shift to an information-, service-, and technology-based economy propels a growing need for college-educated professionals. Six out of every 10 jobs in our economy depend on highly trained workers with the requisite advanced skills that are available only to those possessing some postsecondary education or training. In turn, these needs drive the standards movement in K-12 education (Carnevale and Desrochers, 2003; U.S. Department of Labor, 2004).

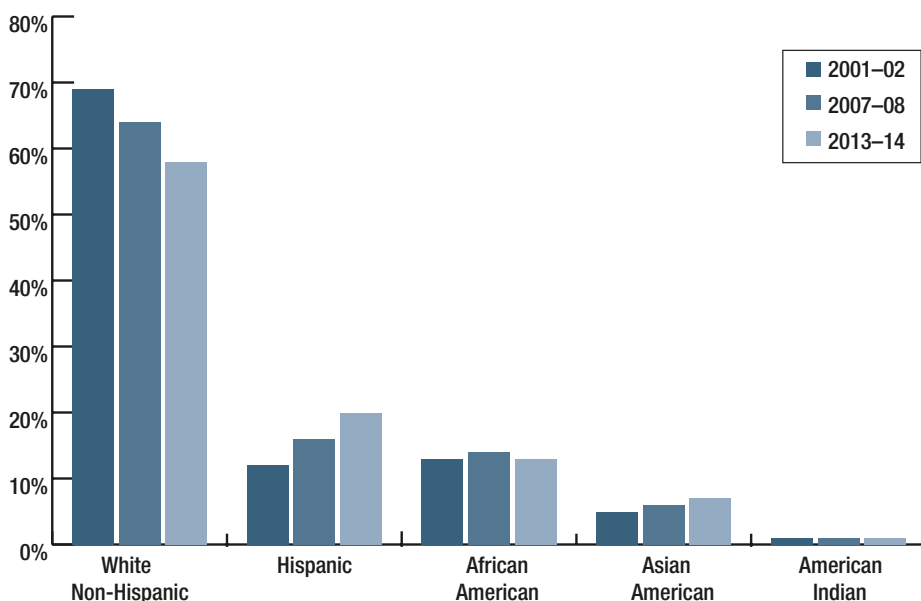
Yet, research shows that, in pockets around the country, college and university leaders can and are narrowing the college access gap with P-16 alignment systems, college preparatory intervention programs, creative teacher professional development to improve the rigor of the high school curriculum, and admissions and financial aid policy changes. However, those efforts need to be scaled-up and replicated across all college and university types.

This report summarizes the growing body of research on the school-to-college transition, focusing on actions that college and university leaders can take to improve low-income and minority students’ access to higher education. After a brief description of today’s students, the report summarizes research on the various stages of the college transition process and on six critical issues that must be addressed to improve college access. One of the key aspects of the school-to-college transition is close partnerships between colleges and K-12 schools. A separate chapter is devoted to two crucial areas for school-college collaboration: P-16 reforms that link high school standards to college readiness, and special outreach programs for low-income and minority students. The report ends with three tools for college leaders: research-tested action steps that colleges and universities can take to improve college access; a set of key questions to prompt institutional research and conversation; and an annotated bibliography of selected key studies for further reading.

Today’s Students

With 16.5 million undergraduates, colleges today enroll more students than ever before: Today’s undergraduate population is 72 percent larger than it was in 1970 (U.S. Department of Education, 2002b). Fifty-six percent of these students are female, and 57 percent are under age 24. Sixty-seven percent of undergraduates are white, 7 percent are Asian or Pacific Islander, 12 percent are African American, 11 percent are Latino, 1 percent are Native American, 1 percent are classified as “other,” and 2 percent indicated they are of more than one race (U.S. Department of Education, 2002a).

Figure 1 Distribution of Public High School Graduates, by Race/Ethnicity: 2001–02 (Actual), 2007–08 (Projected), and 2013–14 (Projected)



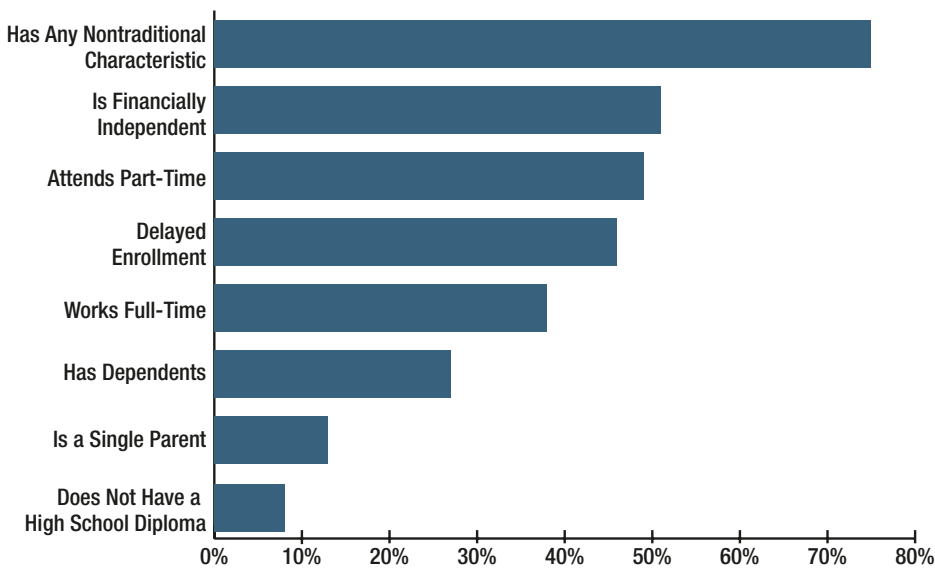
Source: WICHE, 2004.

Only about half of African-American and Latino ninth graders graduate from high school, compared with 79 percent of Asian Americans and 72 percent of whites (Pathways to College Network, 2003). Yet, the overall total number of high school graduates is growing, and is projected to peak in 2008 at 3.2 million. Fifty percent of those graduates will come from families making \$50,000 or less, with 16 percent of them coming from families making less than \$20,000. Whites will account for 64 percent of graduates in 2008 and this will represent a decline in both number and share of graduates (see Figure 1). These projections suggest that 80 percent of new college students will be people of color, half of whom will be Latino, and a disproportionate number of students of color will be poor or of moderate income (WICHE, 2004).

How students are spread across the institutional landscape of higher education is also interesting. More students today are enrolled in four-year institutions than in community colleges. Whites and Asians are more heavily represented at four-year institutions, and underrepresented minorities are heavily concentrated in community colleges. The older the undergraduate, the more likely it is that he or she will attend a community college and, similarly, the higher a student’s family income, the higher his or her chances are of attending a four-year college.

“Traditional” students represent just 25 percent of all undergraduates (U.S. Department of Education, 2002b), meaning that one or more of the following characteristics apply to three-quarters of all undergraduates: delayed enrollment after high school, attends part-time, works full-time, is financially independent of parents, has dependents other than a spouse, is a single parent, or does not have a high school diploma (see Figure 2). Because this report focuses on the school-to-college transition, nontraditional students are not the focus here, but we need to remember that they are represented to varying degrees at almost every institution.

Figure 2 Percentage of Undergraduates with Nontraditional Characteristics: 1999–2000



Source: U.S. Department of Education, 2002.

The Transition to College

The pathway to college is marked by vast disparities in college preparation, college knowledge, and college culture within schools (McDonough, 2004). In 1992, 82 percent of students whose parents were college-educated enrolled in college directly out of high school, but only 54 percent of students whose parents had completed high school, and only 36 percent of students whose parents had less than a high school diploma, immediately enrolled in college after high school (U.S. Department of Education, 2004). In 1992, 64 percent of whites, but only 55 percent of blacks and 52 percent of Hispanics, immediately enrolled in college after high school. In 1992, only 44 percent of students from low-income families—but 80 percent of those from high-income families—immediately enrolled in college after high school.

How do students get to college? A major new report from Educational Testing Service acknowledges that college preparation begins in preschool (Carnevale and Desrochers, 2003). Students aspire to, apply to, and then enroll in college through a complex, longitudinal, interactive process involving individual aspiration and achievement, learning opportunities and intervention programs in high school, and institutional admissions (Hossler, Braxton, and Coopersmith, 1989; McDonough, 1997; Oakes, 2004).

Student aspirations precede the development of college plans, college preparation precedes college choice, and all of the foregoing are the precursors to college enrollment. Over the course of elementary, middle, and high school, students pass through predisposition, search, and choice stages, in which they decide whether to attend college, search for information, consider specific colleges, and finally choose a college destination (Hossler, Braxton, and Coopersmith, 1989).

Students must begin to develop college awareness and aspirations in the middle school years in order to take algebra and other gatekeeping courses.

Generally speaking, the predisposition stage is when a student begins to develop occupational and educational aspirations, and this generally occurs from elementary school age on through middle school. Research shows that most students have some post-high school educational or job plans by the ninth grade (Stage & Hossler, 1989). Students must begin to develop college awareness and aspirations in the middle school years in order to take algebra and other gatekeeping courses, which then position students for high school coursework that aligns well with college enrollment requirements. Students and their families must have counseling to

develop this awareness and planning, and middle schools must raise both their standards and their expectations (Gullatt and Jan, 2002). It is at this stage that students should be informed of college entrance requirements, be enrolled in a college preparatory curriculum, be engaged in extracurricular activities, and begin to learn broadly about financing a college education (Cabrera and La Nasa, 2000; Hearn and Holdsworth, 2004).

During the 10th through 12th grades, students are in the search phase, which involves gathering the information necessary for them to develop their short list of potential colleges (Cabrera and La Nasa, 2000). In this phase, high socioeconomic status (SES) students have more information sources, are more knowledgeable about college costs, and tend to have parents who are engaged in saving for college (Hossler, Schmidt, and Vesper, 1999).

The phase in which students choose a college to attend begins in the 11th grade, and usually culminates in the 12th grade. College costs and financial aid play a dramatic role in the college choices of low-SES students, as well as African Americans and Latinos, all of whom tend to be highly sensitive to tuition and financial aid levels (Heller, 1999). These students are negatively influenced by high tuition (McPherson and Shapiro, 1998) but positively influenced by financial aid (Berkner and Chavez, 1997).

Many students have difficulty negotiating the school-to-college transition, given most K-12 schools systems' limited capacity for college preparation. One policy report's assessment is that the current structure of middle and high schools is inadequate to prepare minority, low-income, and first-generation students to attend college; changing that condition would require significantly transforming high schools, and possibly reinventing education as a more encompassing P-16 system (Martinez and Klopott, 2003).

The Problems of College Access

In the last few years, there has been a convergence of advocacy on the problems of college access, based on research evidence. Advocates and researchers alike assert that the following actions are necessary to improve college access:

1. Lessen the financial barriers—both real and perceived—to college affordability (Heller, 2002; King, 1999; St. John, 2002a).
2. Ensure better academic preparation for college by improving K-12 school conditions, attending to the needs of urban and rural school districts, and building P-16 educational systems that engage the elementary and secondary communities in efforts to improve students' college preparation and readiness (Aspen Institute, 2003; Gladieux and Swail, 1999; Oakes, 2004; Pathways to College Network, 2003; Perna, 2004).
3. Encourage counselors to advise students and schools to focus on their college preparatory mission (Gandara and Bial, 1999; King, 1996; McDonough, 2004; Tierney et al., 2004).
4. Increase the quality and quantity of college entrance and financial aid information for students and parents, and disseminate information more efficiently (Hossler, Schmidt, and Vesper, 1999; Kirst and Venezia, 2004).
5. Engage families as partners in aspiration development and maintenance, academic preparation, and enrollment, particularly for at-risk students (Choy, 2002; Flint, 1992; Hossler, Braxton, and Coopersmith, 1989; Hossler, Schmidt, and Vesper, 1999; St. John and Noell, 1989; Tierney and Auerbach, 2004).
6. Create more equitable admissions policies (Avery et al., 2003; Breland et al., 2002; Tienda et al., 2003).

Of these challenges, researchers and policy makers almost always point to removing financial barriers and improving academic preparation as the twin keys to college access, while acknowledging the crucial role played by the other four factors. What follows is a summary of the research evidence pertaining to each of these six areas.

Financial Barriers

Financial aid and college costs are thought by many policy makers and researchers to be the *sine qua non* of college access (Advisory Committee on Student Financial Assistance, 2002; Gladieux, 2004; Heller, 2003; Stampen and Hansen, 2004). Heller (2002) and his colleagues cite rising college prices, increasing numbers of poor students and students of color, and the growth of merit-based financial aid as urgent conditions that require the nation to make increased access to higher education for lower-income students a priority. In

both perception and reality, college affordability is plummeting as unmet financial need is increasing, student loan debt is mounting, and financial aid is increasingly awarded in the form of merit aid. Moreover, institutional practices like tuition discounting, and increased reliance on loans are necessary for enrollment management and competitiveness, but have resulted in increased stratification among student populations (McPherson and Shapiro, 1998).

The Advisory Commission on Student Financial Assistance (2002), in examining the most academically qualified college applicants, found that millions of high school graduates from low- and moderate-income families likely will not be able to afford to enroll in college unless the federal government and the states revitalize the need-based financial aid system. The commission found that the majority (56 percent, or 1.6 million students) of students who graduated from high school in 2002 were from families with incomes under \$50,000. Of those students, 56 percent, or approximately 897,000, were academically qualified to attend a four-year college, as defined by the U.S. Department of Education. St. John (2002b) estimates that 22 percent of low-income, academically qualified students do not attend college, at least in part because of affordability concerns, even taking student aid into account.

In general, many students and their families lack awareness and understanding of college prices and financial aid. This lack of awareness and understanding limits many students of color and low-SES students' preparation for college. Aspirations do not develop when college seems financially unattainable.

Academic Preparation

The gap in K-12 academic preparation and college participation rates between white students and African-American and Latino high school graduates has widened over the last several decades (Gladieux, 2004; Oakes, 2004). Underrepresented minorities and low-SES students often make their college preparations while constrained by a lack of trained professionals to advise them. Moreover, within their schools and families, there exists a lack of college knowledge, training, and advising, as well as the invisible barrier of their schools and teachers' low expectations of them (Oakes et al., 2002; Obidah et al., 2004). Finally, in the current era of continued challenge to affirmative action, when these students do prepare for and enroll in college, they often face campus climates of presumed lack of merit and racial hostility (McDonough, 1999). Because of these structural and motivational barriers, low-SES students and their parents struggle to get basic information and assistance in order to sustain their college aspirations.

No better predictor of college enrollment (and completion) exists than the rigor of high school courses, specifically advanced mathematics (Adelman, 1999). For all students, academic achievement remains the most important determinant of whether and where they go to college (Cabrera and La Nasa, 2000; Perna, 2004). Yet, across all achievement levels, students from the lowest SES groups are less likely to apply to or attend college than are the highest SES students, while students of color and poor students are less likely to start or finish college (Mortenson, 2001; Perna, 2000; Perna and Swail, 2002; Terenzini et al., 2001).

Many researchers and policy makers are calling for a college preparatory curriculum to be the default high school curriculum in the United States for several reasons. The first reason is concern among advocates and researchers that all students, particularly low-SES students and students of color, have access to a challenging curriculum and complete high school prepared for a full range of postsecondary options, including college. Second, raising student achievement helps K-12 educators meet increasing demands for accountability. Finally, current K-12 accountability systems, such as exit exams and achievement tests, are misaligned with college admissions requirements (Oakes, 2004; Pathways to College Network, 2003; Rosenbaum, 2001; Viadero, 2001). (The next chapter will describe the calls for P-16 accountability systems in more detail, and the final chapter will describe two exemplars.)

Creating an environment in which students are expected to achieve academically, and are encouraged and supported to do so, is an essential precondition for college attendance. Four key high school features have a tremendous impact on college attendance: a college preparatory curriculum; a college culture that establishes high academic standards and includes formal and informal communication networks that promote and support college expectations; a school staff that is collectively committed to students' college goals; and resources devoted to counseling and advising college-bound students (McDonough, 2004).

Counselors

The enrollment of graduates in college is not built into public secondary school accountability systems, so no staff member has primary responsibility for college preparatory advising, nor is there a regularly identifiable K-12 staff member held accountable for graduates' college enrollment. School counselors would appear to be the logical choice to provide college access preparation and assistance, and are often assumed to be handling this role, yet they typically are inappropriately trained and structurally constrained from being able to fulfill this role in public high schools (McDonough, 2004).

Creating an environment in which students are expected to achieve academically, and are encouraged and supported to do so, is an essential precondition for college attendance.

From research, we know that counselors influence students' aspirations, plans, enrollments, and financial aid knowledge. Meeting frequently with a counselor increases a student's chance of enrolling in a four-year college and if students, parents, and counselors work together and communicate clearly, students' chances of enrolling in college significantly increase. Moreover, the effect of socioeconomic status on the college enrollment of low-income students is largely explained by the lack of counseling (King, 1996; Plank and Jordan, 2001).

Counselors can perform the following functions to enhance students' college preparation: (1) structuring information and organizing activities that foster and support students' college aspirations and understanding of college and its importance; (2) assisting parents in understanding their role in fostering and supporting college aspirations, setting college expectations, and motivating students; (3) assisting students in academic

Counseling is often tied to the track placement of students. Those students who are not in the college track do not receive college information.

preparation for college; (4) supporting and influencing students in making decisions about college; and (5) focusing the school on its college mission (Hossler, Schmidt, and Vesper, 1999; McDonough, 2004).

Yet, the priority tasks in public school counseling are scheduling, testing, and discipline, followed by dropout, drug, pregnancy, and suicide prevention; sexuality and personal crisis counseling; tardy sweeps; and lunch supervision. According to the National Association for College Admission Counseling, the national average ratio of students to counselors is 490:1 (Hawkins, 2003). Some statewide averages are as high as 994:1 and in the schools serving large numbers of poor students and students of color, the ratios are 1,056:1 or higher (McDonough, 2004). As if high ratios were not enough, a study of how counselors spend their time found that they engage in college guidance functions only 13 percent of their time (Moles,

1991). By way of comparison, counselors at private college preparatory schools, which send the largest proportion of their students on to college, are devoted exclusively to college counseling.

Repeated studies have found that improving counseling would have a significant bearing on college access for low-income, rural, and urban students, as well as students of color (Gandara and Bial, 1999; King, 1996; McDonough, 2004; Plank and Jordan, 2001; Rosenbaum, Miller, and Krei, 1996; Venezia et al., 2002). Specifically, if counselors actively support students and their families through the college admissions process, as opposed to simply disseminating information to them, this will increase students' chances of enrolling in a four-year college.

Counseling is often tied to the track placement of students. Those students who are not in the college track do not receive college information. African-American and Latino students, as well as first-generation college-bound students, are significantly more likely than their white counterparts to be in non-college tracks and to have their college plans influenced by their high school counselors, both positively and negatively (Lee and Ekstrom, 1987; Oakes, 2004; Plank and Jordan, 2001). Yet these are the students who are least likely to have counselors, most likely to receive insufficient counseling, and most likely to have counselors pulled away from college counseling to work on other tasks (Paul, 2002). And, research has shown that these students often exhibit deep and well-founded distrust of counselors because of racist and socioeconomic biases in advising (Gandara and Bial, 1999).

Information

One element essential to preparing for college and making enrollment decisions is adequate information (particularly about financing), received early enough for students to complete the necessary prerequisites for college. Clear, accessible information about affordability, received repeatedly and with increasing complexity throughout the middle and high school years, benefits both students and their families.

Recent studies paint a dire picture of the quality of college admissions and financial aid knowledge among students, families, teachers, and counselors. Students need basic information about college options, particularly about more selective colleges. Low-SES students and students of color are the least likely to receive this information, particularly by eighth grade, when it is necessary for them to enroll in college preparatory classes (Cabrera and La Nasa, 2000; Hart and Jacobi, 1992). In 1999, only 18 percent of all high school students and 30 percent of parents had information on college costs (U.S. Department of Education, 2003a). Venezia, Kirst, et al. (2002), in studying students and parents from six states and their knowledge of nearby public colleges (flagships, less selective state colleges, and community colleges), found that less than 12 percent of students knew the courses required for admission; most were confused about the expectations of college-level work; most overestimated tuition, especially of the less-selective four-year and community colleges; most were unaware of college placement exam content; and distribution of college information to low-income parents was inequitable.

Information dissemination must not be construed as a standalone task. Rather, high-quality information about college must be combined with meaningful admissions advising by counselors. Sound, available counseling has been statistically proven to raise students' feelings of being prepared. Timely, informed, and reliable advisement about college costs and financial aid can make a difference in college-going rates among students (McDonough, 2004). Moreover, students who participated in well-designed intervention programs had all or most of the information they needed to prepare for college, and showed statistically higher rates of planning and preparing for—as well as enrolling in—college (Gandara, 2002).

Families

Early family encouragement stimulates students to form educational plans by eighth grade, a crucial time when students can choose to take a college preparatory high school curriculum. Family support and early educational plans are among the strongest predictors of students developing and maintaining college aspirations, sustaining motivation and academic achievements, and actually enrolling in college (Tierney and Auerbach, 2004).

Parents play a decisive role in shaping and maintaining their children's college aspirations throughout middle and high school. Ninth graders who regularly talked with their parents about college plans were more likely to go to college. Effective parental encouragement also includes saving money for college, making campus visits, and attending financial aid workshops with their child. While parental support and encouragement alone do not determine whether students ever realize their goals, the most important predictor

of college plans is the amount of encouragement and support parents give their children (Hossler, Schmidt, and Vesper, 1999).

Consistent communication among students, parents, and school personnel is a predictor of increased enrollment in college (Plank and Jordan, 2001). Parents' biggest need is for an accurate understanding of college costs and the financial aid system (Hossler, Schmidt, and Vesper, 1999). However, the poorest students and their families depend on counselors for college entrance and financial aid information, while higher-SES students use not only school counselors, but also their own informational and experiential sources, other students and families, printed materials, college representatives, and private counselors (Terenzini et al., 2001).

Many U.S. high schools do not even offer parents the simplest college informational and engagement activities. In a recent policy study that found a direct correlation between awareness of financial aid and college enrollment, nine out of 10 Latino parents said they believe that a college education is necessary to be successful, yet two-thirds of them said that they did not receive any student aid information before their child left high school and, not surprisingly, more than half of these parents could not name a single source of student aid (Tomas Rivera Policy Institute, 2004).

Admissions Policies

The world of college admissions has changed dramatically over the last half century. Before the 1950s, 20 percent of high school graduates went on to college; today, 65 percent do (Kinzie et al., 2004). College access in the late 20th century is a growth industry, one that has become intensely competitive, highly organized, increasingly stratified, and the source of significant corporate profit (McDonough et al., 2000). There is an

ever-growing number of service providers, who exert ever-widening influence. To use suggestive examples and very conservative estimates, there is a \$35 million per year college rankings industry and a test coaching industry worth more than \$100 million per year, as well as enormously profitable enrollment management, book publishing, and college advisement industries.

Dramatic student, organizational, and cultural changes in college access have occurred in the last half century: major growth and transformation in college admissions officers' roles, from educators to marketers; changes in the services, information, and technology available to college applicants; changes in the application practices of upper-middle class college aspirants; and the elevation of college admissions to high-profile public policy debates and political initiatives (McDonough et al., 2000).

Since 1970, a significantly larger number of both public and private colleges are classified as "competitive" (that is, the most difficult to gain acceptance to) and a larger number of public colleges are now classified as "selective" (the intermediate category of selectivity). Students are filing larger numbers of applications to hedge their bets in an uncertain admissions environment, significantly lowering college yield rates, the percentage of admitted students who actually enroll (Breland et al., 2002).

One popular hedge against declining yield rates is early admissions programs, which also help improve a college's placement in *U.S. News and World Report's* annual rankings (Avery et al., 2003). Early decision programs, which exist at about one-third of all four-year colleges (primarily the most selective), allow students to apply early and thus receive their acceptance or rejection early. However, these programs also bind students to enroll if they are accepted, before receiving other admissions

decisions or financial aid offers. Early action programs require the same early application and quick decisions from the college, but do not obligate students to attend. Critics of early decision and early action note that these programs create tension and anxiety for applicants, who must make final decisions without competitive offers; favor white and affluent applicants from resource-rich high schools; and increase competition for the remaining slots in the “regular” application cycle. These programs effectively double students’ chances of admission, or the equivalent of a boost of 100 points in SAT scores for early applicants (Avery et al., 2003).

A major area of concern related to the school-to-college transition is admissions policies and preferences for certain groups of students. Over the last few years, the national media have provided ample coverage to calls for doing away with legacy and major donor admissions preferences. Even the president and other national leaders, who have themselves benefited from legacy admissions policies, have joined in the chorus of voices calling for their elimination.

The role of affirmative action schemas in diversifying our student bodies remains the focus of a never-ending stream of litigation, advocacy, and research. The U.S. Supreme Court ruled that colleges and universities can continue to use race-conscious admissions policies, but most legal analysts advise colleges to proceed with caution. Recent analyses of various state

percent plans as alternatives to affirmative action have proven to offer very little hope for increasing African-American and Latino students’ presence on more selective college campuses (Carnevale and Rose, 2003; Tienda et al., 2003). Moreover,

The barriers to college access are primarily financial and academic, with additional needs for earlier information, more and better-trained counselors, opportunities and support for families to partner in the college preparation process, and admissions policies that do not exacerbate existing inequalities.

because of the low and stagnant numbers of poor students entering college today, other researchers have advocated for socioeconomic diversity to be added to existing affirmative action plans (Carnevale and Rose, 2003).

This synthesis has shown that the barriers to college access are primarily financial and academic, with additional needs for earlier information, more and better-trained counselors, opportunities and support for families to partner in the college preparation process, and admissions policies that do not exacerbate existing inequalities. However, overcoming four of these barriers (the academic, informational, counseling, and family needs) will depend upon action by K-12 schools. Therefore, it is important to understand more about the state of K-12 education in order to understand specifically how to improve these conditions of college access.

K–12 Context and Calls for Reform

Fifty years ago in *Brown v. the Board of Education*, America outlawed segregation in public schools, yet today we have an educational system rife with educational inequality and segregation. K–12 students today are educated in highly segregated schools (Kahlenberg, 2004; Orfield, 1996; Pathways to College Network, 2003). Specifically, black and Latino students are concentrated in schools with high dropout rates—schools that often lack any significant college preparation capacity (Orfield, 1998).

Even though the gap in educational achievement between African-American and white students was halved from 1970 to 1988, progress stopped in 1988 (Haycock, 2001). Teacher effectiveness differences account for much of the “opportunity gap” from which low-income and minority students suffer. Poor students and students of color are “systematically” taught by teachers who are less effective because they: lack content knowledge for their areas of teaching; have less experience; teach on emergency credentials; score lower on standardized tests, teacher licensing tests, assessments of basic skills, and college admissions tests; and are much more likely to have attended noncompetitive undergraduate institutions than teachers at higher-SES schools (Haycock, 2004). Based upon these findings, Haycock identifies two crucial components to improving K–12 education: a

challenging curriculum and effective teachers.

Research shows that high expectations and access to caring and knowledgeable adults who monitor students’ educational success are key precursors to their academic achievement in high school and subsequent enrollment in college (Gandara and Bial, 1999). Teachers can and do affect students’ academic preparation, opportunities to learn, self-esteem, and motivation to achieve. Teachers’ expectations for children are largely influenced by the instructors’ beliefs about race, ethnicity, and social class. These assumptions in turn affect their assessments of students’ ability and motivation to learn, which in turn affect how teachers interact with and support students, whether and how many opportunities to learn and excel they provide to students, the advice they give students, and their interactions with students’ families (George and Aronson, 2002).

A plethora of educational research and policy reports have documented inequitable conditions in K–12 public education for low socioeconomic and racial and ethnic minority students (Bill and Melinda Gates Foundation, 2003; Callan and Finney, 2003). Some evidence exists that the disparities in academic achievement progressively worsen as students advance from elementary to secondary schools (Obidah et al., 2004). New empirical evidence shows that low-income and immigrant children and children of color

are being denied essential educational opportunities to learn by schools that shock the conscience because they deprive students of learning essentials: books, qualified teachers, and a safe environment (Oakes, 2004).

Such conditions have led some researchers to conclude that the current structure of middle and high schools is inadequate to prepare minority, low-income, and first-generation students to attend college (Martinez and Klopott, 2003). The Aspen Institute (2003) reports that for more than two decades, we have known of the American high school's significant shortcomings and that, even though we have detailed and well-documented evidence of our failures, the gap between successful and unsuccessful high schools is growing and that "most secondary schools seem impervious to change" (p. 5).

Today, educators and policy makers are almost buried under a mountain of calls for reforming K-12 schools. Most pleas do not focus on increasing college access, but do have at their core the essential precondition for improving college access—increasing academic performance. Nearly all policy and research reports on the condition of K-12 schools agree that we need comprehensive reform to meet states' statutory obligations to educate all citizens, reduce disparities in academic preparation for college, and raise performance levels to meet standards-based accountability (American Diploma Project, 2004; Callan and Finney, 2003; Gates Foundation, 2003; Gladieux and Swail, 1999; Oakes, 2004).

Martinez and Klopott (2003) find that the most promising elements of reform initiatives include a more rigorous academic curriculum for all students, academic and

social supports, small learning environments, and the alignment of P-16 curricula. Aligning curricula and high school graduation requirements with college entrance requirements ensures that students are continually prepared for academic success, are aware of academic expectations, and are prepared for college (American Diploma Project, 2004; Kirst and Venezia, 2004; Martinez and Klopott, 2003).

Accountability Systems and P-16 Reform

Many federal and state measures, like high school exit exams, standards, and other accountability systems, are the result of genuine (albeit imperfect) efforts to create policy solutions to improve poor student achievement, especially for underrepresented minority students. Gayler et al. (2004) find that more than half of all high school students today are subject to high school exit exams and that those numbers will grow to 70 percent of all students and 80 percent of minority students by 2009. However, Gayler and colleagues also find that although these exams measure high school achievement to some extent, they do not capture college or labor force readiness.

Standards for Success, a project of the American Association of Universities and the Pew Foundation, identifies what high school students need to know and be able to do in order to succeed in entrance-level university courses. It also provides a database of information on state assessments and researches the connection between high school test content and university success standards. Conley's (2003) Standards for Success analysis finds very little alignment between state exams and entry-level college standards.

The American Diploma Project (2004) is another powerful voice for P-16 reform that specifically seeks to restore value to the high school diploma in terms of both college readiness and workforce preparation, by establishing new English and mathematics content and skills benchmarks. This project also illustrates the practical applications of standards by linking the benchmarks to actual postsecondary assignments and workplace tasks. The American Diploma Project calls upon college and university leaders not only to align high school assessments with college placement indicator systems, but also to report back to high schools about their graduates' academic performance, in order to create a feedback loop for high school curricular improvement.

Other evidence has shown that many accountability measures focus on the educational floor (minimum literacy standards), not the ceiling (college readiness). In response, Callan and Finney (2003) call for at least two years of postsecondary experience for every student as a new national priority. Similarly, the National Commission on the Senior Year calls for a college preparatory curriculum for every high school student and 15 years of compulsory schooling (Viadero, 2001).

These reports and others stress that policy makers and leaders within K-12 and higher education need to collaborate and, beginning with preschool, help create P-16 systems that ensure greater alignment between high school exit skills and those skills required for college entry (Callan and Finney, 2003; Conley, 2003; Venezia et al., 2002). Additionally, many of these reports call for school reform that focuses on small learning communities, renewed emphasis on teaching and learning, closing the achievement gap, enhancing schools' abilities to reform, aligning policies,

monitoring results, and using multiple indicators of student outcomes (American Diploma Project, 2004; Aspen Institute, 2003; Callan and Finney, 2003; Conley, 2003; Venezia et al., 2002).

Conflicting policy reports also address the issue of whether our attention should be focused on selective colleges or the more "open enrollment" institutions that serve 80 percent of all postsecondary students today. Kirst and Venezia (2004) call for higher education's policy focus to shift from admissions to selective postsecondary institutions to the underpreparation of

Many accountability measures focus on the educational floor (minimum literacy standards), not the ceiling (college readiness).

K-12 students at broad-access institutions. They contend that current K-12 and postsecondary educational systems send conflicting messages about college preparation, are fractured, and create unnecessary and pernicious barriers to improving college access. This disconnect leads to inadequate high school courses, student underpreparation, and a lack of alignment between K-12 and postsecondary entrance and placement tests.

Taking a contrary approach, Carnevale and Rose (2003) look at the issue of socioeconomic class diversity at the most selective colleges. They urge policy makers and administrators to look more closely at selective colleges because those institutions post higher graduation rates, greater access to graduate school, and higher wages in the labor market among their graduates. Ultimately, they call for continued use of affirmative action policies focused on race, the institution of affirmative action policies focused on socioeconomic status, and stronger financial aid policies.

College Preparation Intervention Programs

This report has documented how low-income students and students of color are often deprived of college-enabling conditions in their K-12 schools. Too often, these students are enrolled in high schools that fail to meet the entrance requirements of more competitive colleges because of shortages of qualified teachers and college counselors, and inadequate honors and advanced placement classes. Pre-collegiate outreach or intervention programs are designed to supplement schools and communities with resources that are helpful to students preparing for college.

Since the 1960s, higher education leaders, policy makers, advocates, and philanthropists have developed outreach programs to provide select students with the necessary preparation and assistance for college. In the midst of President Johnson's War on Poverty, Congress in 1964 established Upward Bound as the first federal intervention program. The Higher Education Act of 1965 established the TRIO programs and added Talent Search and Student Support Services to Upward Bound, thereby laying the foundation for the federal underwriting of intervention programs.

TRIO programs were originally developed to expose low-income and first-generation college-bound students to college and available academic support, so that they might prepare for and succeed in college. Although designed to serve these two often-overlapping populations, TRIO programs make economically disadvantaged students their first priority.

In subsequent policy directives, additional TRIO intervention programs have been added, including the Ronald McNair Postbaccalaureate Program, Veterans Upward Bound, Educational Opportunity Centers, and Upward Bound Math/Science.

In 1998, Congress created GEAR-UP (Gaining Early Awareness and Readiness for Undergraduate Programs), a grant program that helps students, beginning in the sixth grade, overcome social and cultural barriers to higher education access. Together, these programs accounted for \$1 billion in the fiscal year 2002 federal budget.


GEAR-UP represents a new federal model for serving students. The program identifies cohorts of students and works systematically with them, their families, schools, and nonschool partners to build students and parents' knowledge of college, its potential benefits, and college preparation requirements. GEAR-UP is a comprehensive intervention program that has several important characteristics: It is organizational and collaborative, requiring partnerships among local education agencies, community groups, families, and colleges and universities; it focuses on students and their families; and it is systemic in its cohort focus.

At least 15 states also have undertaken their own intervention programs and campaigns (Fenske et al., 1997). These programs run the gamut of early information and awareness, such as California's College: Making It Happen campaign, for the parents of middle school students; Georgia's Hope Scholarship program; Minnesota's Get Ready program; Rhode Island's Children's Crusade for Higher Education; and others. In addition, many private programs for college preparation intervention exist. The most well-known of these programs is probably Eugene Lang's I Have a Dream, which financially supports more than 13,000 low-income students in 26 states (Perna and Swail, 2002). Other programs also are in place, some of which have been growing significantly, like AVID (Advancement Via Individual Determination) and MESA (Mathematics, Engineering, and Science Achievement).

Federal and state efforts are important, but the major players in college outreach programs are colleges and universities. One in three colleges and universities offers some kind of outreach program to assist low-income, first-generation, or students of color in their college quest (Chaney et al., 1995).

Most college intervention programs aim to improve opportunities for individual students, rather than change the structure or functioning of schools, and thus are student-centered, rather than school-centered, programs. But this is an institutional problem, not an individual problem. By design, outreach programs are inequitable because they target only a small percentage of students and do not (and perhaps cannot) serve all students consistently. Also by design, intervention programs are external to K-12 schools (Gandara and Bial, 1999) and therefore supplement but do not fundamentally change the curriculum or schools' interactions or perceptions of student potential. Thus, not surprisingly, outreach programs have very little effect on academic achievement. As Gandara and Bial (1999) note: "Students are exposed to the same school practices that have been proved to be unsuccessful for them." Intervention efforts are insufficient without core academic services from K-12 schools (Gandara and Bial, 1999; Perna and Swail, 2002).

In short, outreach intervention efforts are not a systematic solution to the policy problem of equalizing educational access across all populations, but a system of educational triage. We are sorting and allocating scarce educational treatment to students, but by most estimates, we are reaching approximately 10 percent of the eligible or needy populations and it would take \$6 billion to serve all eligible students (Swail, 2000).


In short, outreach intervention efforts are not a systematic solution to the policy problem of equalizing educational access across all populations, but a system of educational triage.

Although the information on what works in college outreach programs is limited (Gandara and Bial, 1999; Perna and Swail, 2002; Tierney et al., 2004), we do know that intervention programs can double the college-going rates for at-risk youth (Horn, 1997), can expand students' educational aspirations (Gandara, 2002), can increase students' educational and cultural capital assets (Gandara and Bial, 1999), and can boost college enrollment and graduation rates. We also know that the benefits are often greatest for low-income students who initially have low expectations and levels of achievement (Myers and Schrim, 1999). Kirst and Venezia (2004) emphasize that without better information and closer linkages between K-12 schools and intervention programs, the benefits of these programs will be limited. We must go beyond fragmented initiatives, and toward universal programs for all students.

Action Steps for Higher Education Institutions

College and university leaders can and must act to reduce the college access gap. Many of higher education's traditional, full-time students come directly from the K-12 educational system, thus higher education institutions have a vested interest in the quality of future students' preparation and should become involved in improving college access. The research reviewed in this report generally points to three strategies as essential: First, establish or reinvigorate teacher preparation programs and partnerships with low-performing middle and high schools; second, help lead vigorous P-16 collaborations that make preparation for college a major goal of reform; and third, reexamine college admissions and financial aid programs to ensure that they are maximizing opportunity for students.

This report documents that K-12 educators need help in improving the teaching and learning conditions for all students, especially for at-risk students. How can college leaders help? An immediate way to have an impact is improving teacher effectiveness. Colleges should provide content for professional development initiatives for pre-service and in-service teachers, especially in key areas like mathematics, science, and English. Also, teachers need guidance to help them set high expectations for student performance and provide students with the study skills, time management, and test-taking strategies necessary for college

preparation. Such activities can help schools develop cultures that commit to preparing all students for a full range of postsecondary options and are embodied in supportive and knowledgeable administrators, teachers, and counselors.

ACE (1999) investigated improving teacher effectiveness and offered a 10-step action agenda for presidents that called for making teacher education an institutional priority, connecting teacher preparation to the institution's mission, reviewing the quality of teacher education programs,

How can college leaders help? An immediate way to have an impact is improving teacher effectiveness.

finding avenues for collaboration, engaging arts and sciences faculty, supporting teacher education programs adequately, improving research on teacher education, strengthening transfer and recruitment, providing ongoing professional development for teachers, and becoming opinion leaders on teacher education needs. Three years later, ACE (2002) issued a final report that detailed the efforts that college leaders had made. Two of the major lessons learned were that improving teacher preparation is still a job that requires the stature and unique abilities of presidents and senior postsecondary leaders, and that the road to improving teaching is long and requires an ongoing commitment to collaborative, consensus-building efforts.

Specifically, colleges should help school districts that enroll primarily low-income students and students of color solve teacher recruitment and retention problems by preparing teachers for the real-life physical and resource conditions and student learning needs they are likely to face in these schools. They can begin by building teacher support networks within teacher training programs. One award-winning program that is radically improving urban schooling in Los Angeles sends small teams of novice teachers into schools where there is a cadre of experienced teachers and school leadership committed to student outcome improvement. Research has proven that ongoing support of novice teachers that continues throughout their training and into their careers makes a difference. This program's rate of retention of urban teachers is 70 percent after five years (Quartz, 2003).

Direct services to students and their families also can be effective, and should include supporting intervention programs that help students become better prepared. These programs are necessary to ensure a steady supply of higher education's raw materials—students. Moreover, higher education has a moral, fiscal, and equity imperative to ensure access for low-income, underrepresented minority and disadvantaged students. Quite possibly, colleges and universities may have more resources than one might initially think, but to be effective, intervention programs must be long-term engagements, for both the educators collaborating on them and the students engaged in them. For intervention programs to be successful, they must be comprehensive (entailing academic preparation, family involvement, counseling, and so forth) and integrated into K-12 settings.

Any college or university that has undergraduates who aspire to work in education often has students in need of volunteer opportunities, to both explore their future career and gain valuable experience. Therefore, colleges should offer service-learning courses to provide students with training on a range of K-12 tasks, such as assisting students with college applications, motivating them to prepare for college, tutoring those who are falling behind, and assisting teachers. Such opportunities can provide students with academic credit, field support to make intellectual connections with the work they are doing and conditions they are observing, and potential letters of recommendation for graduate school or employment. Graduate students and faculty in a variety of fields can be of use and find useful research projects on topics relevant to K-12 education or possibly to undertake evaluations of ongoing initiatives.

But colleges and universities also need to see themselves, and to be seen, as part of the same seamless P-16 system. This alignment means that K-12 and postsecondary curricula and assessments need to be aligned. College readiness data like SAT and Advanced Placement scores offer teachers useful information to use as a benchmark in making their curricular and pedagogical decisions. Colleges should share freshman performance data with high schools so that this information can be used to improve student preparation. Colleges and schools also must encourage and provide incentives for K-12 and postsecondary faculty to work together and understand one another's content and pedagogy.

Oregon is the state that has been working the longest and most effectively at aligning high school exit requirements with postsecondary placement requirements. PASS (Proficiency-based Admission

Standards System) has been in existence for more than a decade and has proven to be successful at instilling in students the knowledge and skills necessary for entering and being successful in college. Evaluations of the PASS program show that participating students' successful performance on the 10th grade assessment closely aligns with success in their first year of college (Tell, 2003).

A second exemplary P-16 alignment program is the collaborative Early Assessment Program (EAP) among California State University (CSU), California's public schools, the California Department of Education (CDE), and the State Board of Education (SBE). By mandate, CSU draws its students from the top one-third of high school graduates who have at least a B average and who have taken the required college preparatory curriculum. Yet in recent years, more than 60 percent of CSU's nearly 40,000 freshmen have needed remedial education in English, mathematics, or both. Facing spiraling costs for remedial education, CSU set a goal of reducing the need for remediation among entering freshmen to 10 percent by 2007. As a practical strategy, CSU joined with CDE and SBE to examine the extent to which K-12 assessments could be used for placement purposes at CSU. Using the 11th grade California standards tests in English and math, along with a writing sample and several additional higher-order test questions, CSU created the EAP. Students who take this augmented test and score above the specified threshold are exempted from taking further CSU placement tests. Students who score below the threshold have an opportunity during senior year of high school to improve their skills. CSU provides targeted outreach services to all public high school students who do not reach the threshold required for university-level work. EAP's

benefits include P-16 alignment; an early-warning college readiness assessment for students; a comprehensive, school-based college preparation program targeted to students in need; a refocusing of the senior year on college readiness preparation; and supplemental tutoring and counseling services for targeted students in all public high schools.

Many policy reports also call for a streamlined, statewide data system for grades K-16 to support and track student progress through the education pipeline. Callan and Finney (2003) suggest that college leaders could develop new forms of collaboration and call upon states to reconfigure resource allocations as K-16 allocations and to investigate how to maximize state facility usage across the K-16 system.

But there is much work for higher education institutions to do in order to get their own houses in order. Colleges and universities have a singular capacity to help students overcome the financial barriers to college access. Admissions and financial aid staff must work with students, parents, and counselors to make college prices clear and must help those consumers understand how they can afford those seemingly unaffordable price tags. Likewise, no one has a greater ability to lessen the admissions barriers of college access than colleges and universities. Limiting the impact of early admissions policies, protecting racial and ethnic affirmative action, and adding socioeconomic affirmative action plans will measurably contribute to lessening the college access gap. Also, colleges must develop comprehensive ways to work with families early in students' educational careers to provide information on academic preparation, financial aid, adolescent development, and helping children sustain their aspirations.

Admissions and outreach offices should offer information on college entrance requirements and the skill levels needed for completing college work. Teachers, counselors, and principals need professional development on these same topics. They also need to make campus visits so that they can have firsthand experience with a variety of colleges to understand campus climates, offerings, and relative benefits, and be able to explain them to students. High schools and college intervention programs are always looking for

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knowledgeable financial aid professionals to offer financial aid awareness and planning sessions for students and parents. Higher education institutions should develop partnerships with school counselors who know very little about financial aid but who will be repeatedly interacting with students and families on their college affordability concerns. Finally, colleges and universities should develop or expand dual enrollment and other school-to-college bridge programs that assist students in making a successful transition to college.

Financial aid policies can go a long way toward improving college access for low-income students. Therefore, higher education must: (1) design aid programs that make grant commitments to students in middle or high school and target low-income students for this and other need-based aid, particularly in their first two college years; (2) assess any existing merit-based aid programs and determine if underserved students are being excluded and then make appropriate changes; and (3) work at the state and federal levels to increase public funding for need-based aid programs.

To summarize, the steps that college presidents can make to narrow the college access gap are: contribute to teacher professional development to help improve the rigor of K-12 classes; help improve counseling for college; make the student aid system more understandable; make early commitments to middle and high school students who commit to the college track; and develop intervention programs, singly or in collaboration with other colleges, school districts, or statewide partnerships. Low-SES students and students of color need more rigorous high school curricula, better information about college prices, better and earlier notification of financial aid packages, a critical mass of students like themselves on college campuses, and more affirming campus climates.

Questions for Institutional Research

- 1) What schools in our area are low-performing schools? What schools serve large numbers of low-income students and students of color? What is the nature of our relationship with those schools?
- 2) Do we have relationships with higher performing schools that have significant numbers of students of color in them? Are we enrolling those students of color in numbers proportionate with others in those schools?
- 3) What activities are we currently engaged in with schools? What evidence do we have about the effectiveness of these activities?
- 4) If more than one program exists, are there efforts underway to collaborate, streamline, and learn from one another?
- 5) Is there one place on campus that tracks all faculty, staff, and student work with schools? If faculty, staff, or students want to work with schools, do we have a means to help facilitate their access to low-performing schools?
- 6) Can we track students on our campus back to specific schools and monitor their progress to identify schools that do a good job in preparing low-income students? If so, can we identify what is going right at those places and help other schools learn from those examples?
- 7) How well do state high school exams or other standards align with our admissions requirements and placement tests? Are students who pass state high school exams being placed in remedial courses?
- 8) How can we encourage our English and mathematics faculty, especially those who teach remedial courses, to work with teachers in low-performing schools to improve those students' college readiness?
- 9) From where do we recruit our teacher education students and can we recruit more who will commit to working in low-performing schools? Can we commit additional aid for teacher education students who commit to working in low-income schools?
- 10) Can we arrange for teacher interns to work in low-performing schools in teams? Can we provide them with additional support?

- 11) How many of our teacher education alumni work in low-income urban or rural schools? How well do they think our program prepared them to teach in those environments? What can we do to support them to stay in those schools and improve their effectiveness as teachers?
- 12) Do both our financial aid and admissions officers participate in college fairs and other outreach activities at low-performing schools?
- 13) Do we conduct any specialized training for all high school counselors (not just the college counselors), such as campus tours or financial aid training?
- 14) How much effort do we make to counsel students and parents at low-income schools on admissions and financial aid? Do we work with parents in early financial aid outreach to inform them of the basic types of financial aid and ensure them of adequate support at the time of application?
- 15) As an incentive, could we evaluate our federal, state, and institutional aid programs and develop a plan to commit adequate aid to highly qualified, low-income students early in their high school careers? What could we do to make a major development commitment to ensure the success of this project?
- 16) What share of our student population receives a Pell Grant? How has that share changed over time?
- 17) How much of our merit- and need-based aid goes to low-income students?
- 18) What is the net price for low-income students and how has it changed over time?

Annotated Bibliography

American Diploma Project. (2004). *Ready or not: Creating a high school diploma that counts*. Executive summary. Washington, DC: Achieve, Inc.

This report urges state policy makers to anchor high school graduation requirements and assessments to knowledge and skills that colleges and employers actually expect of successful students and workers. The report also calls for colleges and employers to link student achievement on state standards-based assessments by using these performance data in their admissions, placement, and hiring decisions. The report calls upon college leaders to (1) define specific course-taking requirements in English and mathematics for high school graduation and to specify the core content for those courses, ensuring that it aligns well with standards, and (2) hold all students to the same English and mathematics standards, using the same measures, regardless of whether students are in traditional schools, charter schools, small theme-based schools, or other alternative programs.

Breland, H., J. Maxey, R. Gernand, T. Cumming, & C. Trapani. (2002). *Summary report. Trends in college admissions: A report of a survey of undergraduate admissions policies, practices, and procedures*. Tallahassee, FL: Association for Institutional Research.

Acknowledging that admission is more competitive, students and parents are more savvy, and colleges and universities more market-focused than in the past, the sponsoring organizations (ACT, ETS, College Board, NACAC, and AIR) examined the admissions policies, practices, and procedures of two- and four-year colleges and universities. Chock full of data and analyses, the report finds significant increases in the scope and complexity of college recruitment and research efforts. The authors also address the impact of states' concerted policy emphasis on standards. Interesting findings relate to increased selectivity, use of the Worldwide Web, decreases in recruitment of underrepresented minorities, and growing numbers of students with unmet financial need.

Carnevale, A. and D. Desrochers. (2003). *Standards for what? The economic roots of K-16 reform*. Princeton, NJ: Educational Testing Service.

The authors find that today's K-12 standards movement is being driven by the educational needs of the 21st century economy. These economic needs mean that a college education is required for the majority of jobs and thus, academic readiness is the new standard by which to measure K-12 effectiveness. Carnevale and Desrochers call for college preparation to begin in preschool and predict a looming shortage of 14 million college-educated workers by 2020 unless we hold the K-12 system accountable for students' college readiness.

Conley, D. (2003). *Mixed messages: What state high school tests communicate about student readiness for college*. Eugene, OR: The Center for Educational Policy Research, University of Oregon.

Conducted by Standards for Success (S4S), this study finds a misalignment between state high school tests and the knowledge and skills necessary for college success. Most states need to modify their exams before they can provide useful information to high school students on their college readiness, or to teachers and postsecondary institutions on student admissions and placement decisions. S4S is a three-year project of the Association of American Universities in partnership with the Pew Charitable Trusts that has two goals: to identify what students need to know and be able to do in order to succeed in entry-level university courses, and to make available a database of information on state high school assessments to improve the connection between the content of high school tests and the standards for university success.

Heller, D. E. (Editor). (2002). *Conditions of access: Higher education for lower-income students*. Westport, CT: American Council on Education/Praeger Series on Higher Education.

Heller and his colleagues assess the current state of college access for low-income students, offering a comprehensive account of the interaction between college finance and enrollment behavior. Heller and others review national demographic trends; assess the cumulative impact of federal, state, and institutional financial aid policies and practices; and document the perceived and actual effects of college costs. Using current, evidence-based research, they synthesize enrollment patterns of low-income students; investigate the impact of shifts from need-based to merit-based financial aid; and offer institutional, state, and federal policy recommendations for making increased access to higher education for lower-income students a national priority. Of particular importance is the McPherson and Shapiro chapter, which reviews institutional practices (tuition discounting, merit-based aid, increased reliance on loans, etc.); discusses how these practices may be necessary for enrollment management and staying competitive, but result in increased stratification; and offers specific institutional recommendations.

Kahlenberg, R. (2004). *America's untapped resource: Low-income students in higher education*. New York, NY: The Century Foundation.

This edited collection is a hard-hitting analysis of the economic divide that exists in America's higher education system today. The assembled experts offer myriad evidence that changes in federal and state policies—and in universities—have made it increasingly difficult for poor and working-class students to earn college degrees.

Kinzie, J., M. Palmer, J. Hayek, D. Hossler, S. Jacob, & H. Cummings. (2004). *Fifty years of college choice: Social, political, and institutional influences on the decision-making process*. Indianapolis, IN: Lumina Foundation for Education, New Agenda Series.

In a thoroughly readable summary of state-of-the-art college choice research spanning well over 50 years, Kinzie and colleagues look at traditional-age students' college choice processes. The authors also investigate the effect of public policy shifts in college access, equity, and financial aid; changes in recruitment, marketing, admissions, and financial aid practices; and market, competition, and professionalization forces on how students make their college choices. This insightful monograph not only charts the interaction

between students and their families, colleges and universities, and policy makers as it irrevocably changed the face of college access, but it also offers insight into future institutional and public policy issues.

Pathways to College Network. (2003). *A shared agenda: A leadership challenge to improve college access and success*. Boston, MA: The Education Resources Institute.

Thirty-four national organizations (higher education institutions, foundations, advocacy groups, and others) launched a national initiative committed to improving college access and success for underserved populations. *A Shared Agenda* is a “cheat sheet” of research-based knowledge of effective policies and practices that includes 100 recommendations for state and federal policy makers, middle and high school leaders, college administrators, outreach program leaders, families, and communities. This report summarizes what we know from more than 650 research studies on both the opportunity gap in college entrance and completion, and from practice on working to improve K-12 achievement, college access, and college persistence. *A Shared Agenda* offers principles for action that focus on high expectations; challenging curricula in middle and high schools; early and accessible college information; culturally relevant partnerships with families; P-16 articulation and collaboration; adequate K-12 and financial aid funding; and regular outcomes and program assessment to build an evidence base to improve practice.

Tierney, W., Z. Corwin, & J. Colyar (Editors). (2004). *Preparing for college: Nine elements of effective outreach*. Albany, NY: State University of New York Press.

One in three colleges and universities offer an outreach program to assist low-income, first-generation, or students of color in their college access quest and these programs offer a remarkable array of program components, goals, and students served (Chaney, Lewis, and Farris, 1995). Yet, we have scant evidence of measurable outcomes. Tierney, Corwin, and Colyar (with other researchers) define the parameters of effective college outreach programs and offer evidence on the effectiveness of academic preparation, mentoring, family involvement, counseling, and other components. This book offers a comprehensive and integrated understanding of program elements that will improve students’ college readiness and offers insight for university leaders and administrators on program effectiveness.

Venezia, A., Kirst, M. W. and Antonio, A. L. (2002). *Betraying the college dream: How disconnected K-12 and postsecondary education systems undermine student aspirations*. Final Report from Stanford University’s Bridge Project. Palo Alto, CA: Stanford University.

This policy monograph describes how the major barrier to students’ high aspirations is a fractured K-16 educational system that sends conflicting and vague signals to students and their families about how to prepare for and succeed in college. The authors document significant and persistent inequality in college counseling, course offerings, college information availability, and partnerships with local universities that could facilitate visits by students to colleges and by recruiters to high schools. They find that students and parents are confused or uninformed about what is expected of students when they enter college and that these misunderstandings are related to poor preparation for college. Early access to college and financial aid information emerged as one of the three main findings of this report.

Bibliography

Adelman, C. (1999). *Answers in the tool box. Academic intensity, attendance patterns, and bachelor's degree attainment.* Washington, DC: U.S. Department of Education.

Advisory Committee on Student Financial Assistance. (2002). *Empty promises: The myth of college access in America.* Washington, DC: Author.

American Council on Education. (2002). *Touching the future: Final report, president's task force on teacher education.* Washington, DC: Author.

———. (1999). *To touch the future: Transforming the way teachers are taught. An action agenda for college and university presidents.* Washington, DC: Author.

American Youth Policy Forum. (2003). *Essentials of high school reform: New forms of assessment and contextual teaching and learning.* Washington, DC: Author.

The Aspen Institute, Patricia W. McNeil of High School Solutions. (2003). *Rethinking high school: The next frontier for state policymakers.* Washington, DC: Author.

Avery, C., A. Fairbanks, & R. Zeckhauser. (2003). *The early admissions game: Joining the elite.* Cambridge, MA: Harvard University Press.

Barton, P. (2004). *Parsing the achievement gap: Baselines for tracking progress.* Princeton, NJ: Educational Testing Service, Policy Information Center.

Berkner, L. & L. Chavez. (1997). *Access to postsecondary education for the 1992 high school graduates.* Washington, DC: NCES, U.S. Government Printing Office (NCES 98-105).

Bill & Melinda Gates Foundation. (2003). *High schools in the millennium: Imagine the possibilities.* Seattle, WA: Author.

Breland, H., J. Maxey, R. Gernand, T. Cumming, & C. Trapani. (2002). *Trends in college admissions: A report of a survey of undergraduate admissions policies, practices, and procedures.* Tallahassee, FL: Association for Institutional Research.

Cabrera, A. F. & S. M. La Nasa (ed). (2000). *Understanding the college choice of disadvantaged students: New directions for institutional research.* Number 107. San Francisco: Jossey-Bass Publishers.

- Callan, P. M. & J.E.. Finney. (2003). *Multiple pathways and state policy: Toward education and training beyond high school*. Boston, MA: Jobs for the Future.
- Carnevale, A. (2002, July). Preparing for the future: In today's world, students must look at education beyond high school. *American School Board Journal* 189(7): 2-26.
- Carnevale, A. & D. Desrochers. (2003). *Standards for what? The economic roots of K-16 reform*. Princeton, NJ: Educational Testing Service.
- Carnevale, A. & S. Rose. (2003). *Socioeconomic status, race/ethnicity, and selective college admissions*. New York, NY: The Century Foundation.
- Chaney, B., L. Lewis, & E. Farris. (1995). *Programs at higher education institutions for disadvantaged precollege students*. Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement (NCES 96-230).
- Choy, S. (2002). *Access and persistence: Findings from 10 years of longitudinal research on students*. Washington, DC: American Council on Education.
- The College Board. (2003). *Trends in student aid, 2003*. Washington, DC: The College Entrance Examination Board.
- . (2001). *Student whose parents did not go to college. Findings from the condition of education 2001*. Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement (NCES 2001-126).
- Conley, D. (2003). *Mixed messages: What state high school tests communicate about student readiness for college*. Eugene, OR: The Center for Educational Policy Research, University of Oregon.
- Fenske, R., C. Geranios, J. Keller, & D. Moore. (1997). *Early intervention programs: Opening the door to higher education*. ASHE-ERIC Higher Education Report, 25(6). Washington, DC: George Washington University, Graduate School of Education and Human Development.
- Flint, T. (1992). Parental and planning influences on the formation of student college choice sets. *Research in Higher Education*. 21(2): 21-32.
- Gandara, P. (2002a). A study of high school Puente: What we have learned about preparing Latino youth for postsecondary education. *Educational Policy* 16(4): 474-495.
- Gandara, P., & Bial, D. (1999). *Paving the way to higher education: K-12 intervention programs for underrepresented youth*. Washington, DC: National Postsecondary Education Cooperative.

Cándara, P. & Moreno, J. (2002). The Puente project: Issues and perspectives on preparing Latino youth for higher education. *Educational Policy* 16(4): 463–473.

Gayler, K., N. Chudowsky, M. Hamilton, N. Kober, & M. Yeager. (2004) *State high school exit exams: A maturing reform*. Washington, DC: Center for Educational Policy.

George, P., & Aronson, R. (2002). *How do educators' cultural beliefs systems affect underserved students' pursuit of postsecondary education?* A white paper sponsored by NASSP in conjunction with the Pathways to College Network. Boston, MA: Pathways to College Network.

Gladieux, L. F. (2004). Low-income students and the affordability of higher education. In R.D. Kahlenberg (ed.), *America's untapped resource: Low-income students in higher education*. New York, NY: The Century Foundation.

Gladieux, L. & W. S. Swail. (1999). Financial aid is not enough: Improving the odds for minority and low-income students. In J.E. King (ed.), *Financing a college education: How it works and how it's changing*. Phoenix, AZ: Oryx Press.

Gullatt, Y., & Jan, W. (2002). *How do pre-collegiate academic outreach programs impact college-going among underrepresented students?* A white paper for the Pathways to College Network. Boston, MA: Pathways to College Network.

Hart, P. J. & Jacobi, M. (1992). *From gatekeeper to advocate: Transforming the role of the school counselor*. New York, NY: College Entrance Exam Board.

Hawkins, D. (2003). *The State of college admissions*. Alexandria, VA: National Association for College Admission Counseling.

Haycock, K. (2004). The opportunity gap: No matter how you look at it, low-income and minority students get fewer good teachers. *Thinking K–16* 8(1): 36–42.

---. (2001, March). Closing the achievement gap. *Educational Leadership* 58(6): 6–11.

Hearn, J. & J. Holdsworth. (2004). Co-curricular activities and students' college prospects: Is there a connection? In W. G. Tierney, Z. B. Corwin, & J. E. Colyar (ed.), *Preparing for college: Nine elements of effective outreach*. Albany, NY: State University of New York Press.

Heller, D. (2003). *Pell grant recipients in selective colleges and universities*. New York, NY: The Century Foundation, Issue Brief Series. Retrieved from the worldwide web (April 12, 2004), <http://www.tcf.org/4L/4LMain.asp?SubjectID=1&TopicID=0&ArticleID=230>.

---. (2002). *Conditions of access: Higher education for lower-income students*. Westport, CT: American Council on Education/Praeger Series on Higher Education.

Heller, D. (1999). The effects of tuition and state financial aid on public college enrollment. *Review of Higher Education* 23(1): 65-89.

Horn, L. (1997). *Confronting the odds: Students at risk and the pipeline to higher education*. Washington, DC: U.S. Department of Education, National Center for Education Statistics (NCES, 98-094).

Horn, L., & X. Chen. (1998). *Toward resiliency: At-risk students who make it to college*. Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement.

Hossler, D., J. Braxton, & G. Coopersmith. (1989). Understanding student college choice. In J. C. Smart (ed.), *Higher education: Handbook of theory and research* (pp. 231-288). Vol. V. New York, NY: Agathon Press.

Hossler, D., Schmidt, J., & Vesper, N. (1999). *Going to college: How social, economic, and educational factors influence the decisions students make*. Baltimore, MD: John Hopkins University Press.

Ikenberry, S. O., & Hartle, T. (1998). *Too little knowledge is a dangerous thing: What the public knows and thinks about paying for college*. Washington, DC: American Council on Education.

Jobs for the Future and Lake Snell Perry & Associates. (2003). *Leaks in the postsecondary pipeline: A survey of Americans*. Boston, MA: Jobs for the Future.

Kahlenberg, R. (2004). *America's untapped resource: Low-income students in higher education*. New York, NY: The Century Foundation.

---. (2001). *All together now: Creating middle-class schools through public school choice*. Washington, DC: Brookings Institution Press.

Kazis, R., H. Pennington, & K. Conklin. (2003). *Ready for tomorrow: Helping all students achieve secondary and postsecondary success*. Washington, DC: Jobs for the Future & National Governors Association Center for Best Practices (NGA) Report.

King, J. E. (1999). (ed.). *Financing a college education: How it works and how it's changing*. Phoenix, AZ: Oryx Press.

---. (1996). *The decision to go to college. Attitudes and experiences associated with college attendance among low-income students*. New York, NY: The College Board.

King, J., E. Anderson, & M. Corrigan. (ed). (2003) *Changing student attendance patterns for policy and practice: Challenges for policy and practice*. New Directions for Higher Education. Number 121. San Francisco, CA: Jossey-Bass Publishers.

Kinzie, J., M. Palmer, J. Hayek, D. Hossler, S. Jacob, & H. Cummings. (2004). *Fifty years of college choice: Social, political and institutional influences on the decision-making process*. Indianapolis, IN: Lumina Foundation for Education, New Agenda Series.

Kirst, M. W. & A. Venezia (ed.). (2004). *From high school to college: Improving opportunities for success in postsecondary education*. San Francisco, CA: Jossey-Bass Publishers.

Lee, V. E., & Ekstrom, R. B. (1987, Summer). Student access to guidance counseling in high school. *American Educational Research Journal* 24: 287-309.

Levine, A., & Nidiffer, J. (1996). *Beating the odds: How the poor get to college*. San Francisco, CA: Jossey-Bass Publishers.

Martinez, M. & S. Klopott. (2003). *Improving college access for minority, low-income, and first-generation students*. Boston, MA: Pathways to College Network.

----. (2002). *How is school reform tied to increasing college access and success for low-income and minority youth?* A white paper for the Pathways to College Network. Boston, MA: Pathways to College Network.

McDonough, P. M. (2004). Counseling matters: Knowledge, assistance, and organizational commitment in college preparation. In W. G. Tierney, Z. B. Corwin, & J. E. Colyar (eds.), *Preparing for college: Nine elements of effective outreach*. Albany, NY: State University of New York Press.

----. (1999). *Race-based or conflict-based college admissions?* Paper presented at the annual meeting of the American Educational Research Association, Montreal, Canada.

----. (1997). *Choosing colleges. How social class and schools structure opportunity*. Albany, NY: State University of New York Press.

McDonough, P. M., M. Ventresca, & C. Outcalt. (2000). Field of dreams: Organizational field approaches to understanding the transformation of college access, 1965-1995. *Higher education: Handbook of theory and research*. Vol. XIV, 371-405.

McPherson, M. & M. Shapiro (1998). *The student aid game: Meeting need and rewarding talent in American higher education*. Princeton, NJ: Princeton University Press.

Michaelson, M. (2003, July 18). Affirmative action: What's next? The court's pronouncements are more dramatic and subtle than the headlines. *The Chronicle of Higher Education*. Retrieved from the worldwide web, <http://chronicle.com/prm/weekly/v49/i45/45b01102.htm>.

Miller, E. I. (1997). Parents' views on the value of a college education and how much they will pay for it. *Journal of Student Financial Aid* 27(1): 7-20.

- Moles, O. (1991). Guidance programs in American high schools: A descriptive portrait. *The School Counselor* 38: 163-177.
- Mortenson, T. (2001, April). Trends in college participation by family income: 1970-1999. *Postsecondary Education OPPORTUNITY* 106: 1-8.
- Myers, D. & A. Schrim. (1999). *The impacts of upward bound: Final report for phase I of the national evaluation*. Washington, DC: U.S. Department of Education, Planning and Evaluation Services.
- Nye, J., P. Zelikow, & D. King. (1997). *Why people don't trust government*. Cambridge, MA: Harvard University Press.
- Oakes, J. (2004). Investigating the claims in Williams v. state of California: An unconstitutional denial of education's basic tools? *Teachers College Record* 106(10): 1889-1905.
- Oakes, J., J. Rogers, M. Lipton, & E. Morrell. (2002). The social construction of college access: Confronting the technical, cultural, and political barriers to low-income students of color. In W. G. Tierney & L. S. Hagedorn (ed.), *Increasing access to college: Extending possibilities for all students* (pp. 81-104). Albany, NY: State University of New York Press.
- Obidah, J., T. Christie, & P. McDonough. (2004). Less tests, more redress: Improving minority and low-income students' academic achievement. *Penn GSE Perspectives on Urban Education*.
- Orfield, G. (1998). Exclusions of the majority: Shrinking public access and public policy in metropolitan Los Angeles. *The Urban Review* 20(3): 147-163.
- . (1996). The growth of segregation. *Dismantling segregation: The quiet reversal of Brown v. the board of education*. New York, NY: The New Press.
- Pathways to College Network. (2003). *A shared agenda: A leadership challenge to improve college access and success*. Boston, MA: The Education Resources Institute.
- Paul, F. G. (2002). *Bridging paradigms: A profession in transition*. Oakland, CA: University of California Office of the President.
- Perna, L. (2004). The key to college access: Rigorous academic preparation. In W. G. Tierney, Z. B. Corwin, & J. E. Colyar (ed.), *Preparing for college: Nine elements of effective outreach*. Albany, NY: State University of New York Press.
- . (2000). Racial/ethnic group differences in college enrollment decisions. In A. Cabrera & S. La Nasa (ed.), *Understanding college choice among disadvantaged students* (pp. 65-83). New Directions for Institutional Research, Number 107. San Francisco, CA: Jossey-Bass Publishers.

Perna, L. & W. S. Swail. (2002). Pre-college outreach and early intervention programs. In D. Heller (ed.), *Conditions of access: Higher education for lower-income students*. Westport, CT: American Council on Education/Praeger Series on Higher Education.

Plank, S. B., & Jordan, W. J. (2001). Effects of information, guidance, and actions on post-secondary destinations: A study of talent loss. *American Educational Research Journal* 38(4): 947-979.

Quartz, K. H. (2003). Too angry to leave: Supporting new teachers' commitment to transform urban schools. *Journal of Teacher Education* 54.

Rosenbaum, J. (2001). *Beyond college for all*. New York, NY: Russell Sage.

Rosenbaum, J., S. R. Miller, & M.S. Krei. (1996). Gatekeeping in an era of more open gates: High school counselors' views of their influence on students' college plans. *American Journal of Education* 104(4): 257-279.

St. John, E. (2002a). *The access challenge: Rethinking the causes of the opportunity gap*. Policy Issue Report No. 2002-1. Bloomington, IN: Indiana Educational Policy Center.

----. (2002b). *Meeting the access challenge: Indiana's twenty-first century scholars program*. Indianapolis, IN: Lumina Foundation for Education, New Agenda Series.

St. John, E., & J. Noell. (1989). The effects of student financial aid on access to higher education: An analysis of progress with special consideration of minority enrollment. *Research in Higher Education* 30: 563-81.

Stage, F. & D. Hossler. (1989). Differences in family influences on college attendance plans for male and female ninth graders. *Research in Higher Education* 30(3): 301-315.

Stampen, J. O. & W. L. Hansen. (2004). *Refocusing the HEA reauthorization to reflect the priorities of higher education policy analysts and researchers*. Madison, WI: Wisconsin Center for the Advancement of Postsecondary Education.

Swail, W. S. (2000). Preparing America's disadvantaged for college: Programs that increase college opportunity. In A. F. Cabrera & S. M. La Nasa (ed.), *Understanding the college choice of disadvantaged students* (pp. 85-101). New Directions for Institutional Research. Number 107. San Francisco, CA: Jossey-Bass Publishers.

Tell, C. (2003). *The first year: Student performance on 10th grade benchmark standards and subsequent performance in the first year of college (2001-02)*. Portland, OR: Oregon University System, Oregon Department of Education, Oregon Department of Community Colleges, and Workforce Development.

Terenzini, P. T., A. F. Cabrera, & E. M. Bernal. (2001). *Swimming against the tide: The poor in American higher education* (Research Report 2001-1). New York, NY: The College Board.

Tienda, M., K. Cortes, & S. Niu. (2003). College attendance and the Texas top 10 percent law: Permanent contagion or transitory promise? Paper presented at the Conference on Expanding Opportunity in Higher Education, the Harvard Civil Rights Project, Sacramento, CA.

Tierney, W. & S. Auerbach. (2004). Toward developing an untapped resource: The role of families in college preparation. In W. Tierney, Z. Corwin, & J. Colyar (ed.), *Preparing for college: Nine elements of effective outreach*. Albany, NY: State University of New York Press.

Tierney, W. G., Z. B. Corwin, & J. E. Colyar (ed.). (2004). *Preparing for college: Nine elements of effective outreach*. Albany, NY: State University of New York Press.

Tomas Rivera Policy Institute and the Sallie Mae Fund. (2004, March). *Caught in the financial aid information divide: A national survey of Latino perspectives on financial aid*. Los Angeles, CA: University of Southern California.

Viadero, D. (2001, October 10). Every student seen to need college prep. *Education Week* 21.

U.S. Department of Education, National Center for Education Statistics. (2004). *The condition of education 2004*. Washington, DC: U.S. Government Printing Office (NCES 2004-077).

----. (2003a). *Getting ready to pay for college: What students and their parents know about the cost of college tuition and what they are doing to find out*. Washington, DC: U.S. Government Printing Office (NCES 2003-030).

----. (2003a). *The condition of education 2003*. Washington, DC: U.S. Government Printing Office (NCES 2003-067).

----. (2002). *Profile of undergraduates in U.S. postsecondary institutions: 1999-2000*, by L. Horn, K. Peter, & K. Rooney. Washington, DC: U.S. Government Printing Office (NCES 2002-168).

U.S. Department of Labor, Bureau of Labor Statistics. (2004). BLS Releases 2002-12 Employment Projections. Retrieved from the worldwide web (April 12, 2004), <http://www.bls.gov/news.release/ecopro.nr0.htm>.

WICHE. (2004). *Knocking at the college door: Projections of high school graduates by state, income, and race/ethnicity, 1988-2018*. Retrieved from the worldwide web (January 29, 2004), <http://www.licy/knocking/1988-2018/highlights1.htm>.

About the Author

Patricia M. McDonough is a Professor in the Higher Education and Organizational Change Division at the Graduate School of Education and Information Studies, University of California, Los Angeles.



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