I was pleased to be asked to compile a set of papers outlining aspects of community colleges’ contribution and impact on their students, communities, and the nation as a whole. The four papers included here do so quite well. Specifically, they focus on two areas of contemporary interest and emphasis in research on community colleges and their role in the American higher education framework as well as the local, regional, and national policy implications of the ways in which community colleges carry out their multi-faceted missions: namely, community college students’ progress toward degree attainment and community colleges’ economic contributions both to their local/regional areas and the nation as a whole.

In terms of the nation’s current emphasis on college success and completion, Clagett describes a statewide effort in Maryland to increase the accuracy of data reporting regarding student success and completion. Then, Friedel, et.al. consider the higher education completion agenda from a different, more “macro” perspective. First, they review current national efforts and initiatives that emphasize both increasing enrollments and graduation rates. They then detail several factors, including the recent recession and resulting budget cuts in most states that mitigate against increases in both enrollment and graduation.

In terms of community college’s economic impact and contribution, Bers details two-year colleges’ impact on their local and regional economies. Finally, the Mullin and Phillippe paper makes the case for community colleges’ impact on a national scale.

Taken together, these four papers speak strongly to the contributions community colleges make to individual students, local and regional economies, states, and the nation as a whole.

JEFF SEYBERT
Johnson County Community College
Associate Editor, Planning for Higher Education
The Maryland Model of Community College Student Degree Progress

by Craig A. Clagett

To realize the goals of the national ‘completion agenda’ will require more graduates from the nation’s community colleges and increases in graduation rates.

A majority—but not all—of the students enrolling in degree-credit courses at Maryland community colleges intend to earn a college degree—an associate’s degree from the community college, a bachelor’s degree from a four-year college or university, or both. To meet both enrollment management and accountability needs, the colleges monitor the degree progress of students through the “Maryland Model of Community College Student Degree Progress,” which was first implemented by Maryland’s community colleges in 2005. The model addressed many of the flaws in existing completion metrics and incorporated developmental education status as a key analytic. This article reviews findings for seven entering fall cohorts and includes an extension of the model to six years at one college. Results are compared to graduation rates at four-year institutions in Maryland. The article concludes with a discussion of reform efforts in developmental education, perhaps the primary effect of the model in Maryland.

THE COMPLETION AGENDA

In a speech to a joint session of Congress in February 2009, President Barack Obama pledged that the United States would have the highest proportion of college graduates in the world by 2020. Six national community college organizations, led by the American Association of Community Colleges and the Association of Community College Trustees, signed “A Call to Action” charging the colleges with producing 50 percent more graduates by 2020. The Lumina Foundation stated its goal to increase the percentage of the American population with degrees to 60 by 2025, and the Bill & Melinda Gates Foundation set a target of doubling the number of low-income adults who earn certificates or degrees by the time they reach age 26.

To realize the goals of the national “completion agenda” will require more graduates from the nation’s community colleges and, given near-term demographic trends showing declines in the number of high school graduates, increases in graduation rates. The challenge is formidable, prompting one community college leader to suggest that “with the completion agenda, community colleges now must confront perhaps the toughest task ever in higher education” (O’Banion 2010, p. 46).

Where do completion rates for students starting at community colleges stand? Among the more trustworthy sources on completion rates is the 2004/09 Beginning Postsecondary Students Longitudinal Study (BPS:04/09) conducted by the National Center for Education Statistics. Among students beginning college in 2003–04 at a public community college, 8 percent had earned a certificate, 14 percent had earned an associate’s degree, and 12 percent had earned a bachelor’s degree within six years. Another 20 percent were still enrolled in postsecondary education. Forty-six percent had not earned an award and were not enrolled at any institution (Radford et al. 2010).
THE MARYLAND MODEL OF COMMUNITY COLLEGE
STUDENT DEGREE PROGRESS

The Maryland Model of Community College Student Degree Progress is a framework for analyzing and reporting the progress toward degree completion of community college students. The model incorporates developmental education needs and completion, interim measures of success, and transfer to other institutions including private and out-of-state institutions.

The model was developed by the Maryland Community College Accountability Work Team during 2004 in response to a charge from the statewide community college presidents’ group. The presidents appointed the work team on March 5, 2004, with an initial charge to create a statewide assessment model incorporating developmental studies, graduation, and transfer. Following a suggestion of the work team chair, the charge was expanded to include the development of recommendations for changes to the state-mandated annual Performance Accountability Reports required of all Maryland community colleges.

Over the March 2004–February 2005 period the work team completed an extensive national literature review of state accountability systems and indicators. The basic framework for the Maryland Model was adapted from statewide accountability practices in Texas (Texas Higher Education Coordinating Board 2004). The definition of the study cohort was adapted from one used in Florida.

Guidelines and reporting templates were distributed to the institutional research (IR) offices of Maryland’s 16 community colleges in February 2005. Working with the IR professionals through the Maryland Community College Research Group, the work team provided direction and clarification throughout the spring and summer of 2005. By January 2006, all 16 colleges had completed the analysis for students entering in fall 2000.

The college presidents endorsed the Maryland Model and other proposed changes to the state-mandated Performance Accountability Reports on September 16, 2005. The Maryland Association of Community Colleges presented the proposed revisions, including indicators derived from the Maryland Model, to representatives of the Maryland Higher Education Commission, Maryland Department of Legislative Services, and Maryland Department of Management and Budget on November 17, 2005. The proposal was endorsed at that meeting and subsequently adopted by the Maryland Higher Education Commission in February 2006. The first Performance Accountability Reports incorporating indicators from the Maryland Model were submitted to the commission on July 1, 2006.

MEASURES OF DEGREE PROGRESS

Degree progress is measured at the end of specific periods of time. Given that most community college students do not attend full time without interruption, but instead enroll part time and often stop out for a semester or longer, statistics produced at two, three, or four years after entry will fail to account for the degree completions of students progressing at a slower pace. One way to address this reality is to include interim measures of progress such as certificate completion, continuing enrollment, or completion of designated thresholds of cumulative credits earned. It is also imperative to account for students transferring to other institutions prior to earning a credential at the community college (Clagett 2011).

Certificate completion is captured as a separate outcome category in the Maryland Model. Certificates can prepare graduates for immediate entry into the workforce while also establishing a foundation for subsequent pursuit of a degree. Some studies have concluded that the completion of certificates of at least one year can have a significant and consistent value in the labor market and should count in college completion statistics (Bosworth 2010). The certificates
accounted for in the Maryland Model typically require 30 credits of coursework. Shorter-term “letters of recognition” offered by several Maryland community colleges and non-credit certificate programs were not included in the model. Thus, depending on the application or context, certificate completion may or may not be included in completion statistics produced from the Maryland Model.

Although community colleges usually advise students aiming for a bachelor's degree to complete their associate's degree before transferring in order to reap the benefits of additional tuition savings and attain a credential, transferring before earning the associate's degree is, for many students, a rational decision. Accepting admission and assimilating into competitive baccalaureate programs and institutions, establishing mentorships with professors in their intended baccalaureate major, or embracing the residential college experience may lead students to transfer before completing their associate's degree. In addition, for a variety of reasons, universities may delay admission of incoming freshmen to the spring semester and advise them to start in the fall at a community college. These students are not seeking degrees at the community college and will transfer after one semester. Reports such as Time is the Enemy (Complete College America 2011) that report graduation rates for community colleges, with table labels such as “Associate Degree-seeking Students,” can be misleading in that these calculations may include students who are pursuing baccalaureate transfer programs with no intention of earning the associate's degree.

Thus, for two-year institutions, preparing a student for transfer to a four-year institution should be considered an outcome equally as favorable as a student earning an associate's degree. This was the conclusion of the federal Committee on Measures of Student Success (2011), which asserted that “a combined, unduplicated ‘graduation and transfer rate’ would present a more complete picture of successful outcomes for two-year institutions” (p. 20). The National Postsecondary Education Cooperative (2010) has recommended that the National Center for Education Statistics add a combined graduation-transfer rate to its College Navigator web tool.

For two-year institutions, preparing a student for transfer to a four-year institution should be considered an outcome equally as favorable as a student earning an associate's degree.

The preferred completion metric for community colleges is thus the percentage of students in the initial cohort who have graduated and/or transferred to a four-year institution. It is important to include transfers to out-of-state institutions in these calculations. The Maryland Model found that a fourth of the community college transfers to baccalaureate institutions enrolled in colleges and universities outside of Maryland. Studies using large national databases have documented similar proportions of transfers crossing state lines (National Student Clearinghouse Research Center 2012b). Reliance on state reporting systems that do not use national databases such as the National Student Clearinghouse to follow student mobility results in serious underestimates of student progress (Boughan 2001).

Given the relatively slow pace that circumstances may impose on community college student degree progress, interim measures of success short of completion of a credential or transfer to a baccalaureate institution are useful. At a minimum, since progress metrics are by definition time bound, a measure acknowledging continuing enrollment is warranted. Inclusion of students still enrolled at the end of the study period has long been advocated for in completion measures (Clagett 1995; Joint Committee on Accountability Reporting 1996). In addition, “substantial preparation for transfer” is addressed in the Maryland Model by identification of students who have completed 30 credits with a cumulative grade point average of 2.0 and above on a four-point scale.

The primary metrics published from the Maryland Model are the combined graduation-transfer rate and a “successful-
persister” rate, which includes all students in a study cohort who completed a certificate or degree, transferred, earned 30 credits with a 2.0 grade point average, or were still enrolled at the end of the study period. Given the increased focus engendered by the completion agenda on institutional degree completion rates, this article also reports associate’s degree graduation rates from the initial institution attended.

**DEFINING THE STUDY PERIOD**

Defining the length of the study period has implications for both the design of the completion frameworks and the interpretation of their results. “Catalog time” assumes full-time enrollment without interruption and no need for developmental education. Though defined by the U.S. Department of Education as “normal,” catalog time—two years for the associate’s degree—is not the norm for community college students. Use of this unwarranted, pejorative term is unfortunate and meaningless for the majority of community college students whose life circumstances prohibit the assumed enrollment pattern and who thus cannot earn the associate’s degree within two years, even with stellar academic performance.

The Joint Committee on Accountability Reporting, sponsored by the American Association of State Colleges and Universities, the American Association of Community Colleges, and the National Association of State Universities and Land-Grant Colleges, suggested in 1996 that student progress be reported at catalog time, at 150 percent of catalog time, and at “eventual award time,” which was defined as the point at which 95 percent of a cohort had graduated or completed (Joint Committee on Accountability Reporting 1996). The committee suggested that eventual award time could be approximated from an annual degree file with a backward assessment of time to award. For many community colleges, this might extend the reporting period to 10 years or more. Reporting at such a point would more inclusively and accurately reflect the completion rates of entering cohorts than the shorter-term metrics currently used.

The downside to extended study periods is that reporting metrics would reflect cohorts who started college so far in the past that the impact of more recent reforms and policies would not be captured. Stakeholders and decision makers need more current feedback. A solution is to incorporate shorter-term retention and persistence indicators, interim measures of degree progress, and reporting of graduation-transfer rates at several points in time. Developers of the Maryland Model preferred reporting out to six or even eight years, but the Maryland Higher Education Commission staff would not endorse extending the reporting period beyond four. The state did agree to include the successful-persister rate in mandated state accountability reports, alleviating some of the work team’s concerns.

**DEGREE PROGRESS AND DEVELOPMENTAL EDUCATION**

The need to complete developmental or remedial coursework obviously affects degree progress. Depending on the level of need at time of entry, a student’s ability to enroll in degree-credit-bearing courses in English or mathematics may be delayed for one or more semesters. Completion of developmental coursework may also be a prerequisite to enrollment in courses in other disciplines as well, depending on institutional policies.

The Maryland Model was designed to incorporate analysis by developmental education status. The percentage of students graduating, transferring, earning 30 credits in good academic standing, and persisting at the end of the study period is reported for four groups: all students in the cohort, students who were college-ready at entry, students needing developmental coursework who completed all developmental requirements, and students yet to complete their developmental requirements.
DEFINING THE STUDY COHORT

People attend community colleges for a variety of reasons other than earning a degree. As noted by Vice Chancellor Patrick Perry of the California Community Colleges Chancellor’s Office, a third of California’s community college students—who collectively account for a quarter of all community college students in the United States—take only one course (pers. comm. May 23, 2012). An examination of the reasons for attendance by credit and noncredit students can reveal the colleges to be more like community learning centers where a majority of students do not seek a degree (Clagett 1989). National data from the Community College Survey of Student Engagement show that only 60 percent of community college students enrolled in credit courses had the associate’s degree as their primary objective. A fifth stated that the associate’s degree was not a goal at all (Center for Community College Student Engagement 2010).

Identifying degree-seekers from students’ stated intentions is not straightforward, as student goal data are often incomplete, changeable, out of date, and even deliberately false. Students may not know whether they want to pursue a degree when they enroll; indeed, clarifying goals is an important contribution of community colleges. Their stated intentions at entry may not be well grounded in an understanding of the possibilities and the requirements for achieving them, may be related to social class, and may be subject to change given their college experience. Thus colleges “should be wary of using student intentions and expectations as benchmarks for measuring their performance” (Bailey, Leinbach, and Jenkins 2006, p. 23).

Most community college students do not get to the point of entering a program of study and thus cannot be said to be actively pursuing a specific degree. In his landmark study Moving into Town—and Moving On, Adelman (2005) classified 45 percent of traditional-age community college students as “visitors” who earned fewer than 30 credits at community college. The visitors earned an average of 22 credits over the seven-year study period, with over a fourth (27.5 percent) enrolled for one year or less and only 7 percent earning college-level math credits in their first year. These enrollment behaviors are not consistent with degree attainment within the time parameters of traditional accountability measures.

A cluster-analytic study tracking first-time California community college students over seven years identified 32 percent as “drop-in” students and another 30 percent as “experimental.” The one-third identified as drop-ins attempted few credits (four on average) but had the highest course pass rates (96 percent) of all the clusters identified in the analysis. Only 17 percent of the drop-ins had reported an initial goal of earning a degree or transferring, and few had when they exited the community college. The drop-ins appeared to have accomplished the short-term ends they sought. The experimental students also attempted few credits (13 on average in seven years) but failed most of them (26 percent course pass ratio). Given their sparse enrollment histories, these two groups, accounting for over three-fifths of the entering students, cannot be said to have been degree-seeking in any meaningful sense (Bahr 2010).

In addition, college data systems may not reliably collect and update student goal data. Relying on a student’s declared major is problematic since colleges may require all students (including non-degree-seekers) to declare a major (for advising purposes, for example). Also, students may declare themselves to be degree-seeking even when they are not to qualify for financial aid.

An alternative to reliance on goal questions or declared majors is an examination of student enrollment behavior. The Transfer Assembly Project of the Center for the Study of Community Colleges, a pioneering attempt to gauge the extent of baccalaureate transfer from community colleges, adopted this approach beginning with its first survey in 1989. The project’s study populations consisted of students entering two-year colleges in a given year who had no prior experience...
at another college and who had completed at least 12 college credits at the community college. This behavioral definition, based on credits earned, was implemented both because of the unreliability of data on student intentions and to ensure a minimum amount of time for the colleges to engage in the academic preparation of their students (Szelenyi 2002). Similarly, for its core indicators of effectiveness the American Association of Community Colleges recommended reporting graduation rates based only on students who had completed 12 or more credits (Alfred, Shults, and Seybert 2007).

A similar methodological choice—to use student behavior rather than stated intentions—has been made by scholars investigating the role of entrance into a program of study in college completion (Jenkins and Cho 2012; Jenkins and Weiss 2011). Students were deemed to have entered a program of study if they had passed three courses in a program area. Course-taking behaviors were used rather than declared majors or educational objectives “because such measures are not always reliable indicators of actual student behavior and because students’ goals can change as a result of their educational experiences” (Jenkins and Cho 2012, p. 5).

The Maryland work team decided to modify a criterion used in Florida (Florida Community College System 2003) that examined the achievements of students earning at least 18 credits. The work team changed this to 18 hours attempted within the first two years and included non-credit-bearing developmental courses in the calculation.

The work team felt it incumbent upon students to make the effort to persist and succeed if the colleges were to be held accountable for their achievements. Accountability indicators are time bound (in the Performance Accountability Reports, persistence, graduation, and transfer are measured four years after entry); however, many students go part time, stop out, and have job and family responsibilities, thus progressing slowly even if they pass all their courses. Attempting 18 hours over two years is an average of nine hours attempted per year. At that pace, if a student did not need developmental education and passed every course, he or she would still take seven years to earn a “two-year” degree. Given that outcomes would be reported at the end of four years, the 18 hours attempted in two years criterion didn’t seem unreasonably high.

The cohort definition of 18 hours attempted within the first two years does not specify a minimum load in any semester, unlike many longitudinal studies that are limited to students starting full time. Research shows that many students who start full time at a community college shift to part-time attendance. For example, 52 percent of students at community colleges that participate in the Achieving the Dream project began as full-time students. Yet only 31 percent attended full time for the entire first year (Achieving the Dream 2010). Studies of Florida’s community colleges find similar results. Most students end up with a combination of full-time and part-time attendance, regardless of their initial status. Among students enrolled at least three additional semesters, only 30 percent of Florida’s “full-time” community college students enrolled full time in every semester. As a Florida College System (2011, p. 3) report concludes, “Expecting a ‘full-time’ student to complete an associate degree in two years or even three assumes that the student remains full-time and this is most often not the case. As a result, students will progress at rates slower than assumed by models that consider initial full-time students to be full-time throughout their time in college.” In Maryland, a third or more of the new students in the fall typically start as part-time students, and the work team didn’t want to exclude them based on that one term.

The cohort definition does not require the students to pass or earn any credits—they must simply attempt a total of 18 hours (typically six courses) within two years.
THE DEGREE PROGRESS COHORT: STUDENTS ATTEMPTING 18 HOURS WITHIN TWO YEARS OF ENTRY

The Maryland Model of Community College Student Degree Progress examines the enrollment and achievements of students starting in a fall semester who attempt at least 18 hours within the following two years. Approximately three-fifths of the students starting college at a Maryland community college in fall semesters 2000 through 2006 had attempted 18 hours of coursework within two years and thus were included in the study cohorts (figure 1).

Approximately 40 percent of the students starting college at a Maryland community college in the fall semester attempt fewer than 18 hours within two years. These students have not demonstrated a commitment to completing a degree at their initial community college and are appropriately excluded from graduation rate calculations in institutional accountability reports.

While this group was excluded from the study cohorts analyzed in the Maryland Model accountability reports, the group’s size warranted its further investigation by several of the colleges. In addition to students experiencing academic difficulty, this group included early transfers to four-year institutions (including spring admits to competitive colleges) and students taking only a few courses for job or personal enrichment reasons.

About half of the subset of students who entered college ready for credit classes (not needing developmental education) had attempted at least 18 hours and were in the study cohorts. Students who needed and completed developmental education (within four years) were very likely to have attempted at least 18 hours in their first two years. Conversely, approximately half of the students with developmental education needs who failed to complete their developmental program had also failed to attempt 18 hours in their first two years (figure 2).

### Figure 1 Students Attempting 18 Hours Within First Two Years: All First-time Fall Entering Students, Maryland Community Colleges

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total fall first-time entrants</td>
<td>24,127</td>
<td>25,413</td>
<td>26,932</td>
<td>26,323</td>
<td>23,786</td>
<td>25,317</td>
<td>26,765</td>
</tr>
<tr>
<td>Attempted 18 hours</td>
<td>14,521</td>
<td>14,730</td>
<td>15,937</td>
<td>15,250</td>
<td>14,928</td>
<td>15,415</td>
<td>16,977</td>
</tr>
<tr>
<td>Percent in study cohort</td>
<td>60.2%</td>
<td>58.0%</td>
<td>59.2%</td>
<td>57.9%</td>
<td>62.8%</td>
<td>60.9%</td>
<td>63.4%</td>
</tr>
</tbody>
</table>

### Figure 2 Students Attempting 18 Hours Within First Two Years: All Students, by Developmental Status, Maryland Community Colleges

<table>
<thead>
<tr>
<th></th>
<th>Fall 2000</th>
<th>Fall 2001</th>
<th>Fall 2002</th>
<th>Fall 2003</th>
<th>Fall 2004</th>
<th>Fall 2005</th>
<th>Fall 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>College-ready Students</td>
<td>8,304</td>
<td>8,710</td>
<td>9,401</td>
<td>9,991</td>
<td>9,042</td>
<td>8,789</td>
<td>9,166</td>
</tr>
<tr>
<td>Attempted 18 hours</td>
<td>4,474</td>
<td>4,206</td>
<td>4,717</td>
<td>4,809</td>
<td>5,119</td>
<td>4,869</td>
<td>5,450</td>
</tr>
<tr>
<td>Percent in study cohort</td>
<td>53.9%</td>
<td>48.3%</td>
<td>50.2%</td>
<td>48.1%</td>
<td>56.6%</td>
<td>55.4%</td>
<td>59.5%</td>
</tr>
<tr>
<td>Developmental Completers</td>
<td>5,768</td>
<td>6,716</td>
<td>7,468</td>
<td>7,036</td>
<td>6,739</td>
<td>7,137</td>
<td>6,743</td>
</tr>
<tr>
<td>Attempted 18 hours</td>
<td>4,759</td>
<td>5,867</td>
<td>6,484</td>
<td>5,820</td>
<td>5,790</td>
<td>6,104</td>
<td>6,014</td>
</tr>
<tr>
<td>Percent in study cohort</td>
<td>82.5%</td>
<td>87.4%</td>
<td>86.2%</td>
<td>82.7%</td>
<td>85.9%</td>
<td>85.5%</td>
<td>89.2%</td>
</tr>
<tr>
<td>Developmental Non-completers</td>
<td>10,055</td>
<td>9,987</td>
<td>10,063</td>
<td>9,296</td>
<td>8,005</td>
<td>9,391</td>
<td>10,856</td>
</tr>
<tr>
<td>Attempted 18 hours</td>
<td>5,288</td>
<td>4,657</td>
<td>4,735</td>
<td>4,621</td>
<td>4,019</td>
<td>4,442</td>
<td>5,513</td>
</tr>
<tr>
<td>Percent in study cohort</td>
<td>52.6%</td>
<td>46.6%</td>
<td>47.1%</td>
<td>49.7%</td>
<td>50.2%</td>
<td>47.3%</td>
<td>50.8%</td>
</tr>
</tbody>
</table>
DEVELOPMENTAL PROGRAM COMPLETION

Two-thirds of students who enter Maryland community colleges need developmental education in at least one basic skill area. Successful completion of these needed developmental courses is a requirement for subsequent enrollment in many of the courses needed to complete a degree. Thus a major hurdle to degree completion is completion of a student’s developmental program. Approximately two-fifths of the students in the study cohorts who needed developmental education completed all of their developmental requirements within the four-year study period (figure 3).

ASSOCIATE’S DEGREE COMPLETION RATES

Three-fifths of Maryland community college students typically report that their primary goal in attending is to earn an associate’s degree; statewide administration of the Community College Survey of Student Engagement in 2010 found 60.3 percent with this goal. However, fewer than one-fifth of the students in the study cohorts had earned an associate’s degree within four years (figure 4). The overall graduation rate is depressed by the developmental non-completers; generally, a fourth or more of the college-ready students and developmental completers had graduated within four years.

Figure 3 Developmental Program Completion Rates, Within Four Years, Maryland Community Colleges

<table>
<thead>
<tr>
<th></th>
<th>Fall 2000</th>
<th>Fall 2001</th>
<th>Fall 2002</th>
<th>Fall 2003</th>
<th>Fall 2004</th>
<th>Fall 2005</th>
<th>Fall 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Needed at least one developmental course at entry</td>
<td>15,823</td>
<td>16,703</td>
<td>17,531</td>
<td>16,332</td>
<td>14,744</td>
<td>16,528</td>
<td>17,599</td>
</tr>
<tr>
<td>Completed all developmental coursework within four years</td>
<td>5,768</td>
<td>6,716</td>
<td>7,468</td>
<td>7,036</td>
<td>6,739</td>
<td>7,137</td>
<td>6,743</td>
</tr>
<tr>
<td>Developmental program completion rate</td>
<td>36.5%</td>
<td>40.2%</td>
<td>42.6%</td>
<td>43.1%</td>
<td>45.7%</td>
<td>43.2%</td>
<td>38.3%</td>
</tr>
</tbody>
</table>

TRANSFER TO BACCALAUREATE INSTITUTIONS

Over half of the students who enroll in credit courses at Maryland community colleges report that their primary goal in attending is to prepare for transfer to a four-year college or university; statewide administration of the Community College Survey of Student Engagement in 2010 found 56 percent with this goal. On average, a third of the students in the study cohorts had transferred to a baccalaureate institution within four years of beginning college at a Maryland community college (figure 5). The rate was higher for college-ready students.

GRADUATION-TRANSFER RATES

Many whose goal is the baccalaureate start at the community college with no intention of earning an associate’s degree. These include spring admits at four-year institutions who attend the community college for only one term, those attending the community college to earn general education credits while undecided on their major, and others taking advantage of the community college’s lower costs before transferring to their four-year school. Thus the most appropriate completion measure for degree-seeking community college students accounts for both associate’s degree achievement and transfer without the associate’s degree. The combined graduation-transfer rate after four years is included in the Performance Accountability Reports submitted to the Maryland Higher Education Commission each year.
Figure 4  **Associate’s Degree Completion Rate, Maryland Community Colleges: Fall First-time Student Cohorts After Four Years**

<table>
<thead>
<tr>
<th></th>
<th>Fall 2000</th>
<th>Fall 2001</th>
<th>Fall 2002</th>
<th>Fall 2003</th>
<th>Fall 2004</th>
<th>Fall 2005</th>
<th>Fall 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total students in study cohort</td>
<td>14,521</td>
<td>14,730</td>
<td>15,937</td>
<td>15,250</td>
<td>14,928</td>
<td>15,415</td>
<td>16,977</td>
</tr>
<tr>
<td>Earned Associate’s degree</td>
<td>2,681</td>
<td>2,499</td>
<td>2,729</td>
<td>2,769</td>
<td>2,960</td>
<td>2,864</td>
<td>3,322</td>
</tr>
<tr>
<td>Associate’s degree completion rate</td>
<td>18.5%</td>
<td>17.0%</td>
<td>17.1%</td>
<td>18.2%</td>
<td>19.8%</td>
<td>18.6%</td>
<td>19.6%</td>
</tr>
<tr>
<td>College-ready students</td>
<td>4,474</td>
<td>4,206</td>
<td>4,717</td>
<td>4,809</td>
<td>5,119</td>
<td>4,869</td>
<td>5,450</td>
</tr>
<tr>
<td>Earned Associate’s degree</td>
<td>1,123</td>
<td>996</td>
<td>1,063</td>
<td>1,229</td>
<td>1,354</td>
<td>1,275</td>
<td>1,508</td>
</tr>
<tr>
<td>Associate’s degree completion rate</td>
<td>25.1%</td>
<td>23.7%</td>
<td>22.5%</td>
<td>25.6%</td>
<td>26.5%</td>
<td>26.2%</td>
<td>27.7%</td>
</tr>
<tr>
<td>Developmental completers</td>
<td>4,759</td>
<td>5,867</td>
<td>6,484</td>
<td>5,820</td>
<td>5,790</td>
<td>6,104</td>
<td>6,014</td>
</tr>
<tr>
<td>Earned Associate’s degree</td>
<td>1,207</td>
<td>1,380</td>
<td>1,541</td>
<td>1,436</td>
<td>1,534</td>
<td>1,506</td>
<td>1,653</td>
</tr>
<tr>
<td>Associate’s degree completion rate</td>
<td>25.4%</td>
<td>23.5%</td>
<td>23.8%</td>
<td>24.7%</td>
<td>26.5%</td>
<td>24.7%</td>
<td>27.5%</td>
</tr>
</tbody>
</table>

Note: Figure 4 shows the percentage earning the associate’s degree at the first institution attended. Students may transfer and complete the associate’s degree at a different institution; such completions are not shown in the above figure. A few students identified as needing developmental education may, through waivers and other means, earn a degree without completing recommended developmental courses. These “developmental non-completers” are not shown in the above figure. Study cohorts exclude students attempting fewer than 18 hours in the first two years after entry.

Figure 5  **Transfer Rate to Baccalaureate Institutions, Maryland Community Colleges: Fall First-time Student Cohorts After Four Years**

<table>
<thead>
<tr>
<th></th>
<th>Fall 2000</th>
<th>Fall 2001</th>
<th>Fall 2002</th>
<th>Fall 2003</th>
<th>Fall 2004</th>
<th>Fall 2005</th>
<th>Fall 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total students in study cohort</td>
<td>14,521</td>
<td>14,730</td>
<td>15,937</td>
<td>15,250</td>
<td>14,928</td>
<td>15,415</td>
<td>16,977</td>
</tr>
<tr>
<td>Transferred to four-year college</td>
<td>4,348</td>
<td>4,789</td>
<td>4,922</td>
<td>4,826</td>
<td>5,015</td>
<td>5,294</td>
<td>6,039</td>
</tr>
<tr>
<td>Four-year college transfer rate</td>
<td>29.9%</td>
<td>32.5%</td>
<td>30.9%</td>
<td>31.6%</td>
<td>33.6%</td>
<td>34.3%</td>
<td>35.6%</td>
</tr>
<tr>
<td>College-ready students</td>
<td>4,474</td>
<td>4,206</td>
<td>4,717</td>
<td>4,809</td>
<td>5,119</td>
<td>4,869</td>
<td>5,450</td>
</tr>
<tr>
<td>Transferred to four-year college</td>
<td>1,733</td>
<td>1,965</td>
<td>2,100</td>
<td>2,143</td>
<td>2,314</td>
<td>2,251</td>
<td>2,611</td>
</tr>
<tr>
<td>Four-year college transfer rate</td>
<td>38.7%</td>
<td>46.7%</td>
<td>44.5%</td>
<td>44.6%</td>
<td>45.2%</td>
<td>46.2%</td>
<td>47.9%</td>
</tr>
<tr>
<td>Developmental completers</td>
<td>4,759</td>
<td>5,867</td>
<td>6,484</td>
<td>5,820</td>
<td>5,790</td>
<td>6,104</td>
<td>6,014</td>
</tr>
<tr>
<td>Transferred to four-year college</td>
<td>1,601</td>
<td>2,116</td>
<td>2,197</td>
<td>2,097</td>
<td>2,204</td>
<td>2,332</td>
<td>2,393</td>
</tr>
<tr>
<td>Four-year college transfer rate</td>
<td>33.6%</td>
<td>36.1%</td>
<td>33.9%</td>
<td>36.0%</td>
<td>38.1%</td>
<td>38.2%</td>
<td>39.8%</td>
</tr>
<tr>
<td>Developmental non-completers</td>
<td>5,288</td>
<td>4,657</td>
<td>4,735</td>
<td>4,621</td>
<td>4,019</td>
<td>4,442</td>
<td>5,513</td>
</tr>
<tr>
<td>Transferred to four-year college</td>
<td>1,014</td>
<td>708</td>
<td>625</td>
<td>586</td>
<td>497</td>
<td>711</td>
<td>1,035</td>
</tr>
<tr>
<td>Four-year college transfer rate</td>
<td>19.2%</td>
<td>15.2%</td>
<td>13.2%</td>
<td>12.7%</td>
<td>12.4%</td>
<td>16.0%</td>
<td>18.8%</td>
</tr>
</tbody>
</table>

Note: Students attempting fewer than 18 hours within two years of entry are excluded from the study cohorts.
Approximately half of the students in each of the study cohorts had graduated and/or transferred within four years of beginning postsecondary education at a Maryland community college. Among college-ready students not needing any developmental coursework, the graduation-transfer rates were typically above 60 percent. For those needing and completing developmental education, the graduation-transfer rates ranged from 52 to 57 percent. Less than a third of those identified as needing developmental coursework but not completing it at their initial community college had graduated or transferred (figure 6).

SUCCESSFUL-PERSISTER RATES

National studies have identified a number of “risk factors” that hinder degree achievement in U.S. colleges and universities. These include attending part time, interrupting study, being employed 30 or more hours per week, having children or dependents, delaying college entry for a year or more after high school graduation, needing remedial coursework, being financially independent, and being an adult learner over age 23 (National Center for Education Statistics 1996b). Many of these characteristics describe a substantial portion of the community college student population, and they may slow progress toward a degree. Thus graduation rates calculated after a relatively short period such as four years may underestimate eventual degree completion and ignore significant educational accomplishments short of a degree. To address these realities, the Maryland Community College Accountability Work Team developed the “successful-persister rate” that recognizes certificate and degree completion, transfer to two- and four-year institutions, completion of 30 credits in good academic standing, and continuing enrollment as successes. The successful-persister rate is included in the state-mandated Performance Accountability Reports.

Approximately seven in 10 students in the study cohorts graduated, transferred, earned 30 credits with a cumulative GPA of 2.0 or above, or were still enrolled four years after

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**Table:** Graduation-Transfer Rates, Maryland Community Colleges: Fall First-time Student Cohorts after Four Years

<table>
<thead>
<tr>
<th></th>
<th>Fall 2000</th>
<th>Fall 2001</th>
<th>Fall 2002</th>
<th>Fall 2003</th>
<th>Fall 2004</th>
<th>Fall 2005</th>
<th>Fall 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>All students in study cohort</td>
<td>14,521</td>
<td>14,730</td>
<td>15,937</td>
<td>15,250</td>
<td>14,928</td>
<td>15,415</td>
<td>16,977</td>
</tr>
<tr>
<td>Graduated and/or transferred</td>
<td>6,689</td>
<td>6,870</td>
<td>7,560</td>
<td>7,303</td>
<td>7,614</td>
<td>7,729</td>
<td>8,722</td>
</tr>
<tr>
<td>Graduation-transfer rate</td>
<td>46.1%</td>
<td>46.6%</td>
<td>47.4%</td>
<td>47.9%</td>
<td>51.0%</td>
<td>50.1%</td>
<td>51.4%</td>
</tr>
<tr>
<td>College-ready students</td>
<td>4,474</td>
<td>4,206</td>
<td>4,717</td>
<td>4,809</td>
<td>5,119</td>
<td>4,869</td>
<td>5,450</td>
</tr>
<tr>
<td>Graduated and/or transferred</td>
<td>2,619</td>
<td>2,575</td>
<td>2,913</td>
<td>2,954</td>
<td>3,275</td>
<td>3,059</td>
<td>3,503</td>
</tr>
<tr>
<td>Graduation-transfer rate</td>
<td>58.5%</td>
<td>61.2%</td>
<td>61.8%</td>
<td>61.4%</td>
<td>64.0%</td>
<td>62.8%</td>
<td>64.3%</td>
</tr>
<tr>
<td>Developmental completers</td>
<td>4,759</td>
<td>5,867</td>
<td>6,484</td>
<td>5,820</td>
<td>5,790</td>
<td>6,104</td>
<td>6,014</td>
</tr>
<tr>
<td>Graduated and/or transferred</td>
<td>2,479</td>
<td>3,072</td>
<td>3,402</td>
<td>3,146</td>
<td>3,311</td>
<td>3,355</td>
<td>3,417</td>
</tr>
<tr>
<td>Graduation-transfer rate</td>
<td>52.1%</td>
<td>52.4%</td>
<td>52.5%</td>
<td>54.1%</td>
<td>57.2%</td>
<td>55.0%</td>
<td>56.8%</td>
</tr>
<tr>
<td>Developmental non-completers</td>
<td>5,288</td>
<td>4,657</td>
<td>4,735</td>
<td>4,621</td>
<td>4,019</td>
<td>4,442</td>
<td>5,513</td>
</tr>
<tr>
<td>Graduated and/or transferred</td>
<td>1,706</td>
<td>1,223</td>
<td>1,245</td>
<td>1,202</td>
<td>1,028</td>
<td>1,315</td>
<td>1,802</td>
</tr>
<tr>
<td>Graduation-transfer rate</td>
<td>32.3%</td>
<td>26.3%</td>
<td>26.3%</td>
<td>26.0%</td>
<td>25.6%</td>
<td>29.6%</td>
<td>32.7%</td>
</tr>
</tbody>
</table>

**Note:** Students attempting fewer than 18 hours within two years of entry are excluded from the study cohorts.
entry (figure 7). The successful-persister rate for students entering college-ready was 10 points higher. For six of the cohorts studied, developmental completers achieved slightly higher rates than college-ready students. For students needing developmental coursework who had not completed it after four years, the successful-persister rate ranged from 44 to 52 percent.

**SUMMARY OF STUDENT DEGREE PROGRESS AFTER FOUR YEARS**

A review of the results from the Maryland Model for seven entering fall cohorts revealed the following about the degree progress of Maryland community college students after four years:

- On average, half of the students enrolling for at least 18 hours during their first two years graduated and/or transferred within four years.
- Seven in 10 graduated, transferred, earned 30 credits in good standing, or were still enrolled at the end of four years.
- Fewer than a fifth of the students earned an associate’s degree within four years at the institution where they began college.
- The achievement rates of developmental completers were similar to or slightly below those of students who entered college-ready.
- Three-fifths of students entering with developmental needs failed to complete their recommended developmental coursework within four years.

**EXTENDING THE ANALYSIS TO SIX YEARS**

The Maryland Model findings used in state-mandated accountability reporting reflect the achievements of students

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**Figure 7 Successful-Persister Rates, Maryland Community Colleges: Fall First-time Student Cohorts after Four Years**

<table>
<thead>
<tr>
<th></th>
<th>Fall 2000</th>
<th>Fall 2001</th>
<th>Fall 2002</th>
<th>Fall 2003</th>
<th>Fall 2004</th>
<th>Fall 2005</th>
<th>Fall 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>All students in study cohort</td>
<td>14,521</td>
<td>14,730</td>
<td>15,937</td>
<td>15,250</td>
<td>14,928</td>
<td>15,415</td>
<td>16,977</td>
</tr>
<tr>
<td>Successful or persisting</td>
<td>10,226</td>
<td>10,390</td>
<td>11,299</td>
<td>10,827</td>
<td>10,847</td>
<td>10,978</td>
<td>12,182</td>
</tr>
<tr>
<td>Successful-persister rate</td>
<td>70.4%</td>
<td>70.5%</td>
<td>70.9%</td>
<td>71.0%</td>
<td>72.7%</td>
<td>71.2%</td>
<td>71.8%</td>
</tr>
<tr>
<td>College-ready students</td>
<td>4,474</td>
<td>4,206</td>
<td>4,717</td>
<td>4,809</td>
<td>5,119</td>
<td>4,869</td>
<td>5,450</td>
</tr>
<tr>
<td>Successful or persisting</td>
<td>3,557</td>
<td>3,395</td>
<td>3,847</td>
<td>4,026</td>
<td>4,226</td>
<td>3,967</td>
<td>4,423</td>
</tr>
<tr>
<td>Successful-persister rate</td>
<td>79.5%</td>
<td>80.7%</td>
<td>81.6%</td>
<td>83.7%</td>
<td>82.6%</td>
<td>81.5%</td>
<td>81.2%</td>
</tr>
<tr>
<td>Developmental completers</td>
<td>4,759</td>
<td>5,867</td>
<td>6,484</td>
<td>5,820</td>
<td>5,790</td>
<td>6,104</td>
<td>6,014</td>
</tr>
<tr>
<td>Successful or persisting</td>
<td>3,895</td>
<td>4,886</td>
<td>5,328</td>
<td>4,768</td>
<td>4,860</td>
<td>4,994</td>
<td>5,061</td>
</tr>
<tr>
<td>Successful-persister rate</td>
<td>81.8%</td>
<td>83.3%</td>
<td>82.2%</td>
<td>81.9%</td>
<td>83.9%</td>
<td>81.8%</td>
<td>84.2%</td>
</tr>
<tr>
<td>Developmental non-completers</td>
<td>5,288</td>
<td>4,657</td>
<td>4,735</td>
<td>4,621</td>
<td>4,019</td>
<td>4,442</td>
<td>5,513</td>
</tr>
<tr>
<td>Successful or persisting</td>
<td>2,739</td>
<td>2,109</td>
<td>2,124</td>
<td>2,113</td>
<td>1,761</td>
<td>2,016</td>
<td>2,698</td>
</tr>
<tr>
<td>Successful-persister rate</td>
<td>51.8%</td>
<td>45.3%</td>
<td>44.8%</td>
<td>45.7%</td>
<td>43.8%</td>
<td>45.4%</td>
<td>48.9%</td>
</tr>
</tbody>
</table>

Note: Students attempting fewer than 18 hours within two years of entry are excluded from the study cohorts. Successful-persisters are students who graduated, transferred, earned 30 credits with a cumulative GPA ≥2.0, or were still enrolled at the end of the study period.
four years after they began their college careers. How do student degree progress findings change when examined six years after entry?

Researchers at Carroll Community College applied the Maryland Model to three fall cohorts and tracked their progress after six years.

The graduation-transfer rates for the fall 2000, fall 2001, and fall 2002 cohorts all increased when the study period was extended to six years. The six-year graduation-transfer rates increased between 5.8 and 9.8 percentage points over the four-year rates (figure 8).

The range of improvement was wider for college-ready students. The additional two years increased the graduation-transfer rate of college-ready students entering in fall 2000 from 65.6 to 79.7 percent—an increase of 14.1 percentage points. The improvement for fall 2002 entrants was comparatively smaller at 3 percentage points.

The additional two years pushed graduation-transfer rates up 9.5, 4.3, and 10.2 percentage points respectively for developmental completer subgroups in the 2000, 2001, and 2002 cohorts. The increases were smaller for developmental non-completers, but remained positive for all three cohorts studied.

Changes in successful-persister rates were much more modest (figure 9). Extending the study period to six years moved the successful-persister rates for the cohorts up 0.9, 3.1, and 1.5 percentage points.

### Figure 8 Graduation-Transfer Rates, Fall First-time Student Cohorts after Four and Six Years: Carroll Community College

<table>
<thead>
<tr>
<th></th>
<th>Fall 2000</th>
<th>Fall 2001</th>
<th>Fall 2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>All students in study cohort</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduated/transferred after 4 years</td>
<td>54.4</td>
<td>60.6</td>
<td>58.1</td>
</tr>
<tr>
<td>Graduated/transferred after 6 years</td>
<td>64.2</td>
<td>66.4</td>
<td>66.8</td>
</tr>
<tr>
<td>College-ready students</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduated/transferred after 4 years</td>
<td>65.6</td>
<td>68.2</td>
<td>69.1</td>
</tr>
<tr>
<td>Graduated/transferred after 6 years</td>
<td>79.7</td>
<td>77.3</td>
<td>72.1</td>
</tr>
<tr>
<td>Developmental completers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduated/transferred after 4 years</td>
<td>61.9</td>
<td>69.9</td>
<td>69.2</td>
</tr>
<tr>
<td>Graduated/transferred after 6 years</td>
<td>71.4</td>
<td>74.2</td>
<td>79.4</td>
</tr>
<tr>
<td>Developmental non-completers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduated/transferred after 4 years</td>
<td>26.0</td>
<td>20.7</td>
<td>21.4</td>
</tr>
<tr>
<td>Graduated/transferred after 6 years</td>
<td>27.7</td>
<td>25.6</td>
<td>27.1</td>
</tr>
</tbody>
</table>

Note: Total cohort size ranged from 430 to 485 students. College-ready subgroups had 64 to 88 students, developmental completers 283 to 310 students, and developmental non-completers 78 to 107 students.

### Figure 9 Successful-Persister Rates, Fall First-time Student Cohorts after Four and Six Years: Carroll Community College

<table>
<thead>
<tr>
<th></th>
<th>Fall 2000</th>
<th>Fall 2001</th>
<th>Fall 2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>All students in study cohort</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Successful persister after 4 years</td>
<td>74.2</td>
<td>73.7</td>
<td>74.8</td>
</tr>
<tr>
<td>Successful persister after 6 years</td>
<td>75.1</td>
<td>76.8</td>
<td>76.3</td>
</tr>
<tr>
<td>College-ready students</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Successful persister after 4 years</td>
<td>85.9</td>
<td>81.8</td>
<td>85.3</td>
</tr>
<tr>
<td>Successful persister after 6 years</td>
<td>90.6</td>
<td>88.6</td>
<td>85.3</td>
</tr>
<tr>
<td>Developmental completers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Successful persister after 4 years</td>
<td>80.0</td>
<td>84.9</td>
<td>89.5</td>
</tr>
<tr>
<td>Successful persister after 6 years</td>
<td>80.9</td>
<td>85.2</td>
<td>89.4</td>
</tr>
<tr>
<td>Developmental non-completers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Successful persister after 4 years</td>
<td>50.0</td>
<td>26.8</td>
<td>28.6</td>
</tr>
<tr>
<td>Successful persister after 6 years</td>
<td>43.4</td>
<td>33.3</td>
<td>32.7</td>
</tr>
</tbody>
</table>

Note: Some developmental non-completers after four years became developmental completers after six years. Thus the composition of the groups for which the rates are calculated differ and therefore group achievement rates can decline, with the fall 2000 developmental non-completers and fall 2002 developmental completers as examples.
SUMMARY OF STUDENT DEGREE PROGRESS AFTER SIX YEARS

A review of the results from the Maryland Model for three entering fall cohorts revealed the following about the degree progress of Carroll’s students after six years:

» On average, approximately two-thirds of the students graduated or transferred within six years of beginning their college careers at Carroll.

» Six-year graduation-transfer rates were 6 to 10 percentage points higher than four-year rates.

» The additional two years had a more modest effect on successful-persister rates.

COMPLETION RATES IN CONTEXT

One reason community college completion rates have been singled out is the presumption that they are notably lower than those at four-year institutions. This has contributed to assertions that students lower their chances of degree attainment by choosing a community college (Long and Kurlaender 2009). However, differences in completion rates among institutions largely reflect differences in student population characteristics (DeAngelo et al. 2011). Community college students who are similar to students at four-year institutions in their academic preparation and ability to consistently attend full time often achieve completion rates comparable to those attained at many four-year institutions. And, students at four-year institutions who are similar in profile to the typical community college student have completion rates similar to those attained at community colleges.

A March 1996 report, Beginning Postsecondary Students: Five Years Later (National Center for Education Statistics 1996a), identified the following “risk factors” affecting bachelor’s degree completion: delaying enrollment in higher education, being a GED recipient, being financially independent, having children, being a single parent, attending part time, and working full time while enrolled. Fifty-four percent of the students who had none of these risk factors earned the bachelor’s degree within five years. The graduation rate for students with just one of these risk factors fell to 42 percent. For students with two risk factors the bachelor’s degree graduation rate was 21 percent, and for those with three or more the graduation rate was 13 percent.

At most community colleges, the majority of students are coping with several of these risk factors. And, these lists of risk factors do not account for the need of most community college students for developmental education. If completion rates are to be compared, it is incumbent upon analysts to account for differences in the academic preparation and life circumstances of student populations. This can be done by sophisticated statistical analysis or by selecting peer groups of institutions with similar admissions policies and student body demographics.

In Maryland, using the Maryland Model and including transfer as community college completion, community colleges have four-year completion rates equal to or higher than the eight-year bachelor’s degree graduation rates at a majority of the state’s four-year institutions with open or low-selectivity admissions (figure 10):

Community college students who are similar to students at four-year institutions often achieve completion rates comparable to those attained at many four-year institutions.
Using the Maryland Model definition, the completion rate of college-ready community college students—those not needing developmental education—is comparable to those of some selective four-year institutions (figure 11):

At Carroll Community College, 88 percent of the students in the honors program have graduated with an associate’s degree in two years. These are students with high school records and admissions test scores that would meet the admissions criteria of many selective four-year institutions. The graduation rate of these community college students is comparable to those of Maryland’s most selective institutions.

**LIMITATIONS OF THE MARYLAND MODEL**

The largest study of college student attendance and mobility—tracking 2.8 million students—found that one-third of all students transferred at least once within five years of starting college, with the most prevalent transfer destination being public two-year institutions. Half of the students transferring from four-year institutions completed “reverse transfers” to community colleges (National Student Clearinghouse Research Center 2012b). A follow-up report found that 55 percent of reverse transfers had not returned to any four-year institution within the study period (National Student Clearinghouse Research Center 2012a). A weakness of the Maryland Model, and of most longitudinal studies of student retention and completion, is that these transfers-in are excluded from analysis. Studies limited

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**Figure 10** Completion Rates, Maryland Colleges and Universities: Less-Selective Institutions

<table>
<thead>
<tr>
<th>Institution</th>
<th>Completion Rate at 200% “Normal”</th>
</tr>
</thead>
<tbody>
<tr>
<td>College of Notre Dame of Maryland</td>
<td>63%</td>
</tr>
<tr>
<td>Maryland community colleges</td>
<td>51%</td>
</tr>
<tr>
<td>Frostburg State University</td>
<td>49%</td>
</tr>
<tr>
<td>Bowie State University</td>
<td>46%</td>
</tr>
<tr>
<td>Capitol College</td>
<td>42%</td>
</tr>
<tr>
<td>University of Maryland Eastern Shore</td>
<td>40%</td>
</tr>
<tr>
<td>Morgan State University</td>
<td>38%</td>
</tr>
<tr>
<td>Sojourner-Douglass College</td>
<td>26%</td>
</tr>
<tr>
<td>Coppin State University</td>
<td>20%</td>
</tr>
</tbody>
</table>

Source: IPEDS data extracted from College Navigator 9-20-2011. Community college completion rate includes transfers to four-year institutions.

**Figure 11** Completion Rates, Maryland Colleges and Universities: Selective Institutions

<table>
<thead>
<tr>
<th>Institution</th>
<th>Completion Rate at 200% “Normal”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Johns Hopkins University</td>
<td>90%</td>
</tr>
<tr>
<td>Loyola University Maryland</td>
<td>86%</td>
</tr>
<tr>
<td>University of Maryland College Park</td>
<td>83%</td>
</tr>
<tr>
<td>Maryland Institute College of Art</td>
<td>74%</td>
</tr>
<tr>
<td>McDaniel College</td>
<td>73%</td>
</tr>
<tr>
<td>St. John’s College</td>
<td>73%</td>
</tr>
<tr>
<td>Salisbury University</td>
<td>71%</td>
</tr>
<tr>
<td>Towson University</td>
<td>68%</td>
</tr>
<tr>
<td>Hood College</td>
<td>65%</td>
</tr>
<tr>
<td>Goucher College</td>
<td>64%</td>
</tr>
<tr>
<td>“College-ready” Maryland community college students</td>
<td>64%</td>
</tr>
<tr>
<td>Mount Saint Mary’s University</td>
<td>63%</td>
</tr>
<tr>
<td>University of Maryland Baltimore County</td>
<td>63%</td>
</tr>
</tbody>
</table>

Source: IPEDS data extracted from College Navigator 9-20-2011. Community college completion rate includes transfers to four-year institutions.
to tracking the progress of first-time, any-college student entrants miss the complexity of student enrollment behavior and the contributions multiple institutions often make to individual student educational journeys.

As currently implemented, the Maryland Model identifies a study cohort of students beginning their postsecondary education in a fall semester. Students who start college in the spring semester or during a winter intersession are not included. Given the rolling admissions policy of most community colleges and the increasing enrollment of adult learners, it is clear that fall is not the only time students enter higher education. And, the characteristics of these non-fall starters may differ from those of the typical fall entrant, raising the possibility that findings for the fall cohorts may not be applicable to all students.

The behavioral definition of degree-seeking adopted by the Maryland Model excludes two-fifths of fall first-time students from the analysis. While proponents of the model argue that this properly focuses the accountability measures on students who have demonstrated a commitment to degree pursuit, this restrictive definition must be kept in mind in broader discussions of the enrollment pathways of community college students.

The Maryland Model, as implemented in state-mandated accountability reporting, reports student progress at the end of four years. Completion rates calculated at the end of four years undercount true completion. It is not uncommon for a third of associate degree completers to take more than four years to complete their degree. At Carroll Community College, fully five percent of associate degree recipients take 10 or more years to complete their “two-year” degree. These students are not failures. Ideally, students would complete their degrees more quickly. But when life circumstances dictate a slower pace, colleges should support and applaud students for their remarkable persistence. And, in accountability reporting it should be recognized that completion rate statistics are time bound and fail to account for all who will eventually succeed in their degree pursuit.

While a few individual community colleges around the country have adopted the Maryland Model, another weakness of the model is a lack of a broader sample of institutions using its methodology. As a result, benchmarking and peer comparisons are limited to institutions within Maryland.

**STRENGTHS OF THE MARYLAND MODEL**

Strengths of the Maryland Model identified by its proponents include its behavioral definition of degree-seeking, inclusion of part-time students, inclusion of interim measures of success such as completion of 30 credits or continuing enrollment, tracking of transfers across state lines, and reporting of a combined graduation-transfer rate. These decisions addressed many of the flaws identified by the work team when it reviewed existing completion metrics in the development of the Maryland Model.

The Maryland Model has been successfully implemented and used by all 16 Maryland community colleges for measuring the outcomes of every entering fall cohort since 2000. The model was accepted by the Maryland Higher Education Commission for mandated state reporting and has been used in state budget documents prepared by analysts in the Maryland Department of Legislative Services. The state's community colleges have partly defined their collective “completion agenda” goal in Maryland Model terms: to raise the statewide graduation-transfer rate to 60 percent by 2020 (Maryland Community College Vice Presidents and Deans of Student Services and Maryland Council of Community College Chief Academic Officers 2010).

A key strength of the Maryland Model is its incorporation of developmental status into its analytical framework and reporting. This decision has provided Maryland community college representatives with several findings useful for
enrollment management and advocacy. By reporting degree progress for college-ready students separately, the Maryland Model suggested that completion rates for similar student populations did not differ notably between community colleges and many four-year institutions. By separately reporting progress for students who needed and completed developmental education, the model suggested that persistence through the developmental sequence prepared most students for success as traditionally measured by graduation and transfer. By separately tracking students who failed to complete their recommended developmental coursework, the model focused attention on developmental education as an area for possible reform.

FOCUS ON DEVELOPMENTAL EDUCATION

Programs to prepare entering students for college-level classes are essential at open-admissions institutions, including most community colleges. These programs are variously labeled remedial, transitional, or developmental. The perceived failures of these programs have led them to be characterized as “a rickety rope bridge you might find in an Indiana Jones film, treacherous and terrifying” (Vandal 2010, p. 5), “a burial ground for student aspirations” (American Association of Community Colleges 2012, p. 10), and “a bridge to nowhere” whose very structure is “engineered for failure” (Complete College America 2012, p. 2).

The hurdle to degree completion imposed by the need to complete developmental education has spurred national, state, and institutional research on the placement tests used to refer students into developmental education, student progress through the developmental coursework, and the relationship of developmental education to success in college-level courses. Data from the Maryland Model have prompted community colleges in the state to review the national literature as well as examine their own developmental education practices.

Maryland community colleges use placement tests to determine if entering students need developmental education. Two-thirds of the 26,765 first-time students entering Maryland community colleges in fall 2006 placed into developmental education. Several colleges have partnered with their local school systems in an effort to reduce this proportion. For example, Howard Community College administers the placement test Accuplacer® to 11th-grade students in the county’s high schools, and college faculty then advise the students regarding course selection for their senior year.

A number of the colleges have examined the relationship between developmental placement and subsequent course performance, an area of growing national research interest. Faculty and institutional researchers at Carroll Community College, Chesapeake College, and Community College of Baltimore County have collaborated on studies resulting in changes in course content and delivery (Maryland Community College Research Group 2011). Studies with larger samples from other states, such as described in Scott-Clayton (2012), found that placement tests are better predictors of success in math than in English and more predictive of who is likely to do well in college-level courses than who is likely to fail, but that overall the correlation between placement test scores and later course outcomes is relatively weak.

Data from the Achieving the Dream initiative found that fewer than half of the students referred to developmental education completed the sequence to which they were referred, with more students exiting their developmental sequence because they did not enroll in either the first or a subsequent course rather than because they failed or withdrew (Bailey, Jeong, and Cho 2009). A study of Virginia community college students also found that many students did not complete recommended developmental coursework because they never enrolled in the recommended courses (Roska et al. 2009). Similar findings in Maryland have prompted colleges to implement policies encouraging
students to begin their developmental courses in their first semester of enrollment. At Carroll Community College, students failing to start their developmental sequences by the time they have completed 24 credits are blocked from further registration.

Studies have found that students are more likely to progress through developmental education and complete college-level courses in math and writing if they enroll full time during their first year, begin their remedial sequence during their first year, pass their initial developmental course on their first attempt, enroll continuously in their developmental sequence without interruption, and have fewer levels of remediation to master (Perry et al. 2010). The study in Virginia similarly found that students starting in lower levels of developmental education were much less likely to reach enrollment in gateway/college-level courses; however, among students who did take gateway courses, the pass rates were not markedly different for those who previously took developmental courses and those who did not (Roska et al. 2009). These findings are consistent with the Maryland experience (Maryland Community College Research Group 2011).

Early entrance into a program of study has been found to be associated with increased completion. In one study of an anonymous sample of 20,220 students from 23 community colleges starting college in 2005–06, those entering a program of study in their first year were much more likely to graduate or transfer than students who did not enter a program until their second year or later. Failing to complete developmental coursework or pass gateway courses prevented many from entering a program (Jenkins and Cho 2012). A study of students enrolled in community colleges in Washington state over a seven-year period found that a majority did not get far enough to enter a program concentration. Students from low socioeconomic backgrounds were least likely to enter a program (Jenkins and Weiss 2011). Implications for practice included offering students more structured or fewer program choices, highlighting clear pathways into programs and careers, and integrating developmental education sequences with curriculum and career guidance.

A survey in spring 2011 found that nine Maryland community colleges were actively involved in redesigning their developmental education programs and practices (Maryland Council of Community College Chief Academic Officers 2011). The reforms underway in Maryland reflect many of the themes highlighted in the national research literature and were prompted in part by the consistent findings from the Maryland Model demonstrating the impediment to degree progress posed by existing developmental education practices.

Reforms underway in Maryland were prompted in part by the consistent findings from the Maryland Model demonstrating the impediment to degree progress posed by existing developmental education practices.

Partially funded by a Lumina Foundation grant, Allegany College of Maryland created a dedicated mathematics computer lab staffed by a new developmental math coordinator. Anne Arundel Community College redesigned its developmental math delivery system, incorporating technology-facilitated instruction and based on principles and funding support from the National Center for Academic Transformation. Frederick Community College changed its developmental math sequence from three levels of three-credit courses to two levels of four-credit courses and added learning technologies to support faster, individualized progress. Closer integration of these developmental sequences with gateway courses and student majors was also an element of the reform efforts. Garrett College redesigned its developmental programs with the goal of having 80 percent of its underprepared students complete their developmental requirements within one semester. Montgomery College revamped its developmental math sequence to accelerate student progress using self-paced laboratory work concentrated on gaps in student learning.
Beginning in fall 2008, Harford Community College integrated MyMathLab® software into its developmental mathematics program. As expected, there was a strong positive correlation between grades on the computerized lab assignments and successful course completion. However, there was no significant difference in course success between students using the technology-assisted curriculum and those using a traditional class format (Henderson and Jones 2011).

Baltimore City Community College (BCCC) combined its Adult Basic Education program with its developmental education program to support the preparation of lower-performing students and their progress into degree-credit coursework. Beginning in fall 2011, BCCC faculty introduced self-paced modules into Elementary Algebra and Intermediate Algebra (Ennels 2011).

Faculty at the Community College of Baltimore County have implemented an Accelerated Learning Program (ALP) in which students testing into upper-level developmental writing are mainstreamed into English 101 and simultaneously enrolled in a companion ALP course taught by the same instructor. Participants have achieved substantially better outcomes in English 101 and English 102, and at a lower cost per successful student, than they did in the traditional developmental English course sequence (Jenkins et al. 2010). Cecil College also revised its developmental English course content and sequencing.

The College of Southern Maryland implemented a “Fast Track” program in both developmental English and mathematics with targeted tutoring designed to assist students in placing out of developmental coursework or completing it in an accelerated format. Howard Community College established a “Step Up” program in which faculty trained in life-coaching techniques meet weekly throughout the semester with developmental students to provide guidance and encouragement.

**FURTHER EVOLUTION OF THE MARYLAND MODEL**

Building on the strengths of the model, researchers in Maryland are contemplating extension of the study period and inclusion of additional cohorts such as spring entrants and transfers-in. All 16 colleges anticipate continuing their analysis of the efficacy of developmental education reforms.

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**AUTHOR BIOGRAPHY**

**CRAIG A. CLAGETT** is vice president for planning, marketing, and assessment at Carroll Community College in Westminster, Maryland. He chaired two statewide committees to revise Maryland’s community college performance accountability standards. He earned his Ph.D. in government and politics at the University of Maryland, College Park.
Expanding College Completion
The Challenge of Capacity
by Janice N. Friedel, Mark M. D’Amico, Stephen G. Katsinas, and Phillip D. Grant

It is important to ensure that our nation’s open-access colleges can operate at a level where they can provide seats at the higher education table for all who wish to attend.

AUTHORS’ NOTE: An earlier version of this manuscript was produced in December 2011 as a University of Alabama Education Policy Center report Challenging Success: Can College Degree Completion Be Increased as States Cut Budgets? It is available at www.uaedpolicy.ua.edu/uploads/2/1/3/2/21326282/can_college_completion.pdf.

ACROSS THE COUNTRY, much attention continues to focus on educational attainment. Specifically, Americans are growing concerned about no longer being first in the proportion of citizens with a postsecondary degree. In 2000, the United States was the world leader in college completion, i.e., the proportion of a country’s adult population age 25–34 with college degrees. But this is no longer the case as the United States’ global ranking for college completion dropped to 10th in 2009 (Organisation for Economic Co-operation and Development 2010) and further declined to 16th in 2011 (Organisation for Economic Co-operation and Development 2011).

The Lumina Foundation recently released a special report, A Stronger Nation, laying out how the United States can once again be number one in educational attainment. The foundation theorizes that each state must bring up attainment to 60 percent by 2025 (Lumina Foundation 2012). Community colleges clearly must play a significant role in order to achieve this goal. However, following the recent severe recession and in an era of deep and lasting budget cuts, many of the nation’s two-year colleges have struggled to meet enrollment demands (Katsinas, D’Amico, and Friedel 2011a).

The community college is a portal of entry into U.S. higher education for millions of academically-talented minority and low-income students. These colleges serve more traditional-age first-generation students than do other sectors; they also serve large numbers of adult students. In addition, the current economic environment has focused attention on the workforce development mission of community colleges and their capacity to expand our skilled labor force.

Writing in 1994, the late Clark Kerr predicted “Tidal Wave II,” which he characterized as the wave of grandchildren of World War II GIs who would hit traditional college-going years starting in 1996 (Kerr 1994). This indeed did occur: in 1996, there were 19.3 million 18- to 24-year-olds in the American population; this figure jumped to 23.7 million in 2009 and jumped again to 24.6 million in 2012. Thus, between 2009 and 2012, there were one million more Americans of traditional college-going age—and this demographic reality occurred whether or not our nation and states were in recession and whether or not our institutions were funded to serve it (DeMonBrun, Hardy, and Katsinas 2009). This stress was previously documented in our past annual surveys of National Council of State Directors of Community College (NCSDCC) members. In 2009, we found that 12 states reported capped enrollments at their public flagship...
universities, including four of the five largest, and that seven states reported capped enrollments at their public regional universities, including three of the five largest (Katsinas and Tollefson 2009). Capped enrollments at elite private and public flagship universities have caused a capacity problem at community colleges. As a result, the expansion of community colleges will be necessary in order to increase graduation rates. These and related issues are particularly relevant to the members of the NCSDCC, who frequently address issues of policy and practice related to access, success, and funding in the nation's two-year colleges. The University of Alabama's Education Policy Center documents these state-level community college perspectives annually through the Access and Funding in Public Higher Education report series (Katsinas, D'Amico, and Friedel 2011a). Specifically, this article discusses college degree completion issues from the perspective of those responsible for the coordination, supervision, and management of community colleges. It also includes an analysis that builds upon survey data presented in our 2011 issue brief Challenging Success: Can College Degree Completion Be Increased as States Cut Budgets? (Katsinas, D'Amico, and Friedel 2011b).

THE RECENT BARRIERS TO AND FACILITATORS OF SUCCESS IN THE COMMUNITY COLLEGE SECTOR

Our previous reports described many of the barriers that community colleges face when working to meet education and workforce needs. For example, students and families are squeezed by increasing tuition costs, which are predicted to rise by twice the inflation rate. At the same time, the majority of states predict flat funding to or cuts in state student aid programs. Most states report cuts in operating budgets for all public higher education sectors, and increasingly in recent years the cuts have been made on an across-the-board basis. High unemployment has exhausted available Workforce Investment Act (WIA) and other workforce training funds in many states, thus constricting the ability of community colleges to serve workers in need of retraining. Our findings also showed that to prepare workers for good jobs, funds are needed to expand high-demand community college programs tied to high-wage jobs in allied health, engineering, and information technology. This cannot happen if states reduce operating budgets for their community colleges and regional and flagship universities. The reports further revealed that access threats are acute in large states and states with fast-growing minority populations. Finally, facilities construction and renovation has consistently been found to be a major need in 48 states (Katsinas, D'Amico, and Friedel 2011a, 2012).

We believe it significant that, unlike in the era of post-World War II GIs who lived in Quonset huts constructed via the Surplus Property Act of 1944 or the “Baby Boomers” of 1965–1973 who were served by buildings constructed through the Higher Education Facilities Act of 1963, in the current Tidal Wave II era there have been no major federal investments in facilities infrastructure (Harris, Manns, and Katsinas 2012). Capacity is therefore an issue of prime importance.

While the barriers are many, recent national efforts have sought to facilitate student success throughout higher education while simultaneously addressing capacity challenges. President Obama's 2009 American Graduation Initiative sought to bolster the workforce by producing millions more community college graduates over the next decade (Brandon 2009). The funding for this initiative was significant, although it was reduced from the proposed $10 billion to $2 billion. The White House continues to stress the need to produce a workforce that is able to compete globally. According to Carnevale, Smith, and Strohl (2010), by 2018 nearly two-thirds of all jobs will require at least some college, and there will be a shortage of three million workers with associate's degrees or higher. Additionally, the United States will be seven million degrees short by 2030 (National Governors Association 2010a). Secretary of Education Duncan stated that “community colleges must lead the way to meeting President Obama’s goal that the United States [will once again have] the highest college attainment rate in the
world by 2020. . . . All of higher education must contribute to reaching this goal—but community colleges will be the linchpin” (U.S. Department of Education 2011, ¶ 2).

More recently, President Obama’s 2012 State of the Union Address called for a national commitment to creating an economy built to last by training two million workers with skills leading directly to a job. On February 13, 2012, at Northern Virginia Community College in Annandale, Virginia, Obama announced the $8 billion Community College to Career Fund administered by the Departments of Labor and Education. The president also set a national college completion agenda: 2020 goals include an additional 10 million graduates from community colleges and four-year colleges and universities and every American completing one year or more of higher education or advanced training in his/her lifetime. The intent of these goals is to produce the “best educated, most competitive workforce in the world” (Kanter 2012, p. 2).

Consistent with the president’s call, in 2011 the American Association of Community Colleges (AACC) launched its 21st-Century Initiative with the overall goal “to educate an additional 5 million students with degrees, certificates, or other credentials by 2020” (American Association of Community Colleges 2012, p. v). This initiative responded to what has long been recognized by community college leadership: the “open door” policy does not ensure success. Hagedorn (2012) reports that fewer than 24 percent of first-time, full-time community college students in degree programs attain a postsecondary credential from their starting institution after three years.

There have been a number of significant initiatives undertaken to identify, pilot, and scale up promising practices designed to enhance the success and completion rates of community college students. These include but are not limited to Achieving the Dream, Complete College America, Complete to Compete, Completion by Design, and the Voluntary Framework for Accountability. Achieving the Dream (ATD) was conceived in 2004 by the Lumina Foundation and seven founding partner organizations. Today, ATD involves approximately 200 mostly urban and suburban community colleges in 32 states and the District of Columbia. Its goal is success for more community college students, especially low-income students and students of color. The ATD approach to closing achievement gaps and accelerating student success is centered on four primary strategies: (1) guiding evidence-based institutional change, including coaching and technical assistance, (2) influencing public policy, (3) generating knowledge, and (4) engaging the public (Achieving the Dream 2012). ATD acknowledges that change is a complicated process requiring leadership from the top and engagement across all aspects of the organization; specifically, change must be data driven and requires college-wide goal setting, the development and piloting of interventions, and the scaling up of promising practices.

The Complete College America (CCA) Alliance of States is an initiative funded by the Bill & Melinda Gates Foundation and other partner foundations. Its goal is to “significantly increase the number of Americans with quality career certificates or college degrees and to close the attainment gaps for traditionally underrepresented populations” (Complete College America 2011a, ¶ 1). Thus, college completion is a major goal. As part of this initiative, alliance members receive expert advice, share model programs and policies, network and support each other, and help inform policy makers and the public about the completion agenda and strategies to increase college completion rates. Participating CCA states agree to set state and local completion goals, implement policy changes to meet those goals, create action plans, and generate information on the CCA metrics (Complete College America 2011b).

In September 2010, the National Governors Association announced the Complete to Compete National Advisory Group representative of the higher education and business communities to “develop consistent performance metrics that gauge institutions’ success in helping students move
toward degrees and certificates and develop policies that provide stronger incentives for improving completion and institutional efficiency” (National Governors Association 2010b, ¶ 3). The metrics include both outcomes and progress measures. The outcomes metrics include “degrees and certificates awarded; graduation rates; transfer rates; and time and credits to degree” (Reyna 2010, p. 5). Progress metrics include “enrollment in remedial education; success beyond remedial education; success in first-year college courses; credit accumulation; retention rates; and course completion” (Reyna 2010 p. 5). Complete to Compete recommendations include “clarify definitions for the completion metrics; collect college completion data; disaggregate completion metrics; [and] report data annually on all completion metrics” (Reyna 2010, p. 12).

With the support of $35 million in grants made over five years from the Bill & Melinda Gates Foundation, Completion by Design aims to increase the number of low-income adults under the age of 26 who earn a degree with labor market value by preventing loss and creating momentum. The initiative consists of three phases. Phase One, launched in June 2011, was a one-year planning period in which the colleges involved examined their own data to identify when and why they are losing students and then designed strategies to keep students enrolled and progressing toward completion. Phase Two is a two- to three-year period in which the colleges implement the new strategies. During Phase Three the colleges will address the policy implications of their work, especially at the state level, while scaling up the project for replication and national impact. Areas of focus include the high school to college transition—in particular, assessing developmental education, improving data systems, and strengthening financial aid policies (Completion by Design 2011).

In December 2011, the AACC released its Voluntary Framework for Accountability (VFA), “the first national system of accountability specifically for community colleges and by community colleges” (American Association of Community Colleges 2013a, ¶ 1). AACC partner organizations include the Association of Community College Trustees and The College Board; again, the effort was funded by the Lumina Foundation and the Bill & Melinda Gates Foundation. The project consists of the development, pilot testing, and dissemination of a common set of performance measures to enable institutions to identify problems and set goals for the improvement of outcomes. These include “measures appropriate to community college missions and the students served; usable and consistent definitions to enable benchmarking and collaboration; [and] measures by which community colleges should be held accountable and therefore can be used to influence policy conversations with stakeholders (American Association of Community Colleges 2013b, ¶ 3). While the initiative has been received positively, it is also important to note that some community college leaders have expressed concerns regarding the data burden associated with the VFA metrics (Fain 2011).

All of the above initiatives emphasize the importance of clearly defined metrics, the use of these metrics for institutional improvement and policy formation, and the reporting of performance on these metrics. All stress the need for the development of data systems. Additionally, the AACC’s 21st-Century Community Colleges report Reclaiming the American Dream, issued in April 2012 with the support of the Bill & Melinda Gates Foundation, the Lumina Foundation, the Kresge Foundation, and ACT and Education Testing Services, concludes that strategic leadership is critical and that “collaboration at entirely new levels, among internal and external entities, will be essential. And the need for systems of support—including professional development, technology, and a new culture of evidence—is inescapable” (American Association of Community Colleges 2012, p. ix). The challenges of significantly increasing the number of community college completers are many while the human and fiscal resources that might be necessary are incalculable. It is our opinion that the absence of considerations and recommendations regarding the curricular changes—as well as the new and expanded student support services—that
might be necessary to increase completion is significant. The shift from an emphasis on access to completion requires transformational change. Yet the resources needed are indeterminable.

**THE IMPORTANCE OF PLANNING FOR STUDENT SUCCESS**

In the late 1950s and early 1960s, state coordination of public higher education was strongly recommended as good public policy by higher education experts such as A. J. P. Brumbach (Katsinas, Hardy, and DeMonBrun 2009). A major perceived benefit of this approach to state policy makers was the more effective use of scarce public resources through the development and execution of effective long-term plans. This was needed to provide higher education access to the large numbers of children of World War II GIs, the “baby boomers,” who were approaching the traditional college-going ages of 18- to 24-years-old between 1965 and 1973. The planning process began by developing statewide goals and objectives for higher education, such as providing geographic and programmatic access to all citizens of the state, and then developing long-range plans to finance the operating and capital budgets needed to achieve those goals. We argue here that the need for this kind of planning is accentuated by long-term increases in enrollment and increased emphasis on student success, even as state support declines.

Now, nearly 50 years later, our nation is in the midst of another boom of students approaching college. Between 2009 and 2012, an additional one million Americans reached the traditional college-going ages of 18- to 24-years-old. To this number are added three million more young adults ages 25 to 34 (Katsinas, D’Amico, and Friedel 2011b). Much of this growth has been in minority populations. For example, in Illinois in 1980 African Americans and Hispanics comprised 13.8 and 5.6 percent respectively of the total population. By 2010, Illinois had grown by 1.4 million people; of this much larger total, Hispanics and African Americans comprised 16 and 15 percent respectively (Katsinas, forthcoming). The national discussion on college completion and the related initiatives cause us to consider the important interplay between available resources, long-term plans, and community college systems’ perceived ability to achieve worthy student success goals. It is important to ensure that our nation’s open-access colleges can operate at a level where they can provide seats at the higher education table for all who wish to attend.

**METHOD**

The primary purpose of the study presented in this article was to explore the perceptions of state community college system leaders regarding the interplay between issues of funding, planning, barriers to access, and the potential enhancement of student success/college completion. The article presents selected findings from the 2011 Survey of Access and Finance administered to the National Council of State Directors of Community Colleges (NCSDCC) from July 5 to August 24, 2011. The survey was crafted with input from an advisory panel of leading community college scholars, and the study received support from the American Public University System.

Responses were received from all 51 NCSDCC members or their designees, representing every state. Puerto Rico, also an NCSDCC member, was not surveyed. Responses from Arizona, Maryland, Nebraska, New Jersey, New Mexico, and Pennsylvania came from their state community college associations. Georgia’s responses come from both the University System of Georgia (GA-USG), which coordinates community colleges, and the Technical College System of Georgia (GA-TCSG), which coordinates technical colleges across the Peach State. New York’s response was from the State University of New York system, not the City University of New York.

While the NCSDCC is one of more than 30 affiliated councils of the American Association of Community Colleges, this
study was written independently of both organizations; neither the NCSDCC nor the AACC formally endorsed this research. Finally, it is important to note that NCSDCC members could choose to not answer items so that responses do not always add to 51.

RESULTS

In line with the imperative to achieve higher rates of college completion and other measures of student success, the findings show that there is a desire to improve performance in the majority of states; however, there are also barriers to doing so. Figure 1 shows that only four of 51 respondents indicated that their state had a long-term plan to finance the operating budgets necessary to increase degree production. An important related long-term capacity issue involves the adequacy of the physical infrastructure. In a previous report (Katsinas, D’Amico, and Friedel 2011a), 48 respondents noted that facilities funding was a major need. Similarly, only three current respondents agreed that long-term plans exist to finance the capital budgets needed to increase the completion of degrees and certificates. In contrast, 40 disagreed. Taken together, the lack of long-term plans for operating and capital budgets means that public-access colleges may not have the funding they need to provide postsecondary opportunities. We realize that the lack of plans is not in any way an indictment of state community college systems, but rather a condition of the lean economic times. In fact, the authors realize that most state higher education entities may not even have control over such plans.

The lack of long-term plans for operating and capital budgets means that public-access colleges may not have the funding they need to provide postsecondary opportunities.

Even in the absence of long-term plans, the majority of states (34) have either implemented or considered policies to incentivize the attainment of degrees and credentials (figure 1); however, only four indicate that funding and incentive systems are in place to increase transfer toward a baccalaureate. Based on the combination of these conditions related to planning and funded incentives, it is not surprising that nearly half the respondents (24) indicated

<table>
<thead>
<tr>
<th>In my state . . .</th>
<th>A long-term plan exists to finance the operating budgets needed to increase the number of adults with college degrees and certificates.</th>
<th>A long-term plan exists to finance the capital budgets needed to increase the number of adults with college degrees and certificates.</th>
<th>The funding and incentive systems adequately reward community college efforts to increase transfer toward the baccalaureate degree.</th>
<th>Policies to incentivize improved performance (e.g., funding models based on credits and/or degrees completed) are under consideration/have been implemented.</th>
<th>In light of state funding cuts, achieving increases in graduation rates will be difficult.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>Agree</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>24</td>
<td>18</td>
</tr>
<tr>
<td>Neutral/Don’t Know</td>
<td>11</td>
<td>8</td>
<td>8</td>
<td>5</td>
<td>16</td>
</tr>
<tr>
<td>Disagree</td>
<td>28</td>
<td>31</td>
<td>26</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>8</td>
<td>9</td>
<td>13</td>
<td>4</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: Katsinas, D’Amico, and Friedel 2011a.
that in light of state budget cuts, increasing graduation rates would be difficult. The authors do not believe this finding in any way demonstrates a lack of interest in improving completion and success. Rather, this shows that state systems are feeling the unprecedented pressures of budget cuts and other capacity issues. This is illustrated by some of the additional findings.

Capacity issues in public-access sectors are real and have led to the potential limiting of access to postsecondary opportunities. When asked to respond to the item “Community colleges have limited the number of class sections resulting in a de facto enrollment cap at all or some institutions in my state,” 16 were in agreement, 10 were neutral or did not know, and 25 were in disagreement (figure 2). These 16 included many of our fastest-growing states.

When asked to respond to the item “To significantly increase the numbers of successful community college transfers who obtain baccalaureate degrees requires expanding my state’s public universities,” 12 were in agreement, 6 were neutral or did not know, and 33 were in disagreement. Thus, nearly two of three respondents disagreed that their public universities needed to expand to increase transfer opportunities for community college students. But the respondents from the 12 states in agreement included those from four of the nation’s five largest: California, Florida, Illinois, and New York.

The next two columns of figure 2 asked respondents if, due to an inability to meet the demands of growing transfer numbers, some or all of their public flagship and regional universities have raised admissions standards to limit transfer. Just six respondents were in agreement and 36 were in disagreement that public flagships had raised admissions standards to limit transfer. And, just seven respondents were in agreement and 33 were in disagreement that public regional universities had raised admissions standards to limit transfer. These results were tempered by the fact that respondents from three of the nation’s five largest states—California, Florida, and New York—agreed with both. How large states are coping with capacity pressures is discussed below.

Figure 3 focuses on the 24 states that indicated capacity strains in response to one of the four items presented in figure 2. The four columns to the right show the changes in total population and Hispanic population between the 2000 and 2010 census, both numerically and on a percentage basis. Among the 16 states whose respondents

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### Figure 2 Capacity Concerns Lead Public Institutions to Ration Opportunities

<table>
<thead>
<tr>
<th>Community colleges have limited the number of class sections resulting in a de facto enrollment cap at all or some institutions in my state.</th>
<th>To significantly increase numbers of successful community college transfers who obtain baccalaureate degrees requires expanding my state’s public universities.</th>
<th>Due to inability to meet the demand of growing transfer numbers, some or all of my state’s . . .</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strongly Agree</strong></td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td><strong>Agree</strong></td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td><strong>Neutral/Don’t Know</strong></td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td><strong>Disagree</strong></td>
<td>17</td>
<td>25</td>
</tr>
<tr>
<td><strong>Strongly Disagree</strong></td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>. . . public flagship universities have raised admissions standards to limit transfer.</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>. . . public regional universities have raised admissions standards to limit transfer.</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>. . . public flagship universities have raised admissions standards to limit transfer.</td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td>. . . public regional universities have raised admissions standards to limit transfer.</td>
<td>27</td>
<td>25</td>
</tr>
</tbody>
</table>

Source: Katsinas, D’Amico, and Friedel 2011a.
were in agreement with the item “Community colleges have limited the number of class sections resulting in a de facto enrollment cap at all or some institutions in my state,” eight saw population increases of under 10 percent between 2000 and 2010 while three—Arizona, Nevada, and Utah—saw increases above 20 percent in just 10 years. The two right-hand columns show the significant increase in the Hispanic population, both numerically and as a percentage of total population growth. In 15 states, the increase in the Hispanic population was in excess of 50 percent. Significantly, even in states with smaller percentage population increases, the percentage increase of Hispanics was at least in the double digits.

The second column of figure 3 lists the 12 respondents who indicated that their public universities would need to expand to significantly increase the numbers of community college transfers obtaining baccalaureate degrees. Among these 12 states, the population change between 2000 and 2010 ranges widely, with Utah having the highest percentage change at 23.8 percent.

It is important to note that in our nation’s largest states, small percentage increases in population can mask large increases in numbers. For example, New York’s 2.1 percentage increase in population between 2000 and 2010 translates into an additional 400,000 people. The Empire State’s Hispanic population increased by 549,339, or 19.2 percent, during the period of 2000–2010. This pattern of Hispanics constituting a substantial percentage increase, if not a clear majority, of population growth was repeated in nearly all 24 states that indicated capacity strains. As previously noted, respondents were asked if, due to an inability to meet growing transfer numbers from community colleges, admissions standards to limit transfer had been raised at some or all of their public flagship and public regional universities. In each state reporting raised admissions standards to limit transfer to public universities, the Hispanic population grew substantially. While these may appear to be issues of access only, the goals outlined by the initiatives discussed previously depend on all populations not only attending but also completing a credential or degree. These access issues will limit the potential for success.

In an additional analysis of many of the large states with significant growth in the Hispanic/Latino population, not one respondent indicated that a long-term plan exists in his/her state to finance the operating budgets needed to increase the number of adults with college degrees and certificates. In fact, seven of 10 disagreed, with the other three neutral. And not one respondent indicated that a long-term plan exists in his/her state to finance the capital budgets needed to increase the number of adults with college degrees and certificates: seven disagreed, one strongly disagreed, and the other two were neutral/did not know. When asked if, in light of state funding cuts, achieving increases in graduation rates would be difficult, just one respondent strongly disagreed, while four agreed and five were neutral.

**DISCUSSION**

With deep cuts in state operating budgets, the lack of long-term plans to fund operating and capital budgets, de facto enrollment caps, and other significant barriers to achieving success, it is important to question whether higher education institutions will be able to achieve the lofty goals established by many well-intentioned national efforts and initiatives. Based on this combination of factors, we were not surprised that when state community college directors were asked to respond to the item “In light of state funding cuts, achieving increases in graduation rates will be difficult,” 24 were in agreement, 16 were neutral, and only 11 were in disagreement. Thus, for those expressing opinions, by better than two to one state community college leaders believe it will be difficult to raise graduation rates due to state budget cuts. These data call into question states’ capacity to expand service for a growing citizenry seeking college degrees and certificates. That our current boom is comprised of
Figure 3 States Indicating Access Capacity Strains and Population Growth from 2000 to 2010

Respondents Indicating “Agree” or “Strongly Agree” . . .

<table>
<thead>
<tr>
<th>Community colleges have limited the number of class sections resulting in a de facto enrollment cap at all or some institutions in my state.</th>
<th>To significantly increase numbers of successful community college transfers who obtain baccalaureate degrees requires expanding my state’s public universities.</th>
<th>Due to inability to meet the demand of growing transfer numbers, admissions standards have been raised to limit transfers at some or all of my state’s public . . .</th>
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<tbody>
<tr>
<td>Arizona</td>
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<td>Arkansas</td>
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<tr>
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<td><strong>Illinois</strong></td>
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<td>Colorado</td>
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<td>Connecticut</td>
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<td><strong>New York</strong></td>
<td><strong>South Dakota</strong></td>
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<td><strong>Nevada</strong></td>
<td><strong>Utah</strong></td>
<td><strong>South Dakota</strong></td>
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<td><strong>New Jersey</strong></td>
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<td><strong>South Dakota</strong></td>
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<tr>
<td><strong>North Carolina</strong></td>
<td><strong>Wisconsin</strong></td>
<td><strong>South Dakota</strong></td>
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<thead>
<tr>
<th><strong>CHANGE, 2000 to 2010 in . . .</strong></th>
<th><strong>TOTAL Population Growth</strong></th>
<th><strong>HISPANIC Population Growth</strong></th>
</tr>
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<tbody>
<tr>
<td><strong>Flagship universities</strong></td>
<td><strong>Regional universities</strong></td>
<td><strong>Flagship universities</strong></td>
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<tr>
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<td>2</td>
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</tr>
<tr>
<td>Arizona</td>
<td>California</td>
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<td>Washington</td>
<td>Washington</td>
<td>Washington</td>
</tr>
</tbody>
</table>

**Total** | **16** | **12** | **6** | **7**

Note: The largest states are bolded and italicized.

Sources: Ennis, Rios-Vargas, and Albert 2011, table 2, p. 6; Katsinas, D’Amico, and Friedel 2011a.
large numbers of non-White students makes this conclusion particularly troubling.

_It is important to question whether higher education institutions will be able to achieve the lofty goals established by many well-intentioned national efforts and initiatives._

While the responses to the survey indicate many real and at least perceived barriers, we also acknowledge the spirit we encounter among community college leaders to do more with less: Enrollment trends demonstrate that the nation’s community colleges are committed to their mission of access and postsecondary opportunity; additionally, the community colleges are undertaking strategies and initiatives to ensure student retention and success. The recent national attention reflects the importance and prevalence of the many college completion initiatives discussed previously. States are also asking for more than increased enrollment; two-thirds of the states are implementing or considering performance-based funding policies. What we continue to wonder is whether community colleges have finally reached their limits. Perhaps what is most surprising is that nearly one-third of states have limited course sections. The perennial access institutions are beginning to limit access.

We recommend that further study be done to analyze the statewide plans of the 50 states in order to assess whether those plans have the goal of expanding access to postsecondary education. In addition, as our nation experiences an economic recovery, we intend to ask many of these questions again to see if the two-year college sector is experiencing only temporary limitations or if community colleges are entering a new era of limited resources and more lofty goals. Finally, in light of the traditional federal role in expanding physical infrastructure to meet new waves of students, we recommend a national facilities study of America’s public higher education physical infrastructure. Such a study is justified if the federal investments in Pell Grants are to result in increasing the completion of first certificates and college degrees and addressing both the deferred maintenance that has accompanied the Great Recession and the age of the nation’s higher education campus plants, which were largely constructed between 1965 and 1980 (Harris, Manns, and Katsinas 2012).

Tight state finances continue to threaten access and capacity, especially in many of our nation’s fastest growing states. The end of federal American Recovery and Reinvestment Act (ARRA) stimulus funds, the slow recovery of state revenues, and competing state priorities will likely intensify the struggle for scarce state dollars. In light of state budget cuts and related issues, we conclude that financing college access and completion will be a continuing challenge in the immediate years ahead.

**REFERENCES**


Janice N. Friedel, Mark M. D’Amico, Stephen G. Katsinas, & Phillip D. Grant | 33

AUTHOR BIOGRAPHIES

JANICE NAHRA FRIEDEL is an associate professor in the School of Education, Iowa State University, Ames, Iowa, where she teaches in the doctoral community college leadership program. Her professional experience includes almost 30 years of community college administration, including dean of community and continuing education, vice chancellor for academic affairs and planning, the community college presidency, and state director of community colleges. Her research interests are community colleges, higher education finance and access, and state higher education policy.

MARK M. D’AMICO is an assistant professor of educational leadership at the University of North Carolina at Charlotte, where his research focuses primarily on community college student success and the community college role in workforce development. Prior to his faculty position, he served for nearly 15 years in administrative positions, most recently as executive assistant to the president of the South Carolina Technical College System.

STEPHEN G. KATSINAS is director of the Education Policy Center at The University of Alabama and a professor of higher education. The lead author of the Basic Classification of Associate’s Colleges of the Carnegie Foundation for the Advancement of Teaching, his research interests include access, finance, student aid, and policy issues in higher education.

PHILLIP D. GRANT is a Ph.D. student at the University of Georgia in educational administration and policy. He completed his master’s in public administration at The University of Alabama and worked as a research associate in its Education Policy Center. His research interests include rural education, higher education access, and equality issues.
Local and Regional Economic Contributions of Community Colleges
by Trudy Bers

It will be increasingly important for community colleges to let their constituencies know not only about their contributions to the education of the citizenry, but also about their contributions to the economy.

INTRODUCTION

COMMUNITY COLLEGES HAVE MULTIPART MISSIONS that include providing the first two years of baccalaureate programs; career and technical education (CTE) credit and noncredit programs for individuals seeking to enter the labor force, upgrade their skills, or change careers; developmental education for students who lack college-level skills, primarily in reading, writing, and mathematics; workforce and contract training to meet the needs of employers; continuing education for professionals seeking continued licensure or certification in their fields; education for community residents interested in lifelong learning; and cultural activities of all kinds. While these are generally accepted components of community colleges’ missions, some colleges have additional purposes, including offering baccalaureate degrees in selected areas, providing pre-college programs and services to enhance the college-level readiness of incoming students, and giving outside groups the use of college facilities. Another increasingly important part of the community college mission is its contribution to the overall economic health of its service area, the focus of this article.

ECONOMIC CONTRIBUTIONS OF THE COMMUNITY COLLEGE: THE ASSUMPTIONS

The recent recession brought community colleges to the forefront as vehicles to drive economic recovery through workforce education and the retraining of displaced workers. As George Boggs, former president of the American Association of Community Colleges, said, “Never in my life would I have expected community colleges to be called potential saviors of the economy” (McClure 2010, ¶ 1). But while the spotlight has recently been turned on community colleges, students of and advocates for these institutions have long suggested a number of ways in which they contribute to the economy. Because a primary role of community colleges—italics added for emphasis—is to serve the needs of their communities or service regions, the focus of their economic contributions is typically local rather than statewide or national.

Because a primary role of community colleges is to serve the needs of their communities or service regions, the focus of their economic contributions is typically local.

In this article the term “local” includes not just the official district a college serves, but also the surrounding region. As Phelps (2012) notes, community colleges are increasingly being called on to partner with other educational institutions, governmental agencies, and employers to craft regional approaches “to create new forms of economic, social, and human capital” (p. 2).

Attempting to impose a more precise definition on “local” or “regional” is outside the scope of this article. The following discussion assumes that economic contributions are primarily if not exclusively centered within a relatively constrained geographic area, perhaps a corner of a state or a
single county or city or cluster of suburbs. It is also important to note here that “local” denotes emphasis, not exclusion; many community colleges are following national trends and forming partnerships with employers and other institutions across local and state boundaries. The recent U.S. Department of Labor grants for community colleges (e.g., the Trade Adjustment Assistance Community College and Career Training [TAACCCT] grant program) support a number of cross-state projects.

A number of factors discussed below underlie the premise that community colleges contribute to the local economy. The degree to which these actually exist needs to be established.

1. Community colleges are closely connected with and informed by area employers. As a result, professional and technical education curricula, noncredit workforce development programs, continuing education for professionals, and contract training are both current and responsive to business and industry needs for a trained, qualified workforce.

Within the same institution some programs may be tightly linked to the businesses and industries they serve, while others may operate with fewer ties. One way colleges stay connected is through program Advisory Committees, with members drawn from the business, professional, and not-for-profit communities in that field. Community colleges also hire adjunct faculty who teach courses and provide information to their colleagues and administrators about what is happening in the workplace. Colleges convene special meetings of business representatives to learn about emerging business and industry issues and needs and to get assistance with the development of curricula to meet those needs. Finally, college personnel often represent the institution on local Chambers of Commerce, Economic Development Committees, Rotaries, and other civic organizations.

2. A significant number of part-time faculty who are actively employed in their field work at community colleges, and this ensures that students are taught by individuals who bring contemporary workplace experience and knowledge into the classroom. This in turn enriches the content and currency of what students learn and better prepares them for their work.

Faculty evaluations and periodic program reviews provide an opportunity to determine the currency of faculty. While tenure and related contractual provisions or institutional policies may make it challenging to terminate faculty or even require them to update their knowledge, it is incumbent on a college committed to providing students with up-to-date knowledge and skills to ensure faculty currency.

Part-time faculty, like full-time faculty, may be leaders in their fields and at the forefront of both knowing and being able to teach students what they must know and be able to do to be successful in the job market and workplace. Using data from the 1999 National Study of Postsecondary Faculty, Wagoner (2007) finds that part-time faculty in community colleges can be divided into two labor market groups, those valued for their expertise, knowledge, and skills and those valued because they provide the institution with flexibility and cost savings. He suggests that part-time faculty in vocational fields fit the former description, are often employed full time in their respective occupations, and are not interested in full-time faculty positions.

Conversely, he suggests that part-time faculty in transfer areas fit the latter description and are more likely to be seeking full-time faculty positions. His study is unique and presents a rich perspective on the importance of part-time faculty teaching in CTE programs.

3. Community colleges have the flexibility to create new programs in a short time to meet new and sometimes sudden demands for education and training.
A number of community college characteristics contribute to this flexibility. One is reliance on part-time faculty who work in their fields; colleges can hire new adjuncts as the need arises, enabling them to staff new courses for which full-time faculty are not available. The ability to create partnerships with businesses to provide workplace learning opportunities for students also helps institutions respond to emerging demands. Sometimes businesses will donate equipment needed for programs that the institution cannot afford to purchase or open their doors to permit classes to meet on-site and use company-owned equipment.

At the same time, community colleges operate within a number of constraints that may impede their ability to nimbly create (and terminate) programs. Among these constraints are processes, both internal and external (system or state), that require colleges to present substantial evidence of the need for a new program and their ability to support it as well as rigid approval calendars that can delay action for months. Availability of space, negotiated labor contracts, ability to find resources for necessary equipment, availability of qualified faculty and staff, institutional cultures that resist change—all these factors and more may slow, if not stop, colleges from responding quickly.

4. Employers know their future labor force needs and share that information with community colleges, which can then tailor existing programs and develop new ones to meet those needs.

Employers may be very conversant with their current workforce needs, both with respect to new hires and to upgrading the needed or desired abilities of current employees. These may include the need for general education as well as training in “soft skills,” such as the ability to communicate, work in teams, think critically, solve problems, and exhibit appropriate workplace behaviors such as regular attendance. Employers adopting new technologies, opening new facilities, incorporating new processes, and providing new services probably know what their employment needs are for the next several months.

Labor market information is also available from a number of public sources. Lebesch (2012) lists a number of them and discusses approaches to discovering projected employer needs and employment opportunities. But as the last half decade has shown, “certainties” about what jobs will be available are illusive.

5. Student demand for specific programs may provide an indication of positions available in the college’s service region and, therefore, in what fields the institution should provide education and training.

This factor is based on the premise that students act rationally and select their programs based on current and projected job opportunities. However, students select programs for a variety of reasons, and they do not always make choices that align with labor market opportunities. For example, the Manufacturing Institute indicates that there are 80,000 unfilled manufacturing jobs in Illinois and notes that many manufacturers are unable to keep up with demand because they lack skilled workers (Jaworski 2012). Yet enrollments in community college manufacturing programs in Illinois remain below capacity. This may be in part because students and their parents have outdated ideas about manufacturing jobs, thinking they are dirty, poorly paid, require little or no education, and have no future.

Alternatively, sometimes college programs are out in front of job availability. In her recent study of two partnerships that created career pathways for green jobs, Scully-Russ (2012) found that there were challenges in synchronizing the green jobs labor market with education and training programs that prepared workers for those jobs. In both partnerships, one in Vermont and one in Oregon, training was ahead of job creation. The partnerships misjudged the nature and
number of green jobs and the levels of education and training needed for them.

The recent emphasis on programs of study that depict the courses students interested in a particular career area should take at the high school, community college, and baccalaureate levels and show how these educational pathways lead to jobs is an attempt to provide useful, current information to foster better education and career choices. Required under the Carl D. Perkins Career and Technical Education Act of 2006, programs of study are developed through partnerships of educators and members of business and industry, not-for-profit, and governmental groups. The partners work together to identify needed knowledge and skills and determine how educational programs can be configured to prepare students for the workplace. An explicit objective of programs of study is to show students how they can earn industry-recognized postsecondary credentials or certificates or an associate’s or baccalaureate degree (MPR Associates, Inc. 2010).

6. Community colleges make a direct contribution to the local economy through employees’ spending and the institution’s purchase of goods and services.

Certainly college employees spend part if not most of their paychecks in their local communities. However, particularly in metropolitan areas with large numbers of employers, many staff members, especially those in classified or civil service ranks, would likely have other jobs in the area and still be spending their paychecks locally. In distressed economic times such as our current era, the availability of other jobs, particularly with benefits, is reduced, and community college positions may be perceived as a scarce and desirable resource. Studies of the mobility of community college employees below the rank of senior administrator are virtually absent from the literature so it is impossible to obtain empirical evidence to quantify this factor.

Having discussed six factors regarding the contribution of community colleges to their local economies, we turn now to examining three more specific lenses through which to examine these institutions’ contributions: workforce development, economic impact studies, and economic development.

LENSES THROUGH WHICH TO UNDERSTAND THE ECONOMIC CONTRIBUTION

WORKFORCE DEVELOPMENT

A significant element of most community colleges’ missions is to provide career and technical education programs for students preparing to enter the labor market or start new careers. Occupations for which community colleges prepare students often attract place-bound adults who cannot go elsewhere for jobs. Carnevale, Rose, and Cheah (2011) find that individuals with an associate’s degree earn nearly one-third more over their lifetime than individuals with just a high school education. Many colleges also provide noncredit continuing education for professionals who must or wish to acquire continuing education units (CEUs) to meet requirements for continuing licensure or maintain currency in their fields. In addition, they provide community service training for public employees in fields such as law enforcement and fire science. Finally, community colleges provide customized training, tailoring the design and content of workshops, seminars, and courses to meet the needs of specific businesses or industries.

Mellow and Heelan (2008) provide a strong overview of the role of community colleges in economic and workforce development. Their work, while still current in its general information, was published before the economic recession and the Obama administration’s spotlight on community colleges. The president clearly views community colleges as key providers of workforce training. In 2009, President Obama proposed $10 billion for community college job training initiatives, although Congress approved just $2 billion. In February 2012, the president proposed an $8 billion Community College to Career Fund to be administered
jointly by the Departments of Education and Labor. Funds would support community college-based training programs that would expand training to meet the needs of employers in high-growth sectors, provide workers with the latest certified training and skills, and invest in registered apprenticeships and other on-the-job training opportunities. The fund would also support paid internships for low-income community college students that would allow them to simultaneously earn credit for work-based learning and gain relevant employment experience. (Lewin 2012, ¶ 5–6)

Both Obama initiatives are based on the assumption that community colleges can identify high-demand jobs, provide appropriate levels of training and education in these fields, recruit interested students with the ability to acquire the necessary knowledge and skills, navigate the request for proposal (RFP) guidelines to submit successful proposals for funding, and comply with increasingly rigorous reporting requirements.

Because community college career and technical education and workforce development have become linchpins in proposals to restore the economic health of the nation, expectations for performance in these areas is at an all-time high. To measure and report on their effectiveness in preparing credit and noncredit students for the labor force and for job advancement, colleges are pressed to gather and report data from both internal and external sources. Below are some of these sources and the data and information they provide (please note that this is not an exhaustive list).

Internal sources:

» LEARNING OUTCOMES ASSESSMENTS. Colleges must identify the knowledge, skills, attitudes, and behaviors students are expected to acquire as a result of successfully completing courses and programs. Then colleges must assess whether students have, in fact, met those learning objectives. Finally, colleges are expected to use assessment results to improve teaching, learning, and course content. In some career areas, the specification of learning objectives and determination of whether students have met them is relatively straightforward, often directed by external specialized accrediting agencies or professional groups.

» COMPLETION. The number of degrees and certificates awarded in professional and technical fields is often considered an indicator of college effectiveness, especially if the awards are in high-demand fields shown to link directly with employer needs. It is interesting to note that employers have indicated that graduates also need the soft skills that characterize successful employees, including the abilities to communicate, work in teams, come to work regularly and on time, exhibit initiative, and problem-solve.

» JOB PLACEMENTS. Not all community colleges have placement services (offices that actually place students in jobs). Even when they do, colleges typically rely on students' self-reports about jobs obtained to track job placements. To complicate this, many community college students are already employed, and differentiating between their current job and a new one obtained as a result of a particular college CTE or workforce development program can be difficult. This is especially true for students remaining in their same job who have taken college courses to improve their knowledge and skills rather than to enter a new career.

» EMPLOYER SATISFACTION. This indirect indicator of effectiveness relies on surveys and testimonials from employers who hire program graduates or send their employees for training at the community college. Employer satisfaction is often cited in promotional and marketing materials as well as in self-study reports, but is at best a weak measure of actual effectiveness in workforce education. There are several reasons for this. First, employers may not know where their
employees received their education or even whether they completed a program or just took a few courses. Second, employers may be reluctant to provide negative feedback, especially about individuals, for fear of litigation or other reactions. Third, in the case of a low or skewed survey response rate, it is inappropriate to assume that the responses of a few employers can be generalized to represent the larger population of employers.

» **Test Results.** Some colleges administer standardized tests that claim to measure workplace knowledge and skills. A prominent example is the ACT WorkKeys®, which assesses skill levels in 11 different areas: applied mathematics, locating information, reading for information, applied technology, business writing, listening for understanding, workplace observation, teamwork, fit, talent, and performance (ACT 2013). The first three areas are the basis for the National Career Readiness Certificate program, which certifies that recipients are job ready with respect to general workplace skills, not job-specific requirements.

» **Student and Alumni Surveys.** Fraught with issues of non-response bias, faulty memories (see subsequent discussion of licensure), and genuine misunderstanding of questions, student and alumni surveys remain among the most widely used sources of information about the effectiveness of CTE and workforce development programs.

External sources:

» **Licensure, Vendor, or Other Recognized Industry or Professional Exam Results.** In many fields, and especially in health care, individuals must pass a state or board exam to be licensed to practice. For example, the National Council of State Boards of Nursing NCLEX examination “measures the competencies needed to perform safely and effectively as a newly licensed, entry-level nurse” (National Council of State Boards of Nursing 2013, ¶ 2).

In technical fields, a wide array of vendor or industry certifications are available, the attainment of which provides evidence (though indirectly) that the recipient has acquired the knowledge and skills required for the certification. Think here of Microsoft certifications that, according to the Microsoft website, “bring valuable, measurable rewards to students, IT professionals, their managers, and the organizations that employ them. These certifications are designed to provide the recognition you need to help you excel in your career and provide employers with validation of your skills” (Microsoft Technet 2012, ¶ “Microsoft Certified Professional Certificates”). However, certification results are rarely provided directly to the institution; thus, institutions must rely on the self-reports of students, the validity of which is subject to response bias (not all students will report), faulty memories, or inaccurate information (students may erroneously report certifications because they think taking a test is tantamount to being certified, claim they passed when they did not, or just do not remember).

» **State Unemployment Insurance (UI) Records.** Each state must compile data from employers that report quarterly wages for each employee. In some states, community college boards access the data, match individual records with records of students in the system, and report the number of students and their average quarterly wages, sometimes by program (i.e., the program in which the student was enrolled at the college). Data are reported in aggregate form and not by individual students. A small number of colleges obtain this UI data directly and can match individual student UI records with their own student-specific data. Data are reported by industry, not by occupation, so a nurse working in a manufacturing plant as an occupational nurse will be reported as an employee in manufacturing.
not health care. Wages are reported quarterly so it is impossible to know whether the reported earnings are for the entire quarter or just part of it. For example, a reported wage of $5,000 could be for a low-wage part-time job for the entire quarter; it could also be for one week on the job for a high-wage employee who began work the last week of the quarter (Lebesch 2012).

» DEBT MEASURES. Mullin (2012) describes metrics that gauge students’ commitments to repaying their student loans in comparison with their earnings, since high repayments correspondingly reduce disposable income available for other uses, both fixed expenses and discretionary spending. One metric is the debt-to-earnings ratio; another is the percentage of a program’s graduates who are actively repaying their loans. As Mullin notes, these measures help determine whether a student is being placed in an unduly burdensome economic position because debt comprises a high proportion of earnings.

As with other measures of institutional effectiveness, the approaches for demonstrating effectiveness in workforce development are often easier to describe than to execute. Nonetheless, these measures provide important evidence, although none should be used alone by a college evaluating its own effectiveness in preparing qualified, capable employees.

ECONOMIC IMPACT STUDIES

Determining the economic impact an institution of higher education has on its community is a valuable way of demonstrating its importance in a local, state, or regional marketplace. Different formats for economic impact studies have been developed, and many rely on an estimated multiplier effect of local expenditures. Parsons and Griffiths (2003) explain the concept of a multiplier as follows: “each dollar spent locally by the university, or its employees and students, generates a host of indirect transactions involving firms that have no obvious connection with the university” (p. 1). A common model used by higher education institutions to measure economic impact is the Caffrey-Issacs model developed in 1971. This model relies heavily upon the multiplier effect but is difficult to implement and is not as applicable to community colleges as it is to four-year institutions. In this respect, Ryan and Malgieri (1992) report three major problems with the use of this model for community colleges:

 Determining the economic impact an institution of higher education has on its community is a valuable way of demonstrating its importance in a local, state, or regional marketplace.

First, several of the economic estimates presented by Caffrey and Issacs are either inappropriate or less appropriate for use by community college personnel.2 ... Second, the survey of faculty and staff designed to produce estimates of their local spending presents a problem. This survey, which may be adapted for local purposes, presents several problems to the community college administrator who wishes to estimate the economic impact of his community college: the survey is difficult to adapt for a community college; the response rate among students is often too low to yield reliable information; and, most importantly, the development and implementation of the survey is a time-consuming task ... . Third, a problem exists with the retail gravity model that was designed to enable researchers to determine the percentage of non-housing expenditures that an individual is likely to make in his local environment. The model is based on the gravity theory which states that the amount of money spent for non-housing expenditures is inversely proportional to the square of the distance to the point of purchase. This model presents certain problems to the community college economic impact estimator: The inherent mathematical complexity of the concept; the difficulty in obtaining appropriate retail sales data; and the difficulty in operationalizing a “sales area.” (pp. 4–5)

2 The authors do not elaborate on this statement.
Put simply, it is difficult if not impossible for community college students and employees to report how much money they spend in the college’s official service area, especially in suburban communities where employees, and to some extent students, live across a wider geographical area than the college’s district.

Economic Modeling Specialists, Inc. (EMSI) conducts economic impact studies for colleges and universities. EMSI notes three broad categories of economic effects:

1. Institutional Operation Effects: The added income generated in the region as a result of your institution’s payroll and its purchases for supplies and services;
2. Student Spending Effects: Impacts associated with students and visitors who come from outside the region and spend money at local businesses;
3. Student Productivity Effects: The impacts of your institution’s alumni who continue to work in the region and expand the economy through their added skills and increased productivity. (Economic Modeling Specialists, Inc. n.d., p. 2)

Other organizations also conduct economic impact studies. For example, Northern Illinois University’s Center for Governmental Studies conducted a statewide study of Illinois community colleges in 2007 (NIU Center for Governmental Studies 2007). The center drew on three primary sources of data: college-level financial, student, and economic development data; employment, student, and visitor data derived from the individual colleges; and UI wage record data from the Illinois Department of Employment Security. Among the study’s key findings were:

- In the decade prior to the study, Illinois community college students contributed an estimated $3.3 billion in state and $12.8 billion in federal taxes.
- More than 9 of 10 Illinois community college graduates remained in Illinois after completion, most contributing to the state’s economy.

In addition to wages and salaries, in fiscal year 2005 Illinois community colleges spent $464 million in operating and capital expenditures. The multiplier effect produced an additional $332 million in expenditures.

Studies for each Illinois community college were also prepared as part of the statewide project. The Illinois Community College Board is sponsoring a similar economic impact study in 2013–2014.

**ECONOMIC DEVELOPMENT**

Economic development is a broad concept that is used to refer to a host of programs and activities intended to improve the economy of an area. While economic development often focuses on workforce contributions, this section suggests three additional ways in which community colleges contribute to the economic health of their areas.

The first way is through the sponsorship of small business assistance centers, often located on the campus, that provide programs and services to entrepreneurs seeking guidance in establishing or expanding small businesses. In addition to seminars, workshops, courses, individual and group consultations, and a variety of audio and print resources, the centers provide networking opportunities to help clients connect with potential colleagues and customers. A second way is by partnering with municipal or regional economic development offices, local Chambers of Commerce, and city governments to attract new and retain existing businesses. For example, one powerful means of attracting new businesses is by working with them to create customized training programs to ensure that a workforce equipped with the skills they need will be present in the community. While this blends into the general workforce development efforts discussed previously, the more specific focus here is on using workforce development as one component in an arsenal of incentives intended to draw new businesses. A third way is by contributing to the general quality of life in the area, thus complementing workforce development efforts, tax incentives, and other inducements to bring new companies to the area. Making modestly priced education available...
workers (beyond what is already offered under the rubric of workforce development) and enriching the cultural life of the community through the performing arts, art galleries, and continuing education programs are examples of how community colleges indirectly contribute to the local economy.

**CONCLUDING THOUGHTS**

Community colleges make substantial contributions to the economy of their area. In addition to their most obvious role, that of providing education and training for the labor force, they purchase products and services from vendors for ongoing operations, invest in capital development that creates jobs in construction and related industries, and are often one of the largest employers in the area. Community colleges make other, more subtle, contributions too. For example, many institutions provide workshops and sessions to help students learn how to manage their finances, thus helping prepare them with the knowledge and skills not just to handle their money while in college, but also to be responsible for their finances later on. Colleges may make their facilities available to outside groups at a nominal cost, enabling those groups to hold programs and meetings that would otherwise be impossible or require higher fees from participants. As calls for accountability escalate and institutions are pressed to do more with less, it will be increasingly important for community colleges to let their constituencies know not only about their contributions to the education of the citizenry, but also about their contributions to the economy.

**REFERENCES**


**AUTHOR BIOGRAPHY**

**TRUDY BERS** is the executive director of research, curriculum and planning at Oakton Community College in Illinois. She has been president of the Association for Institutional Research and is also on the faculty of the Doctor of Management in Community College Leadership program at the University of Maryland University College. She is a data coach for Achieving the Dream and works with institutions across the country to improve student success and make better use of data and information in decision making.
A National Economic Case Statement for Community Colleges

by Christopher M. Mullin and Kent Phillippe

Now more than ever the role of postsecondary education is to cultivate the nation’s human capital.

AUTHORS’ NOTE: This article was extracted in part from a policy brief titled Community College Contributions published by the American Association of Community Colleges in 2013. The views expressed in this article are the authors’ and do not necessarily represent those of the American Association of Community Colleges.

While American Olympians were displaying a testament to strength and harmony at the London Olympic Games in August 2012, the employment situation at home was anything but harmonious. The “jobs gap”—or the number of jobs needed to return to pre-Great Recession levels—stood at 11.3 million (Greenstone and Looney 2012) while 12.8 million Americans were unemployed (Bureau of Labor Statistics 2012b).

Given these realities and the general understanding that increases in educational attainment are associated with greater earnings and decreases in unemployment, now more than ever the role of postsecondary education is to cultivate the nation’s human capital. The personal impact of educational attainment is not lost on the public: in 2009, 60 percent of the public believed that a college education was needed for success in the work world (Immerwahr, Johnson, and Rochkind 2010).

THE ROLE COMMUNITY COLLEGES PLAY IN FILLING THE NEED

Each fall community colleges enroll 43 percent of all undergraduate students in addition to an estimated five million noncredit students. Community colleges also contribute to building and revitalizing local communities. Simply put, America’s community colleges are the brokers of opportunity (American Association of Community Colleges 2012b) for a stronger middle class and more prosperous nation.

In broad brushstrokes, the value of community colleges has been detailed repeatedly. Belfield and Bailey (2011) reviewed 20 studies on the earnings effects of a community college education, concluding that “this review affirms that there are strong positive earnings gains from community college attendance and completion, as well as progression to a 4-year college” (p. 60). In addition, the latest national estimate (prepared in 2007) of the return on investment to state and local governments from investing in community colleges was 16.1 percent.¹

While these broad-brush pictures of contribution are important, community colleges are intricate institutions offering pathways, degrees, and retraining opportunities and operating as engines of economic development. To date, the multifunctional nature of the community college mission has limited our ability to understand the role of these

¹ This is the most recent national estimate that Economic Modeling Specialists, Inc. (EMSI) has produced.
institutions in sustaining the nation’s general welfare. This article provides a better opportunity to understand the role of community colleges, framing the private and public economic returns of the community college movement in three ways:

1. **THE COMMUNITY COLLEGE AS A LAUNCHING PAD.** Community colleges serve as a starting point for students in terms of educational progression—the lockstep mentality that dominates considerations of educational attainment. They also accelerate learning through early college experiences and transfer opportunities.

2. **THE COMMUNITY COLLEGE AS A (RE)LAUNCHING PAD.** Community colleges serve as knowledge and skill providers to members of the community—often those who have already been successful in college—when they need them and in ways they need them.

3. **THE COMMUNITY COLLEGE AS A LOCAL COMMITMENT.** Community colleges serve local purposes, focusing on the needs and demands of the communities they serve.

**THE LAUNCHING PAD**

For nearly half of all undergraduates, the plurality of minority students, and the majority of low-income students, community colleges serve as a launching pad for greater educational attainment and the related benefits of social mobility and economic security (American Association of Community Colleges 2012a). This section outlines the ways that community colleges propel student and community prosperity.

For nearly half of all undergraduates, community colleges serve as a launching pad for greater educational attainment and the related benefits of social mobility and economic security.

**PROGRESSION OF EDUCATIONAL ATTAINMENT**

Success in postsecondary education is often measured as attainment of a bachelor’s degree. However, there are viable college-level outcomes prior to the bachelor’s degree including, but not limited to, certificates and associate’s degrees (see figure 1).

It is a mistake to invalidate the success of students, many of whom overcome substantial risk factors, if that success does not directly match the reader’s conception of what a college education represents (i.e., a bachelor’s degree). At the same time it is inconsistent with the role that community colleges play in social mobility and social justice to assert that continual educational attainment is not an important component of a family-sustaining wage and intergenerational opportunity; all students must be prepared to embark upon the next step of educational attainment should they choose to pursue it.

This section outlines the value, in terms of private and social returns, of each level of attainment along the educational progression continuum. We do this to underscore the importance of completion at each stage of educational progression.

**EARNING A HIGH SCHOOL CREDENTIAL**

By 2018, 28 percent of all jobs will require a high school diploma (Carnevale, Smith, and Strohl 2010). In fall 2010, 7.4 percent of adults aged 18 to 24 did not have a high school diploma or its equivalent (Snyder and Dillow 2012). In addition, approximately 93 million adults in the United States lack basic literacy and numeracy skills (Kanter 2012).³

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2 Ewell (2007) defines meaningful progress outcomes on the way to degree attainment that include momentum points and milestone events in addition to traditional credential attainment.

3 This estimate was derived from a National Assessment of Adult Literacy (NAAL) First Look report published by the National Center for Education Statistics (Kutner, Greenberg, and Baer 2006).
There is a need to increase the educational attainment of those without a high school credential. The first step is a high school diploma or its equivalent.

Of those students who initially enrolled in a community college in the 2003–04 academic year and lacked a high school credential, only one in five earned a credential or were still enrolled after six years. Conversely, and unsurprisingly, students who entered college with a high school diploma fared much better: 35.5 percent earned a credential and 19.6 percent were still enrolled. 4

While the low success rate of students who enter college without a high school diploma, certificate, or equivalency is not surprising, it is also not acceptable. There are efforts underway, such as Washington’s I-BEST and Minnesota’s FastTRAC programs, to increase success for students who show an ability to benefit from postsecondary education by contextualizing learning. Elementary and secondary schools have made the admirable commitment to implement common core standards and have partnered with higher education institutions to reconceptualize the way instruction can be delivered to close persistent attainment and achievement gaps. Additionally, 691,296 students took the General Educational Development (GED) test in 2011, many at community colleges (GED Testing Service 2012). The reasons students take the GED test are numerous, but the three most frequently cited were for personal satisfaction (46.7 percent), to get a better job (38.6 percent), and to attend a community college (31.0 percent) (GED Testing Service 2012). There are substantial returns from increasing an individual’s level of attainment to high school equivalency. Data indicate that the financial impact of becoming a high school graduate (or its equivalent) on the student is a 41 percent increase in median weekly earnings compared to those without a high school diploma, a decrease in unemployment from 14.1 percent to 9.4 percent, and a 54 percent increase in taxes paid (see figure 2).

In 2018, 17 percent of all jobs will require a certificate (Carnevale, Smith, and Strohl 2010). Certificates have a substantial place in the postsecondary education landscape. Community colleges, and higher education in general (Horn and Li 2009), have witnessed a substantial increase in certificates earned by students of color. In 2009–10, more than 425,000 certificates were awarded by community colleges, constituting 40 percent of all credentials they awarded (Mullin 2011) and 38 percent of all certificates awarded in postsecondary education as a whole. 5

Regrettably, certificates are rarely acknowledged. One reason for this is that they are not currently included in international comparisons of educational attainment (Mullin 2010b); 6 in addition, only one U.S. government survey contains information on certificate attainment (Carnevale, Rose, and Hanson 2012). An analysis by Carnevale, Rose, and Hanson (2012) suggests that our nation’s educational attainment

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4 Authors’ analysis of Beginning Postsecondary Student Aid Study data.

5 American Association of Community Colleges analysis of Integrated Postsecondary Education Data System data (National Center for Education Statistics 2012a).

6 This issue has been under examination by a federal interagency workgroup since the winter of 2009. An Expert Panel to Support Federal Measures of Workforce Education and Credentialing was created to further facilitate this work; author Christopher Mullin is affiliated with this group.
The Impact of Earning a Certificate

would increase by five percent if certificates (whose recipients have earnings 20 percent above those of the average high school graduate) were counted. Like other forms of educational attainment, certificates may not be the “highest level attained” and therefore may be earned but trumped by subsequent levels of education in measures of attainment.

An estimate of the financial impact of earning a certificate on the student, made by equating it to the level of “some college,” is a 13 percent increase in median weekly earnings compared to those with a high school diploma, a decrease in unemployment from 9.4 percent to 8.7 percent, and an 18 percent increase in taxes paid (see figure 2). The economic returns of these awards may be substantial; 23 percent of bachelor’s degree holders earn less than those with a license or certificate but not an associate’s degree (Carnevale, Rose, and Cheah 2011).

Community colleges, however, are not the only sector that awards certificates. A study published by the National Center for Education Statistics examined workforce outcomes for community colleges, for-profit institutions, and private institutions (Ifill and Radford 2012). The study found that median earnings for certificate completers starting at community colleges were the highest of all comparable sectors of higher education. Further, certificate completers were most likely to feel as though their education had helped them advance in their career, most likely to be satisfied with their job, and most likely to feel they had opportunities to apply their education at work.

The Impact of Earning an Associate’s Degree

The next step on the path of educational progression is the associate’s degree. On average, the benefits of continued educational progression accrue to the individual and society as a student moves from earning a certificate to earning an associate’s degree. By 2018, 12 percent of all jobs will require an associate’s degree.

Associate’s degrees are the unsung heroes of postsecondary education. A fact unrealized is that between 1970 and 2005 associate’s degrees were the fastest growing type of education.

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Figure 2 Changes in Earnings Associated with Each Change in Educational Attainment

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<thead>
<tr>
<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Median</td>
<td>% increase from prior level</td>
<td>Amount</td>
</tr>
<tr>
<td>Less than High School</td>
<td>$ 451</td>
<td>0%</td>
<td>$ 4,679</td>
</tr>
<tr>
<td>High School or Equivalent</td>
<td>$ 638</td>
<td>41%</td>
<td>$ 7,330</td>
</tr>
<tr>
<td>Certificate/Some College</td>
<td>$ 719</td>
<td>13%</td>
<td>$ 8,949</td>
</tr>
<tr>
<td>Associate’s Degree</td>
<td>$ 768</td>
<td>7%</td>
<td>$ 9,435</td>
</tr>
<tr>
<td>Bachelor’s Degree</td>
<td>$ 1,053</td>
<td>37%</td>
<td>$ 13,527</td>
</tr>
</tbody>
</table>

Notes: Annual taxes paid were estimated by determining taxes as a percentage of earnings based on data presented in figure 1.1 of Baum, Ma, and Payea (2010). These rates were then applied to median weekly earnings in 2011 as reported by the Bureau of Labor Statistics (2012a) after being annualized (by multiplying by 52).


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7 Carnevale, Rose, and Hanson (2012) found that certificate holders earned 20 percent more, on average, than high school-educated workers. Because their analyses do not include the metrics discussed in this section, we apply the more conservative estimate reflected by “some college” in this article.
degree earned (Hauptman 2011), growing at twice the rate of bachelor’s degrees. Further, 25 percent of those with bachelor’s degrees earn less than those with associate's degrees (Carnevale, Rose, and Cheah 2011). More than 630,000 associate’s degrees were awarded by community colleges in 2009–2010 (Mullin 2011), representing 76 percent of all associate’s degrees in that period.

There is a financial impact from earning an associate’s degree on both the student and society. In 2011, median weekly earnings increased 7 percent, unemployment decreased from 8.7 percent to 6.8 percent, and taxes paid increased 8 percent when students moved from earning a certificate to earning an associate’s degree (see figure 2).

As is the case with certificates, community colleges do not monopolize the associate’s degree market. A recent study published by the National Center for Education Statistics (Ifill and Radford 2012) found that community college associate’s degree earners, compared to those from other institutional types, earned more and were the most likely to be satisfied with their job and feel as though their education helped them advance in their career.

THE IMPACT OF EARNING A BACHELOR’S DEGREE

As demand for postsecondary education increases and the capability of institutions in other sectors to respond diminishes, community colleges are stepping in to meet the needs of their communities. In 2009–10, 8,466 bachelor's degrees were awarded by public community colleges.8

The financial impact of earning a bachelor’s degree on the student is a 37 percent increase in median weekly earnings, a decrease in unemployment from 6.8 percent to 4.9 percent, and a 45 percent increase in taxes paid as compared to associate’s degree earners (see figure 2).

The data provided in this section demonstrate that, on average, the private and social economic benefits associated with reaching each level of attainment provide students with a stronger foundation for continuing their studies and a stronger society in which to live.9 In addition to the economic rewards, it may be worth noting that success breeds success, and the act of acknowledging success through the awarding of a credential signifies the value of the student’s achievement and validates his/her efforts. The opportunity to excel at all levels of education for all students is the goal; waiting to validate the efforts and experiences of students with multiple risk factors associated with completion until they earn a bachelor’s degree many years later is an outdated perspective.

The success of community colleges may be told in terms of credential attainment, as this section has done, but that is only one part of the diverse community college mission. A less acknowledged function is the way in which community colleges accelerate student success.

ACCELERATING SUCCESS

There is a pressing interest in getting students to postsecondary credentials more quickly (Complete College America 2011) to avoid life getting in the way and to optimize the long-term economic benefits realized with educational attainment (Bosworth 2010); a 22-year-old completer will likely have greater lifetime earnings and public contributions than a 40-year-old. While community colleges are engaged in innovating ways to reduce time to degree within their institutions,10 they are also supporting other sectors of

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8 Authors’ analysis of Integrated Postsecondary Education Data System data.

9 There are any number of ways to calculate economic benefits, each containing its own analytical assumptions and limitations. The methods presented in this article are the most straightforward and commonly cited, albeit reframed as educational progression rather than independent of each other. Readers interested in a more complex analysis of economic modeling for the labor market and non-labor market returns of postsecondary education are referred to McMahon (2009).

10 Strategies include intrusive counseling, mini-semesters, priority enrollment, eliminating late registration, mandatory orientation sessions, student success courses, self-paced math modules, automatic graduation, removing graduation fees, early alert programs, refresher courses or programs, reengaging students close to graduating who have...
education in accelerating student success. The supportive role of the community college is primarily operationalized in two ways, through engagement with students in high school who are prepared for college-level work and through the transfer function.

ENGAGING STUDENTS IN HIGH SCHOOL

Community colleges offer opportunities for high school students to engage in college-level work in a number of ways including, but not limited to, dual credit, dual enrollment, and early-college high school. Early college enrollments are becoming a larger part of community college student bodies; in fall 1993, 1.6 percent of community college students were under the age of 18 compared to 7 percent in fall 2009 (Mullin 2012b). Assuming each student took only one course at a community college in fall 2009, the half-million students enrolled saved $140 million in tuition and fees.\(^{11}\)

Taking college-level courses in high school not only saves money, but also contributes to college completion. A greater percentage of students who earned credits in high school (46.9 percent) and began at a community college attained a postsecondary credential within six years after high school than those who did not (34.2 percent).\(^{12}\)

THE TRANSFER FUNCTION\(^{13}\)

Community colleges play a substantial role in bachelor’s degree attainment. Consider the following: 28 percent of bachelor’s degree earners started at a community college, and 47 percent took at least one course at a community college (Cataldi et al. 2011).\(^{14}\) While many narratives about community colleges focus on the academic deficiencies of their students,\(^{15}\) it is worth noting that these colleges also serve as a starting point for academically-advanced students aspiring to transfer. It is therefore no surprise to learn that students who start at a community college and transfer are as successful as native students (students who start at the receiving institution).\(^{16}\) The role of the community college in serving as a launching pad to a four-year college is supported by public opinion: 71 percent of the public believe that it is

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11 The exact nature of funding early-college high schools is not fully known outside of case-by-case examples. The savings calculation requires some assumptions and limitations including, but not limited to, the following: It is generally the case that the student is not charged for college opportunities while in high school. Also, there are circumstances where the college contributes to covering some costs of the program or course. Working from these two points, it is reasonable to estimate the savings to the student, but not to society directly. (The case can be made that increased efficiencies are created when students earn college credit in high school by reducing staffing resources, for example; the data for such estimates were not available to the authors). It should also be acknowledged that some of the beneficiaries of college opportunities in high school will have qualified for governmental grants that would also be governmental expenses (in some states lottery-funded scholarship programs support dual enrollees, for example). Further, it is reasonable to assume that some students took more than one course at a community college. These limitations were not able to be addressed in this analysis. Because we are not able to obtain a national estimate of the distribution of courses taken we rely on a conservative estimate of just one course. The tuition and fee price used in this analysis ($2,544) was obtained from the College Board (2013) and reflects enrollment-weighted values. To arrive at a cost-per-course, the full-year value of $2,544 was divided by 10 (the number of courses assuming 3 credits per course) to arrive at $254. Multiplying 553,573 (the number of students under the age of 18 attending community colleges in fall 2009) times $254 resulted in $140,607,542.

12 Authors’ analysis of Beginning Postsecondary Student Longitudinal Study data.

13 This section was extracted in part from a policy brief published by the American Association of Community Colleges (Mullin 2012a).

14 These data come from our analysis of Baccalaureate and Beyond data retrieved using the PowerStats web tool (National Center for Education Statistics 2012b).

15 Two numbers are often presented to quantify remediation, 42 percent and 60 percent. The 42 percent value comes from the 2011 version of the Condition of Education released by the U.S. Department of Education’s National Center for Education Statistics (National Center for Education Statistics 2011). Specifically, the report notes that “In 2007–08, some 42 percent of first-year undergraduate students at public 2-year institutions (typically community colleges) reported having ever taken a remedial college course” (p. 70). The 60 percent number comes from the 2004 version of the Condition of Education released by the U.S. Department of Education’s National Center for Education Statistics (2004). Specifically, the report shows that 38.9 percent of 1992 high school 12th graders who enrolled in postsecondary education did not take remedial coursework by the year 2000. (The inverse of 38.9 percent is 61 percent, or roughly 60 percent, which represents the number who took a remedial course.) The latter analysis covers a longer time period and results in a larger number as some students delay taking remedial courses.

16 It is worth noting that while the success of transfer students relative to native students may be similar, it may still be low if the receiving institution has a low rate of success.
sometimes better to start at a community college rather than a four-year college (Associated Press 2010).

While not all of the costs to the student—and to the public through related student aid programs—associated with transfer can be determined, it is possible to estimate the savings that accrue to those students who start at a community college and subsequently transfer to a four-year institution. For the 203,000 students who started at a community college in 2003–04 and transferred to a public four-year institution, a conservative estimate of the savings accrued is $943 million in inflation-adjusted (2011) dollars. Assuming that the transfer behaviors of the entering class of 2003–04 did not change for ensuing cohorts, the amount of savings reaches $1.9 billion for the 2011–12 cohort. These values reflect only those students who transferred to public institutions. An additional $1.7 billion in savings was garnered by students starting at a community college in 2011 who had credits accepted by private nonprofit institutions after transfer. For methodological reasons, an estimate for for-profits was not determined. In total, students who started at a community college between 2003 and 2011 and then transferred to either a public or private nonprofit four-year institution are estimated to have saved $22.5 billion ($24.3 billion in inflation adjusted [2011] dollars) (Mullin 2012a).

Some critics and colleagues assert that there is a “penalty” for students who start at a community college in the form of a decreased likelihood of obtaining a bachelor’s degree during the period observed compared to similarly qualified students enrolling in a four-year college. They rarely examine the role that four-year colleges play in transfer in the first place or the extent to which students’ post-transfer success is due to the actions of the receiving institution. However, Doyle (2006) provides an example of the impact that the policies of four-year colleges can have on community college transfers. He found that when all of a community college student’s credits were accepted by a four-year receiving institution, 82 percent earned a bachelor’s degree in the time period observed compared with 42 percent of those who only had some of their credits accepted. This factor, then, appears to be a critical dimension of transfer success. Additionally, Cheslock (2005) notes that four-year institutions with high numbers of former community college students tend to have, among other traits, high attrition rates and fewer financial resources, which almost by definition would lower the success rates of community college transfers.

THE (RE)LAUNCHING PAD

In the history of the community college movement, a strand of thought and action developed that placed value on knowledge and skill acquisition—specifically, the idea that some students desire and need further learning experiences, not necessarily credential attainment. In commenting on the recalibration of focus to access and success rather than just access, Dr. Edmund Gleazer, who oversaw the evolution and development of the community college movement from mostly private colleges to public institutions and systems as president of the American Association of Community and Junior Colleges from 1958 to 1981, noted that community colleges were built to be like public libraries, where students checked out the knowledge they needed when they needed it (pers. comm. March 2012). This is not a popular position and it does not fit into the lockstep mentality of the traditional college experience, but it is a reality. Consider the following data: approximately one-quarter of community college students previously earned a postsecondary credential; 8 percent have already earned a bachelor’s degree.18

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17 An attempt was made to replicate this analysis with a more recent Beginning Postsecondary Students Study cohort, but alterations to variables did not allow for an exact replication. The new, slightly different, analysis did show a comparatively higher completion rate when some credits were accepted (47.8 percent) and a comparatively lower six-year completion rate when all credits were accepted (60.7 percent). It was also interesting to note that the percentage of students earning an associate’s degree increased from 2.4 percent in Doyle’s analysis to 15.9 percent.

18 American Association of Community Colleges analysis of National Postsecondary Student Aid Study 08 data retrieved using the PowerStats web tool (National Center for Education Statistics 2012b).
Three reasons that students may enroll at a community college other than credential attainment are to get the skills needed to obtain a job, to enhance an existing skill set to keep pace with changing work requirements, or to retrain for a new job. Data regarding the economic impact of these students are harder to come by and generalize, but some research has been completed. For example, Jacobson, LaLonde, and Sullivan (2005) found that individuals who attended community college and left without completing a degree earned between 9 and 13 percent more than those with only a high school diploma. "Upskillers" may not necessarily see a bump in their earnings but may keep their job, and it is hard to quantify those benefits.19

A LOCAL COMMITMENT

Community colleges have service areas that cover virtually every square inch of the country. This local orientation makes them unique in postsecondary education in that they have a strong commitment to their community.

RESHAPING LOCAL ECONOMIES

Community colleges play a central role in preparing the workforce needed by both new and existing businesses and industries in a community. While existing businesses may be engaged in partnerships with community colleges to maintain a workforce—as exemplified by the partnership between Western Nebraska Community College and the headquarters of international retailer Cabela that has kept the company located in Sidney, Nebraska, a town with a population of approximately 6,500 (Shaffer and Wright 2010)—community colleges also serve as engines of local economic development.

When a business closes a location, community colleges often step in to retrain affected workers. For example, when Food Lion closed a distribution center in Clifton, Tennessee, Roane Community College created a seven-week training program for laid-off workers to help them transition to a new job (Dembicki 2012). The skillful ability of community colleges to provide training for dislocated workers has been acknowledged by the creation of the Trade Adjustment Assistance Community College and Career Training grant program (The Health Care and Education Reconciliation Act of 2010), which appropriated $2 billion for colleges to develop, offer, or improve educational or career training programs for workers eligible for training under the Trade Adjustment Assistance for Workers program.

There is space for community colleges to be front and center in the reshaping of local economies. For example, the leadership of Indian River State College in Florida recognized that the state could no longer rely on tourism, citrus, and housing to maintain its state and local economy. In response, the college worked with partners to develop the “Research Coast,” including the Kight Center for Emerging Technologies developed to enhance the community’s profile in the high-tech industry and the Brown Center for Innovation and Entrepreneurship focused on energy-related fields. Walla Walla Community College in Washington provides another example: its Center for Enology and Viticulture has contributed to revamping the local community and led to national recognition for the college.

19 One way to do so would be to examine pre- and post-earnings measures for those who complete courses and stay in the same occupation after exiting without a postsecondary credential and then to examine the counterfactual—the case in which sufficiently similar workers who enrolled with the same occupation and earnings completed the same courses with the same grades and some became unemployed while others continued to work. One can see how the data needed to conduct this type of analysis would be challenging to come across and how anecdotes from campuses across the country fill the void for data on this population of student.
GATHERING RETURNS

Eighty-four percent of community college students work, contributing to both the tax base and local economy through consumption taxes, rents, and procurement of goods and services. Researchers conducting a study in Oregon, for example, estimated that 87 percent of former community college students stayed in the region 30 years after leaving college (Robison and Christophersen 2006). Further, 75.5 percent of those who became registered nurses through associate's degree programs continued to reside in the state in which they were educated compared with 65.2 percent of bachelor's degree nurses (Health Resources and Services Administration 2010). Even for those who go on to complete a bachelor's degree, attending a community college increases the likelihood that students will stay in the state in which their degree was earned: 64 percent of bachelor's degree earners who did not attend a community college stayed in state as compared to 79 percent of bachelor's degree earners who did attend a community college.20

CONCLUSION

This article provides a framework and supporting data to detail some of the public and private benefits resulting from the various community college missions. It is widely known that community colleges have the lowest tuition and fee structures in order to allow for broad access to higher education. What is less known is that community colleges, while serving 43 percent of undergraduates, have received only approximately 20 percent of state tax appropriations for higher education (Mullin 2010a). It is also unfortunately the case that community colleges are funded in such a way that only allows them to spend less than a third of the amount of education and general funds that a private research university is able to spend on a per student basis (Desrochers and Wellman 2011). For community colleges to continue to provide these benefits and fill in where other opportunities for education and training once stood, public investments in the instruction these institutions provide need to stabilize if not increase.

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**AUTHOR BIOGRAPHIES**

**CHRISTOPHER M. MULLIN** is the assistant vice chancellor for policy and research at the State University System of Florida, Board of Governors. Previously he served as the program director for policy analysis at the American Association of Community Colleges.

**KENT PHILLIPPE** is the associate vice president for research and student success at the American Association of Community Colleges.
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The Steps in Brief

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STEP I is the 30,000-foot view of integrated planning. The aim of this step is to provide participants with a clear understanding of what integrated planning models generally look like, what elements are important in integrated planning, and how the big picture ideas, such as mission, vision, and values, impact integrated planning. It is also an introduction into the vocabulary of planning.

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STEP II takes a look at the process of planning. What does it take to create a plan? What details are involved in fleshing out a plan? What does a planning document look like? And what moves a plan into action? This step expands the vocabulary of each individual discipline into the range of another—academics, facilities, and budget/finance.

The intersection of academic, resource/budget, and facilities planning defines a nexus for learning-specific lessons in integrated planning. The SCUP Walnut College Case Study is the basis for practicing an integrated planning process that results in a plan reflecting the collaboration of all functional areas at Walnut College. In the process of creating the plan, participants will gain a deeper understanding of the needs and issues confronting key functional areas on campus during a planning initiative.

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STEP III begins the process of managing the changes envisioned and set into motion by Steps I and II. It’s all about the people—individuals who can stop a process dead in its tracks, or pick it up and run with it. It brings the language of organizational change and psychology into the everyday office where it can inspire, convince, or mediate the cultural, social, and political dynamics that make change a real challenge.

Step III focuses on the cases that campuses bring to the workshop for its active learning component. Through the development of a change profile, each participant creates strategies for moving an integrated planning process forward on campus. Understanding the nature of relationships on campus—up, down, and sideways—and how they affect the planning and change processes can make the difference in achieving the institution’s goals.

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