

1 *This chapter discusses results of a fifty-state study conducted through the Academic Pathways to Access and Student Success initiative, and identifies curricular, instructional, and organizational approaches that increase opportunities for underserved students to attend college.*

Creating Access and Success: Academic Pathways Reaching Underserved Students

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The aspiration to attend college is nearly universal among American youth, yet the fulfillment of such desires is much more limited. According to the U.S. Department of Education (2004), roughly 90 percent of the 2002 high school sophomore cohort desired a college education, and over 70 percent expected to complete a four-year college degree. In actuality, only 62 percent of this group enrolled in college, and nearly half of the college entrants failed to return for a second year. Those who do not enter or remain in college do not experience the same benefits, such as increased annual earnings, as college graduates (Howe, 1988; Rosenbaum, 2001).

The term *college access* links a number of different issues: how low- and middle-income families pay college costs, how students traditionally underrepresented in higher education overcome discrimination and social disadvantage, and how well high school graduates are prepared for college-level work (Cabrera and La Nasa, 2001). Several researchers and policymakers have addressed the importance of curricular and institutional structures that enhance links between secondary and postsecondary education (Lee, Smith,

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and Croninger, 1995; Lewis, 2003). Nonetheless, greater efforts to increase access to and success in college through enhanced alignment and improved curricula do not necessarily translate into successful outcomes for underserved students. Success in college depends on their having adequate academic preparation so they can be retained in college and earn credentials. Initiatives that bridge the curricular gap between high school and college are often partially implemented or underutilized, partly because of insufficient government financial support or inadequate institutional capacity and commitment (Lee and Bryk, 1988).

Academic Pathways

Pathways are one way of thinking about secondary-to-postsecondary transition opportunities; academic pathways refer to boundary-spanning curricula, instructional and organizational strategies, and meaningful assessments that either link or extend from high school to college, including both two- and four-year institutions. Academic pathways support student transition by straddling secondary and postsecondary education, helping students overcome hurdles or fill in gaps that would otherwise stand in their way. They often involve new organizational structures or policy mechanisms that are designed to integrate different levels of education.

A number of different models and approaches to the transition from high school to college are proliferating throughout the United States. These initiatives are either expanding on old ideas or creating new ones to support student matriculation to college. Some of these models explicitly aim to enhance access to college for students who have been historically underrepresented in higher education. These academic pathways encourage students who are likely to face barriers to college entry and attendance to engage in advanced learning in academic- and career-related subjects at the K–12 level and provide support structures to ease their transition to college. This chapter's discussion is organized into three sections: the community college role in academic pathways, academic pathway initiatives to support access and student success, and finally, results of a nationwide study of these programs: the Academic Pathways to Student Success (APASS) initiative. The discussion of APASS results includes information about whether states—or localities within states—make special efforts to reach underserved students, and whether the academic pathways have legislative support. We conclude by considering the limitations and future potential of academic pathways for increasing college access.

The Role of the Community College in Academic Pathways

Community colleges play an important role in expanding access to college by enrolling students who are members of ethnic minority groups or who

are low income, first generation, or underprepared for college-level work. In 2003, for example, students of color represented 36 percent of all students enrolled in community colleges (U.S. Department of Education, 2005). As well, recent research (Kurlaender, 2006) has shown that for Latinos, community colleges are the higher education institution of choice. Because of their open access mission and state and local governing bodies that are similar to—and sometimes the same as—those for K–12 schools, community colleges are often better suited to work with both K–12 schools and other community and civic organizations than four-year institutions, facilitating their role in K–12 educational reform initiatives in their communities (Boswell, 2001; Orr and Bragg, 2001). As demand for college increases, community colleges are logical and appropriate institutions to link high school and college for students heretofore underrepresented in higher education.

The Academic Pathways to Access and Student Success Initiative

In 2004, with funding from the Lumina Foundation for Education, the Office of Community College Research and Leadership at the University of Illinois at Urbana-Champaign launched a new research and development initiative called Academic Pathways to Access and Student Success (APASS; www.apass.uiuc.edu). The primary goal of this initiative was to document existing and emerging academic pathways that assist high school students in fulfilling their aspirations to attend college. The APASS project examined academic pathways that have existed for some time, such as Advanced Placement, along with newer models, such as early and middle college high schools. We sought to learn how these models and approaches have been implemented and used by local educational institutions to reach diverse student populations. Our specific goals were to document the incidence of academic pathways emphasizing the high school to college transition in the fifty states, describe the underserved student groups for whom many of these pathways were created, and identify the state and federal legislation and fiscal support associated with local implementation of each pathway.

Between January 2004 and August 2005, we engaged in multiple methods of data collection, including telephone interviews with 129 state-level secondary and postsecondary officials. Between December 2004 and July 2005 site visits were conducted in seven states (Florida, Indiana, Idaho, Kentucky, Massachusetts, Oregon, and Washington), where we met with state and local officials to explore state policy and local implementation. Between December 2005 and March 2006, we followed up with e-mails and telephone calls to update information from the fifty states, and we conducted an online survey to collect information about local implementation, again with the goal of understanding how states and local entities work together to reach underserved students. Listed in alphabetical order, the APASS project documented implementation of nine academic pathways:

- Advanced Placement
- Bridge programs
- College-Level Examination Program
- Distance learning/virtual high schools and colleges
- Dual credit, dual enrollment, and concurrent enrollment
- Early and middle college high schools
- GED programs that bridge to college
- International Baccalaureate
- Tech Prep and College Tech Prep

In addition, several pathway models and initiatives emerged through interviews with state officials, including GEAR UP, career academies, High Schools That Work, charter schools, small school reforms, and high school reforms.

Results of the Fifty-State Study

This section describes the nine pathways listed, as well as national results for each pathway. Table 1.1 summarizes the overall results of the APASS project for the nine selected academic pathways; each one is described in more detail in the following paragraphs.

Advanced Placement. Created in 1955, the Advanced Placement (AP) program involves a series of courses and tests whereby high school students can earn credit at a community college, four-year college, or university by passing a standardized AP exam with a sufficiently high score. AP is administered by the College Board (<http://apcentral.collegeboard.com/>) and implemented by high schools in every state, making it one of the most prevalent pathways in the nation. AP has a long history as a credit-based transition program, and it can act as a vehicle to help traditionally underserved high school students make the transition to college (Bailey and Karp, 2003).

APASS results reveal that local educational organizations in forty-four states make special efforts to reach underserved students through AP programs, and of these, administrators in thirty-seven states identify AP as a way to help low-income students gain access to college. Racial and ethnic minorities and students in rural areas also receive special attention through AP in several states, and eleven (Alaska, Delaware, Florida, Georgia, Idaho, Indiana, Maine, Maryland, Massachusetts, South Carolina, Virginia) indicate that AP is a top priority to facilitate access to college. These findings are supported by a recent report from the College Board (2005) that documents progress in enrolling African American, Latino, and Native American students in AP programs over the past five years. Importantly, the proportion of Latino students among all AP exam takers in public schools now matches their overall proportion in public schools.

State-level support for the AP program is widespread. Through the APASS study, we found that a great majority of states currently or have pre-

viously provided support for AP through federal and state legislation and funding, or by establishing direct partnerships with the College Board. As well, numerous states draw on federal incentive funds to support AP programs (Martinez and Bray, 2002). Furthermore, Arizona, Colorado, Hawaii, Idaho, Montana, New Mexico, Oregon, South Dakota, and Utah, through the Western Consortium for Accelerated Learning Opportunities, are using a federal AP incentive grant to increase the number of low-income students who enroll and succeed in AP courses and exams.

Bridge Programs. Bridge programs, frequently called transition or outreach programs, are designed to provide assistance to a wide variety of youth and adult students who have difficulty accessing college. In general, bridge programs target specific student groups, including minority students, low-income students, or those with particular disciplinary interests, supporting students' academic preparation so that college-level coursework is achievable. In the APASS study, we were particularly interested in bridge programs that introduce high school juniors and seniors who demonstrate potential for attending college to the rigors of college work.

APASS results showed that bridge programs exist in forty-five states. Of those, local educational organizations in forty-two states make special efforts to assist underserved students, particularly African Americans, Latinos, and Native Americans. Although numerous bridge programs exist across the nation, data on how these programs work and how effectively they are operated are sparse. Unlike other academic pathways identified in the APASS project, state officials rarely recognize bridge programs as a priority for helping underserved students transition to college (although this is not the case in Alaska and Indiana). This is not to say that states are unsupportive of bridge programs, but rather that they operate locally, sometimes drawing on federal funds that go directly to an institution of higher education, such as funding for Upward Bound or TRIO.

College-Level Examination Program. The College-Level Examination Program (CLEP), also administered by the College Board, is a testing program that provides students with an opportunity to demonstrate college-level achievement by taking examinations that cover material taught in the first two years of the college curriculum. Many community colleges offer credit for achievements or knowledge gained outside the traditional classroom through standardized tests such as CLEP. The CLEP program was initially established by the College Board to reach out to those in the military. CLEP exams are still free for military personnel so that troops in places with little or no access to postsecondary institutions can still earn college credit. In addition, CLEP exams are promoted as a way to assist adult and working students, home-schooled students, and current college students who want to save money (College Board, 2006).

State agency respondents noted that CLEP exams are offered in community colleges and universities in forty-seven states. However, only five report making special efforts to promote CLEP in order to increase the participation

Table 1.1.1. Incidence and Priority of the Nine Academic Pathways

<i>Academic Pathway</i>	<i>Number of States Reporting Pathway</i>	<i>Number of States Reporting Special Effort to Reach Underserved Students</i>	<i>Number of States Reporting Placing a High Priority on Pathway to Reach Underserved Students</i>
Advanced Placement	50	45 • Low-income (37) • Racial/ethnic minority (13) • Rural (10)	11 Alaska, Delaware, Florida, Georgia, Idaho, Indiana, Maine, Maryland, Massachusetts, South Carolina, Virginia
Tech Prep/College Tech Prep	50	39 • Special populations (20) • Racial/ethnic minority (13) • Low-income (9)	10 Alaska, Delaware, Hawaii, Maine, Maryland, Massachusetts, Mississippi, Nevada, New Hampshire, Ohio
Dual credit/dual enrollment	50	29 • Low-income (11) • Racial/ethnic minority (11)	16 Arkansas, Colorado, Hawaii, Idaho, Kentucky, Montana, New Jersey, New Hampshire, North Carolina, Oregon, Pennsylvania, Texas, Utah, Virginia, West Virginia, Vermont
Distance learning/virtual schools	50	36 • Rural (21) • Low-achieving and at-risk (8) • Low-income (6)	5 Alabama, Idaho, Massachusetts, West Virginia, Wyoming

Bridge programs	45	42	2	Alaska, Indiana
		• Racial/ethnic minority (21) • Low-income (16) • Low-achieving (11)		
College-Level Exam Program	47	5	1	Minnesota
		• Low-achieving (2)		
International Baccalaureate	49	17	0	
		• Low-income (10) • Racial/ethnic minority (5) • Rural (3)		
GED programs that bridge to college	43	38	0	
		• Low-achieving, at-risk, and dropout (18) • Low-income (9)		
Early or middle college high schools	23	21	3	Georgia, Massachusetts, Pennsylvania
		• Low-achieving and at-risk (13) • Racial/ethnic minority (11) • Low-income (8)		

of underserved students. Minnesota is unique among the states in its emphasis on CLEP for helping students transition from high school to college, as evidenced by the state's plan for implementing high school reform via the National Governors Association initiative (www.nga.org). Most other state officials interviewed as part of the APASS study lacked information about CLEP, and we found little capacity or interest at the state level in keeping track of students taking the CLEP exam. Nonetheless, a recent study by researchers at the College Board indicates that students who participate in CLEP programs do as well in college as students who participate in the AP program and in traditional courses (Scammacca and Dodd, 2005). External research and evaluation on CLEP's effectiveness, however, is nearly nonexistent.

Dual Credit, Dual Enrollment, and Concurrent Enrollment. Dual credit, dual enrollment, and concurrent enrollment are three related concepts. *Dual credit* means that students receive both high school and college credit for successful completion of college-level classes, whereas *dual* or *concurrent enrollment* indicates that students are enrolled in both high school and college but may not receive high school credit for their college-level courses. The term *concurrent enrollment* is sometimes applied to the dual credit earned by students who are taking a college-level course offered at their home high school.

According to the APASS study, dual credit or enrollment is one of the most prevalent academic pathways, and is present across all fifty states. Local educational organizations in twenty-nine states make special efforts to reach out to underserved student populations through dual enrollment, especially low-income, racial and ethnic minority, low-achieving, first-generation, and rural students. Forty-five states support this pathway through various policy mechanisms, and sixteen name dual credit, dual enrollment, or concurrent enrollment as a priority for increasing access to college in their state. Although policy support for this program varies among the states, thirty-eight have some type of state legislation or regulations. Similar studies by Karp, Bailey, Hughes, and Fermin (2004) and Hughes, Karp, Fermin, and Bailey (2005) on dual credit and dual enrollment policies across the fifty states show that only twelve do not have state policy that pertains to this pathway.

Two national surveys confirm the prevalence of dual credit and dual enrollment programs in American high schools and community colleges. Kleiner and Lewis (2005) found that 98 percent of public two-year institutions enrolled high school students in college courses in 2002–03. As well, community colleges are much more likely to enroll students in dual credit courses than private two-year colleges or four-year institutions. In 2002–03, 71 percent of public high schools in the United States offered dual credit courses, generating an estimated 1.2 million enrollments (Waits, Setzer, and Lewis, 2005). However, dual credit courses were more available to students attending medium or large high schools (five hundred or more enrollees), students enrolled in high schools located in towns or suburban areas, students in the central region of the country, and students attending high schools with fewer minorities. These results suggest that students' opportu-

nities to participate in dual credit programs are not distributed equally; access depends on demographic, geographic, and economic variables.

Distance Learning and Virtual High Schools and Colleges. For the purpose of this study, the term *distance learning* is defined as instruction delivered remotely to individuals located in one or more venues (Phipps, Wellman, and Merisotis, 1998). Instruction can be delivered via various methods, including written correspondence, text, graphics, audio and video, CD-ROM, the Web, or interactive television. *Virtual schools* are synonymous with *cyberschools* at the K–12 level (Long, 2004), and *virtual colleges* refer to either secondary or postsecondary institutions that provide education through Internet-based college courses.

Results of the APASS study show that distance learning or virtual high schools and colleges exist in all fifty states and are proliferating as a means of reaching a broader base of students. Officials in thirty-six states report special efforts to reach underserved students through distance learning. Five (Alabama, Idaho, Massachusetts, West Virginia, and Wyoming) indicate that distance learning or virtual schools are a priority for increasing student access to college, and support these efforts through state allocations for online education. Many states recognize rural students—in addition to low-achieving, at-risk, and low-income students—as a target population for distance learning. In most instances, states provide financial support for distance learning through new allocations (such as in Arizona and Indiana), by redistributing general funds (such as in Missouri and North Carolina), or via a combination of both methods. Sixteen states use legislation to guide and regulate distance learning and virtual schools.

Shifting student demographics are an important factor fueling alternative educational delivery methods, and have spurred efforts to bring college-level instruction to students, rather than to expect all students to come to college. Indeed, the number of students interested in distance learning opportunities has grown dramatically in recent years (Web-Based Education Commission, 2000). As well, through partnerships between K–12 schools and community colleges (see, for example, Spears and Tatroe, 1997), several states are blending distance learning with other pathway models, such as dual credit, dual enrollment, and AP. In particular, AP, dual credit, and GED programs that bridge to college are increasingly delivered through virtual schools or the Web. Community colleges are often actively involved in developing and expanding distance learning. For example, Pennsylvania runs its distance learning project primarily through its community colleges, and Oregon offers a wide array of secondary and postsecondary distance courses to allow students of all ages to complete college degree programs.

Early and Middle College High Schools. Early and middle college high schools blend the organizational structures of high school and college through a rigorous academic curriculum (<http://www.earlycollege.org>). These institutions offer opportunities for students to earn a high school diploma and an associate of arts degree (or enough college credits to enter a liberal arts

program at a four-year institution as a junior) within five years. Early college high schools are modeled after middle college high schools that were first developed at LaGuardia Community College (New York) in the mid-1970s. Both early and middle college high schools target at-risk or traditionally underserved students, and most are located on community college campuses.

Since their launch in 2002, early college high schools have been a fast-growing pathway model. According to a report by Jobs for the Future (2005), nineteen states had early college high schools in 2004; in 2005, early and middle college high schools were implemented in twenty-five states. Currently, seven (California, Georgia, North Carolina, Ohio, Oregon, Texas, and Utah) have statewide early college initiatives. Corroborating these results, the APASS survey found that twenty-three states had implemented this pathway model locally, and three (Georgia, Massachusetts, and Pennsylvania) indicated an intention to make this model a high priority to encourage student access to college. Special efforts to use early and middle college high schools to assist low-achieving students and racial and ethnic minorities in accessing college were reported in twenty-one states. Although support for early and middle college high schools comes mainly from foundations, in many instances it is supplemented by local K–12 funding. In California and Washington, two of the seven states with statewide early college initiatives, community colleges officially play the lead role in advancing this pathway.

General Educational Development (GED) as a Bridge to College. The General Education Development certificate, administered by the American Council on Education, is commonly referred to as an equivalent to the high school diploma. The GED was started in 1942 as a way of providing veterans who lacked a high school diploma with a chance to obtain an equivalent credential (Chaplin, 1999). It became available to nonveterans in 1952. By 1963 all fifty states administered the GED (Cameron and Heckman, 1993). For the APASS study, we were particularly interested in looking at GED and Adult Basic Education (ABE) programs that seek to link to a college curriculum and provide students with the option of completing a college degree.

Results of the APASS study show that as many as forty-three states have secondary and postsecondary educational organizations that attempt to use GED and ABE programs to help underserved students access postsecondary education. Students who are at risk of dropping out or who have dropped out, those enrolled in English as a Second Language (ESL) courses, and those who are incarcerated frequently see the GED as an entry point to college. As well, low-achieving, low-income, racial and ethnic minority, and rural students are identified as underserved student populations that local organizations in thirty-eight states are reaching through GED programs. APASS data indicate that in thirty-nine states, legislation or funding is employed to support this pathway model. GED preparatory course work is generally offered by K–12 ABE divisions, adult literacy programs, or community colleges. Community colleges play an important role in developing strategies to improve adult literacy and GED completion rates. For exam-

ple, Massachusetts developed GED transition programs to help students further their education after receiving their high school equivalency.

In conjunction with K–12 ABE divisions, many community colleges offer GED programs and testing services that enhance the skills and abilities of individuals preparing for the workforce. Attempting to support implementation of these programs nationally, the National Council on Workforce Education and Jobs for the Future has launched the Breaking Through initiative, which works with sixteen community colleges across the country. On the state level, Florida's GED PLUS College Preparation Program provides GED students with the necessary skills for successful transition into college-level courses. More than 68 percent of Florida GED PLUS candidates plan to pursue higher education to expand their employment options and express aspirations to attend Florida's community colleges, technical education centers, or universities (Guglielmino, Pittman, and Vondracek, 2005).

International Baccalaureate. The International Baccalaureate (IB) diploma program, established in 1968, is intended for students in their last two years of secondary school and prepares them for college-level work. IB grew out of efforts by international schools to establish a common curriculum and a credential for entrance to universities. According to the International Baccalaureate Organization (2005), 479 IB diploma programs exist in the United States. More than twenty-five thousand American students in more than three hundred high schools participate in the IB program and constitute more than half of all IB students worldwide (Southern Regional Educational Board, 2003).

Because the IB program has existed for more than three decades, it is not surprising that this pathway model is identified by officials in forty-nine states. Yet despite a fairly large number of states that recognize IB programs, results of the APASS study show that less than half of them report special efforts to reach underserved students through IB. In addition, none of the states see this pathway as a top priority for facilitating underserved students' transition to college. In states that report making some special efforts to reach underserved students, low-income students are most frequently identified, followed by racial and ethnic minorities and rural students. Public policies related to the IB pathway are identified by officials in sixteen states. For example, Kansas and Kentucky have state policies that require all high schools to provide students with access to IB, dual credit, or AP courses. South Dakota has a state policy specifying that IB and AP credits must be accepted by public postsecondary institutions. As well, some states subsidize the IB exam fee for low-income students.

APASS data corroborate the Southern Regional Educational Board's (2003) finding that California has more schools participating in the IB program than any other state, followed by Florida. However, there is a lack of state or national research examining the effectiveness of IB programs in improving students' access to college. This may be, in part, because the IB program has been eclipsed in many states by the AP program, whose courses

are accepted by most colleges and universities. Furthermore, the role of the community college in promoting the IB program appears to be very limited.

Tech Prep and College Tech Prep. Tech Prep was established in 1990 through the reauthorization of the Carl D. Perkins Vocational and Technical Education Act, and is a federally funded program promoting the integration of academic, career, and technical education. Tech Prep creates a sequential curriculum extending from high schools to community and technical colleges, and in some cases to four-year colleges and universities. Originally, Tech Prep was designed to be a combined sequence of two years of high school plus two years of postsecondary education (Parnell, 1985), but in recent years the model has been expanded to begin earlier than the eleventh grade and to extend to the baccalaureate. Some states, such as North Carolina, have adopted the label *College Tech Prep* to designate the importance of college preparation and differentiate it from secondary career and technical education (CTE). By federal law, Tech Prep programs must involve a consortium including both secondary schools and postsecondary institutions with a foundation of articulation and integration of high school and college academic and CTE coursework.

Because it is supported at the federal level, Tech Prep is recognized by all fifty states. Administrators in thirty-nine states indicate that local educational organizations make special efforts to reach underserved students; forty-nine states support the program primarily through the administration of federal funds. Since the Perkins legislation uses the particular language of “special population” as an omnibus category combining a wide range of students who are considered disadvantaged due to their racial, ethnic, economic, cultural, or physical characteristics, many states name “special populations” as the primary student group they intend to serve.

Almost all community colleges in the United States demonstrate some level of involvement in Tech Prep, and about 65 percent of consortia use community colleges as the lead institution in managing grant funds and performing administrative duties (Hershey, Silverberg, Owens, and Hulsey, 1998; Orr, 1998). Silverberg, Warner, Fong, and Goodwin (2004) estimate that 1.3 million high school students participate in Tech Prep, which accounted for 47 percent of all high schools and 10 percent of total high school enrollment in 2001. Bragg and others (2002) estimated that approximately 80 percent of Tech Prep students matriculated to college in seven of the eight consortia they studied. The percentage of Tech Prep students who continued to the community college leading the initiative ranged from a low of 16.5 percent to a high of almost 90 percent. About half of the students progressed in the same CTE program of study, suggesting that this pathway model’s sequential curriculum has substantial holding power.

Conclusion

Promoting access to college is a widely accepted educational goal in the United States. However, the models and approaches available to assist stu-

dents in matriculating from high school to college are wide-ranging in their intentions and outcomes. Our aim in conducting the APASS study was to provide a composite picture of academic pathways that have existed or are emerging on the national level that emphasize college access and success, including student transitions to the community college. APASS results suggest that much work lies ahead for the nine selected pathways, either individually or in concert with one another, if they are to reach underserved students in greater numbers. Many state officials are barely aware of the pathways that exist outside their borders, and some have limited knowledge of new pathways starting up inside their jurisdictions. None of the pathways that we investigated has demonstrated substantial success in facilitating students'—particularly underserved students'—transition to college. Some pathway models are receiving considerable funding from the federal government and private foundations, yet the research is far too limited to recommend particular policy mechanisms and implementation strategies for specific student groups. Even so, these developments suggest options that need to be explored if the United States is to do a better job of encouraging and supporting more of its youth to participate and succeed in college.

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