CORNERSTONES OF COMPLETION

STATE POLICY SUPPORT FOR ACCELERATED, STRUCTURED PATHWAYS TO COLLEGE CREDENTIALS AND TRANSFER

DECEMBER 2012

By Lara K. Couturier

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Completion By Design is a five-year community college redesign effort focused on raising community college completion rates for large numbers of low-income students under 26 while containing costs, maintaining open access, and ensuring the quality of community college programs and credentials. Completion by Design is an initiative of the Bill & Melinda Gates Foundation's Postsecondary Success Strategy.

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EXECUTIVE SUMMARY v

INTRODUCTION:
THE TALE OF TWO TERRYS 1

TEN HIGH-LEVERAGE POLICY RECOMMENDATIONS 6

- Policy Recommendation 1:
  Create structured transfer pathways by improving transfer and articulation policies 7
- Policy Recommendation 2:
  Redesign CTE programs into more structured pathways with clear labor market value 10
- Policy Recommendation 3:
  Support structured pathways with better use of labor market information and program-level data 12
- Policy Recommendation 4:
  Build direct routes to college opportunities through strategies such as dual enrollment, early college, and contextualized basic skills instruction 14
- Policy Recommendation 5:
  Improve assessment and placement policies, including consideration of multiple measures 16
- Policy Recommendation 6:
  Reduce, accelerate, and contextualize developmental education 17
- Policy Recommendation 7:
  Support strong college advising, orientation, and student success courses, including advising that encourages early entry into a program stream that leads to a major 18
- Policy Recommendation 8:
  Invest in professional development to prepare faculty for pedagogical and curricular changes and promote faculty leadership in the reform process 21
- Policy Recommendation 9:
  Leverage technology to support individualized student planning, tracking, degree audit, and early warning systems 22
- Policy Recommendation 10:
  Design financial aid to encourage and reward student progress 23

CONCLUSION 24

APPENDIX:
ALIGNMENT BETWEEN THE COMPLETION BY DESIGN PATHWAY DESIGN PRINCIPLES AND THE POLICY RECOMMENDATIONS 26

REFERENCES 29

EXECUTIVE SUMMARY

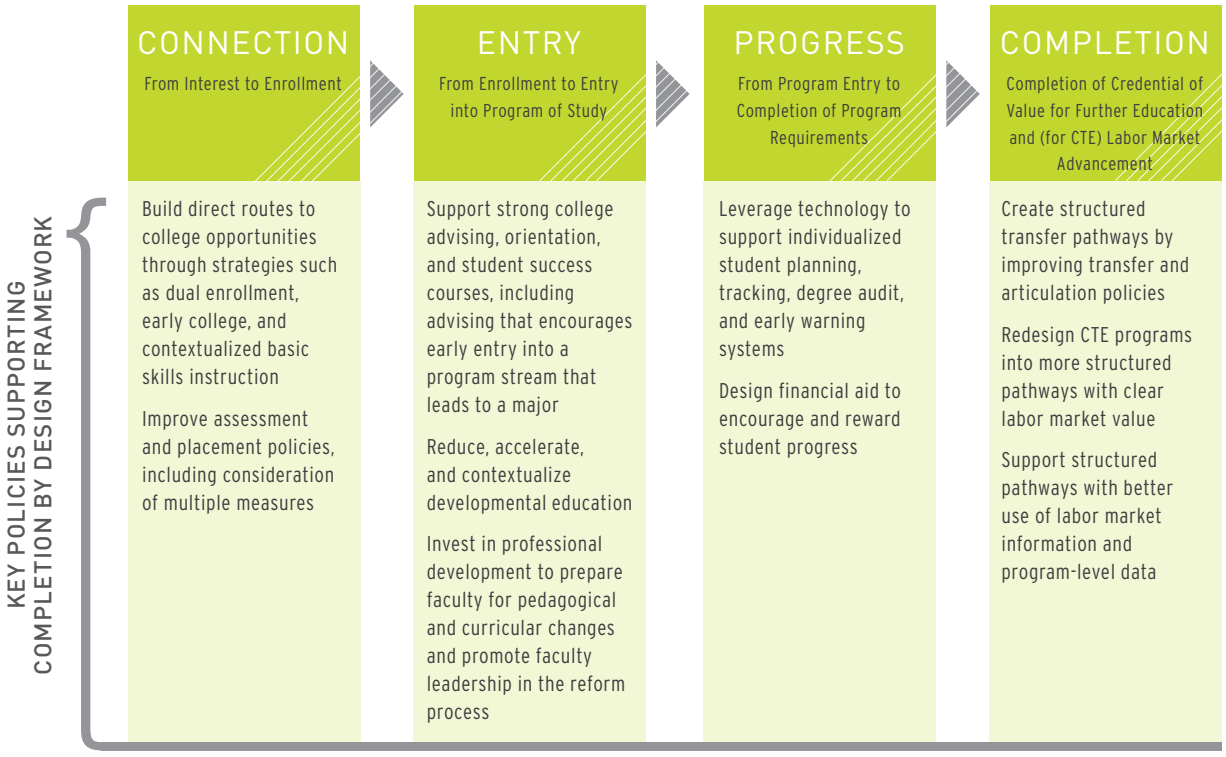
In spring 2012, after a year of intensive data analysis and planning, the colleges participating in Completion by Design announced strategies for creating clear, structured routes through college for more students, often referred to as accelerated, structured pathways to completion. These strategies contain elements unique to each college, but all drive toward helping students enroll early in program streams that lead to a major, and keeping students engaged and progressing until they complete credentials with labor market value. To that end, the strategies include interventions such as strategic dual enrollment, mandatory orientation, improved advising, acceleration of developmental education, early enrollment in programs of study, and close monitoring of student progress.

Completion by Design, funded by the Bill & Melinda Gates Foundation, is a partnership between participating colleges and state-level policy organizations. The initiative's strong policy component seeks both to change policies in ways that support the colleges' change strategies and to spread the learning and ideas stemming from Completion by Design to the other community colleges in each state.

Now that the colleges have settled upon their strategies, the critical next step is for the states to assess how they can best support the institutions and scale up their best innovations as they design and implement structured pathways. However, a robust focus on strengthening student pathways represents a new frontier for both community colleges and the state policy environments in which they operate. As a result, Jobs for the Future (JFF) has looked across the participating states to develop 10 high-leverage policies that can accelerate institutional change toward systemic, student-focused structured pathways.

These recommendations are not meant to be prescriptive, nor do they comprise an exhaustive list of potential policies that states could implement to improve postsecondary completion rates. Rather, these policies align tightly to the goal of supporting colleges as they build structured pathways. The policy recommendations, summarized below, are organized by the four phases of the initiative's Preventing Loss, Creating Momentum Framework.

POLICIES TO SUPPORT STRUCTURED PATHWAYS



This policy brief is designed to be a living document. JFF will vet the document with states, college representatives, and partners on the Completion by Design National Assistance Team, see which ideas gain traction, and revise and adapt it over time to reflect changes in the priorities and strategies of the initiative and its participating colleges and states.

INTRODUCTION:
THE TALE OF TWO TERRYS

In 2011, 24 community colleges in Florida, North Carolina, Ohio, and Texas set out to redesign the college experience of a fictional student named Terry.

When our story starts, Terry is in the tenth grade, has a B average, and comes from a low-income family. She dreams of becoming a teacher. Two years later, she enters a community college.

At the typical community college today, Terry 1.0 would likely encounter a variety of obstacles, such as limited advising, a long developmental education sequence, and a meandering path through an overwhelming number of course options. Terry 1.0 would be unlikely to earn a college credential, and if she did, it would be based on a lot of luck and grit.

Now imagine Terry 2.0, enrolled in a community college with accelerated, structured pathways—defined, intentional routes through college that keep her engaged and progressing until she completes her credentials. Those pathways lead Terry to "completion by design"—rather than "completion by luck"—and thus significantly increase the college's completion and graduation rates for low-income students under the age of 26 (*see Figure 1 on page 3*).

ALIGNING POLICY AND PRACTICE

The 10 recommended policies align with Pathway Design Principles developed for Completion by Design to guide colleges as they create structured pathways. Those principles were developed in spring 2012 by the Community College Research Center and the RP Group, two National Assistance Team partners in Completion by Design. Aligning the policy recommendations with the colleges' pathways strategies and the Design Principles helps ensure that the policy effort supports and works in concert with institutional change efforts. *See the appendix for details on how the principles align with the policy recommendations.*

Helping community colleges create those pathways is the goal of Completion by Design. With funding from the Bill & Melinda Gates Foundation, the initiative focuses on four phases of a Preventing Loss, Creating Momentum Framework: Connection; Entry; Progress; and Completion. These phases identify where students fall off the pathway or what keeps them on it.

Completion by Design defines a structured pathway as "an integrated set of institutional policies, practices, and programs intended to maximize students' likelihood of completing a credential." The initiative developed its focus on structured pathways based on research about what works for community college students combined with the participating colleges' experiences (see, for example, Completion by Design 2012; Jenkins & Cho 2012; Moore et al. 2012).

In spring 2012, after a year of intensive data analysis and planning, the Completion by Design colleges announced their structured pathways strategies for helping students like our fictional Terry. These strategies contain elements unique to each college, but all drive toward building and expanding structured student pathways through programs of study, and to that end they include interventions such as strategic dual enrollment, mandatory orientation, improved advising, acceleration of developmental education, early enrollment in programs of study, and close monitoring of student progress.

FIGURE 1.
THE TALE OF TWO TERRYS

	UNDERPREPARED, UNDERFUNDED, ENROLLED PART TIME	UNDIRECTED AND BARELY "COLLEGE READY"	STOP-OUT RISK	LUCKY TO CROSS THE FINISH LINE AFTER 5 YEARS
TERRY'S CURRENT JOURNEY	> Attends a high school without college prep curriculum > Confused by FAFSA; family & school don't help; doesn't complete FAFSA > Graduates high school and gets a low-wage retail job; delays enrollment for a year; finally enrolls in local community college, but part time	> College placement test requirements force 3 semesters of developmental education courses > Lack of advising leads to unstructured, part-time enrollment > Lecture-based gatekeeper courses create disengagement, boredom, and surface-level learning at best	> Self advising leads to extra courses/excessive credits and inability to access needed college supports > Semester-based learning model constrains accelerated progression > Over-enrolled courses and heavy workload lead her to "stop out" for a semester	> Loses job and reenrolls, continues to struggle > Graduation fees present financial and administrative barrier to graduation > Lack of career advising leads to low-wage retail work again even after obtaining a credential
TALE OF TWO TERRYS > 10th grade > B-student > Low-income family > Dreams of becoming a teacher > Starts at a community college	CONNECTION	ENTRY	PROGRESS	COMPLETION
TERRY'S FUTURE JOURNEY	> Attends a postsecondary-aligned high school with college prep curriculum > High school supports her to complete FAFSA before graduation > Financial aid enables her to enroll full time > Chooses to begin at a high-quality community college close to home at significantly lower cost	> Diagnostic assessment allows for targeted developmental education during the summer and supplemental instruction during the first semester > High-quality digital courseware in gatekeeper courses provides more diverse and deeper learning opportunities; results in higher student engagement and improved learning outcomes	> Intrusive advising steers her into a coherent program of study > Learner Relationship Management system alerts her when at academic risk, so she can course correct, and enables a useful social network of support > Innovative competency-based learning options allow her to complete many courses at her own pace	> Contextual learning supports career relevant work experience > Degree audit system automatically confers credentials, including a certificate along the way to the degree > Intrusive advising helps "match" her to the right 4-year institution
	PREPARED, SUPPORTED, ENROLLED FULL TIME	ACADEMICALLY CAUGHT UP AND READY TO ROLL	ON TRACK IN AN ACCELERATED PROGRAM OF STUDY	A WELL-CONNECTED GRADUATE IN 2 YEARS READY TO CONTINUE LEARNING

Source: The Bill & Melinda Gates Foundation

POLICY RECOMMENDATIONS FOR STRUCTURED PATHWAYS

Completion by Design is a partnership between participating colleges and state-level policy organizations. The initiative's strong policy component seeks both to change policies in ways that support the colleges' transformation strategies and to spread the learning and ideas stemming from Completion by Design to the other community colleges in each state.

In fall 2011, with the launch of Completion by Design, Jobs for the Future conducted a scan of the relevant policies in each state participating in the planning phase. The goal was to begin the state policy effort by assessing policies in place in each state that support the four phases of the Preventing Loss, Creating Momentum Framework (*see Figure 2 on page 5*). These scans offered a snapshot of a state's policymaking environment, and JFF accompanied them with recommendations for policy reform customized to each state.

Now that the colleges have settled upon their strategies, the critical next step is for the states to assess how they can best support the institutions and scale up their best innovations as they design and implement structured pathways. However, a robust focus on strengthening student pathways represents a new frontier for both community colleges and the state policy environments in which they operate. As a result, JFF has looked across the participating states to develop 10 high-leverage policies that can accelerate institutional change toward systemic, student-focused structured pathways.

These recommendations are not meant to be prescriptive, nor do they comprise an exhaustive list of potential policies that states could implement to improve postsecondary completion rates. Rather, these policies align tightly to the goal of supporting colleges as they build structured pathways. For example, performance-based funding is not included here. Creating the right incentives for institutional performance is important, but these recommendations focus on policies that can help colleges structure students' experiences. Local context reigns, of course; all the policies identified by JFF will not necessarily be relevant to each state.

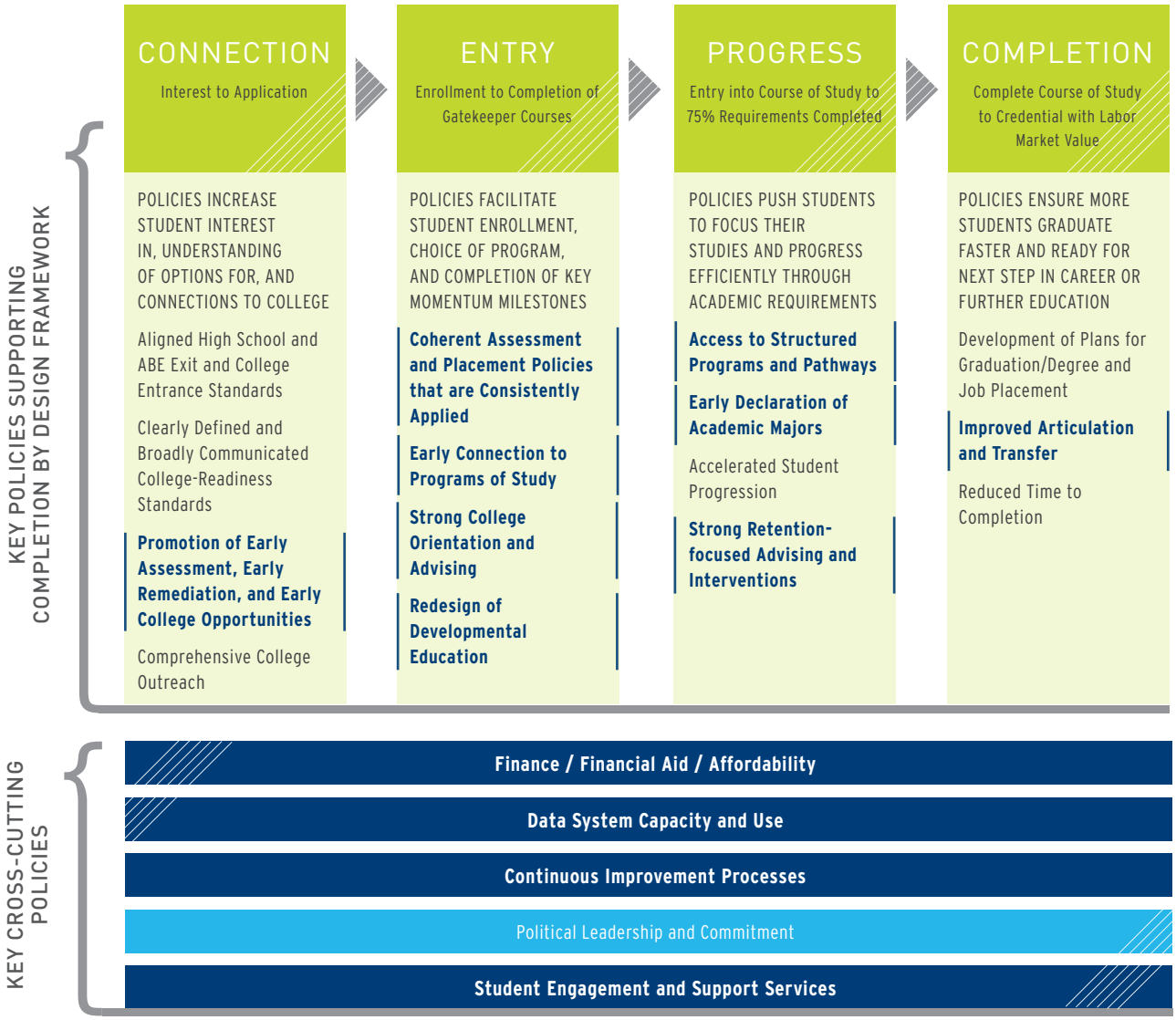
NEXT STEPS: POLICY SUPPORT FOR STRUCTURED PATHWAYS

These policy recommendations focus on the interactions and relationships between a state's colleges and the colleges' system or association. JFF advocates that policy recommendations be formulated through a process of state-level associations and systems working with their colleges to design an agenda that best supports local reform, leading to collective, state-level action that:

- Brings the right people to the table;
- Makes good use of data for informed decision making;
- Invests resources to incent implementation of research-based reform models; and
- Promotes college and faculty leadership of reform.

FIGURE 2.
POLICIES TO SUPPORT STRUCTURED PATHWAYS

At the outset of Completion by Design, JFF identified the highest-leverage policies that a state might pursue to support the goals of each phase of the Preventing Loss, Creating Momentum Framework. As the participating colleges released their strategies, JFF narrowed the list to the 10 recommended in this brief. Figure 2 displays the set of policies originally developed in support of the Completion by Design Framework, highlighting the policy areas outlined in this policy brief.



The brief:

- Outlines each policy recommendation;
- Describes why each policy recommendation is important in the context of Completion by Design and the participating colleges' strategies; and
- Describes the most recent research supporting each policy recommendation.

TEN HIGH-LEVERAGE POLICY RECOMMENDATIONS

POLICY RECOMMENDATION 1

CREATE STRUCTURED TRANSFER PATHWAYS BY IMPROVING TRANSFER AND ARTICULATION POLICIES

Completion by Design colleges seek to enroll more students in a small number of broad, well-structured program streams that help students choose a major over time. The colleges are mapping out structured transfer pathways with critical characteristics such as: program streams with clear academic requirements and well-defined electives; a commitment to student advising, scheduling, and degree planning; and programs that align with the requirements both for transferring to Bachelor's degree programs as a junior and for career advancement.

States can help colleges to build transfer pathways with several types of state support for improved transfer and articulation:

A COMMON TRANSFERABLE GENERAL EDUCATION CORE

A general education core is a useful foundation for transfer and articulation policy that delivers several benefits for students. A general education core supports student momentum by advising students to complete their general education mathematics and composition requirements in the first year, increasing the likelihood that they will stay enrolled and succeed in college. The core also provides statewide guidance on general education requirements, which helps colleges target appropriate requirements while limiting student accumulation of excess credits. The core also should bring to the table representatives from two- and four-year institutions and encourage a statewide conversation about transfer.

FACULTY-LED CURRICULAR ALIGNMENT FOR PARTICULAR PROGRAM AREAS

State incentives for collaboration between faculty from two-year and four-year institutions can further define and refine the general education core for particular program areas. A general education core provides a useful baseline of guidance but it also suffers from generality: Some of a community college student's general education courses might not apply to the requirements for a four-year institution's program. Faculty alignment of the core curriculum for specific program areas, coupled with early, frequent, and strong student advising, helps ensure that community college students take general education courses that transfer to a four-year institution's program, enabling students to transfer with junior standing in a major. Completion by Design colleges are beginning with refashioning their largest programs—typically liberal arts, business, or health sciences—and building core curricula for specific program streams that introduce students to a field and lead students to the goal of choosing a major.

TRENDS IN COMMUNITY COLLEGE REFORM AND RESEARCH POINT TO THE NEED FOR FEWER OPTIONS FOR STUDENTS AND MORE GUIDANCE AND STRUCTURE AS THEY NAVIGATE THEIR ACADEMIC EXPERIENCES.

INCENTIVES TO COMPLETE THE ASSOCIATE'S DEGREE BEFORE TRANSFERRING TO A FOUR-YEAR PROGRAM

There are several reasons to incent students to complete their Associate's degree before transferring, especially if there are clear rewards in place. There is some evidence that students who receive the Associate's

Create a foundation through a common general education core

Further define and refine the core for particular program areas through state support for faculty-led curricular alignment

Incent completion of the Associate's degree before transfer to a four-year program

INCENTIVE TO COMPLETE THE ASSOCIATE'S DEGREE

The Virginia Community College System encourages students to complete the Associate's degree through its Two-Year College Transfer Grant. Students who complete the degree with a GPA of 3.0 or above receive $1,000 per year for up to three years at any four-year institution in Virginia.

degree before transferring achieve better outcomes than students who transfer without. In addition, community colleges are less costly. Moreover, because there is no guarantee that students will complete a Bachelor's degree, it makes sense to get the Associate's degree, which delivers higher returns in the labor market than only completing some college courses. Incentives states can explore include:

- Creating scholarships that reward students who earn the Associate's degree before transfer;
- Requiring the Associate's degree if students wish to transfer with all of their general education credits;
- Establishing tuition incentives that encourage students to take more courses per term;
- Aligning Associate's degree requirements with those for junior standing;
- Generating automatic admission letters from four-year institutions without student application; and
- Guaranteeing that students who complete an Associate's degree at a community college can enroll in and earn a Bachelor's degree at a state four-year institution.

GENERAL EDUCATION CORE: DEFINITIONS AND EXAMPLES

Definitions of a general education core vary by state, but the goal always is to facilitate student transfer. Ideally, students who have completed the general education core at a community college have met all freshman and sophomore general education requirements when transferring to a four-year institution in the state. Many states are currently tweaking transfer policies. For example, Florida HB 7135, enacted in 2012, reduces general education requirements from 36 to 30 semester credit hours, while simultaneously adding a foreign language requirement to the core.

As another example, the current North Carolina Comprehensive Articulation Agreement sets the general education core at 44-semester hours, and specifically includes the following for the Associate's degree:

English Composition	6 semester hours
Humanities/Fine Arts	12 semester hours
Social/Behavioral Sciences	12 semester hours
Mathematics	6 semester hours
Natural Sciences	8 semester hours
Total	**44 semester hours**

RESEARCH TO SUPPORT THIS POLICY RECOMMENDATION

Many recent trends in community college reform and research point to the need for fewer options for students and more guidance and structure as they navigate their academic experiences (Scott-Clayton 2011a, 2011b; Jenkins & Cho 2012; Karp 2011; CCCSE 2012; Schwartz 2004). For example, Judith Scott-Clayton (2011b) concluded that lack of structure and too many academic options inhibit student progress and completion. Improving transfer and articulation policies can help states streamline course options and give students more guidance on the pathway to a credential.

A complementary body of research points to the importance of students' accumulating credits and declaring programs early; core curricula for program streams encourage both of these student actions. Longitudinal research by Clifford Adelman (1999, 2006) suggests that credit accumulation in the first year is a key determinant of student success. Davis Jenkins and Sung-Woo Cho (2012) found that students entering a program of study within a year of enrollment are far more likely to earn a credential. Another study found that students who meet core course admissions requirements are far more likely to graduate within six years than are transfer students with a deficiency in core requirements (Belieu 2010).

Some research suggests that students who receive the Associate's degree before transferring achieve better outcomes than students who transfer without. Data from the National Student Clearinghouse (2012) show that approximately 71 percent of students who transferred after receiving an Associate's degree earned their Bachelor's degree within four years, compared to about 54 percent of those who transferred without the Associate's. Descriptive statistics from the University of North Carolina suggest that students who transferred to the UNC system with an Associate's degree from the North Carolina Community College System performed better than their counterparts, who transferred with 24 credit hours, on outcomes such as first-year GPA, subject success, and percent of credit hours passed (UNC 2012; see also Ehrenberg & Smith 2002). Other evidence suggests, however, that getting an Associate's degree increases a student's chances of getting a Bachelor's degree only if there are clear incentives in place to finish the Associate's first, such as Florida's policy that students with an Associate's degree are guaranteed admission with junior standing at a state four-year institution (Cho 2012). More research is needed; however, as discussed earlier, there are reasons related to student costs and receipt of credentials that suggest that students should achieve an Associate's degree before transfer.

Florida's 2+2 articulation and transfer policy encourages community college students to earn a degree before transferring. Community college graduates who earn Associate of Arts degrees are guaranteed admission with junior standing at a state university, though not necessarily the university or major of their choice. In a study comparing descriptive statistics from six states, Florida had the highest rate of students who transferred to a four-year institution after earning an Associate's degree (69 percent), one of the lowest rates of students transferring before earning a degree (7 percent), and a relatively high rate of Associate's degree earners (Goldberger & Kazis 2009; JFF & the Achieving the Dream Cross-State Data Work Group 2008).

POLICY RECOMMENDATION 2

REDESIGN CTE PROGRAMS INTO MORE STRUCTURED PATHWAYS WITH CLEAR LABOR MARKET VALUE

Completion by Design colleges are analyzing both their transfer pathways and their career and technical education pathways. On the technical side, a priority will be to redesign curricula in ways that streamline course options, standardize core competencies, and align programs with labor market demands. Statewide curriculum alignment projects, run by faculty committees and also aligned with employer needs, can help all public colleges in a state move toward more structured CTE pathways with labor market value.

RESEARCH TO SUPPORT THIS POLICY RECOMMENDATION

As noted, an increasing focus of reform is based on the evidence that too many options and a lack of structure and advising inhibit progress for community college students (Scott-Clayton 2011a, 2011b; Jenkins & Cho 2012; Karp 2011; CCCSE 2012; Schwartz 2004). Efforts to streamline options, encourage students to declare programs early, and help them reach high-value credential milestones along the pathway to graduation all reflect this trend in community college reforms.

Experience with career pathways and career ladders can help shape the thinking about student pathways in the community college. For example, as the League for Innovation in the Community College (2006) noted, the key is ensuring that student pathways are coherent, articulated, sequenced, and rigorous. A brief issued by the U.S. Department of Labor's Employment and Training Administration similarly reported that successful career pathways programs partner with industry and employers in program development and that they create "incremental" pathways—"a mix of short-term, moderate-term, and long-term training [that] maximizes participation while promoting job growth" (Gash & Mack 2010).

The impetus for structuring transfer and CTE pathways is the same, but there are some important differences in execution. On the CTE side, for example, there is a stronger focus on creating stackable credentials that allow students to exit and return to the community college system at multiple points, with valuable credentials in hand. There is also a stronger focus on aligning programs with industry-recognized skills and workforce demands.

"FOR MANY STUDENTS AT COMMUNITY COLLEGES, FINDING A PATH TO DEGREE COMPLETION IS THE EQUIVALENT OF NAVIGATING A SHAPELESS RIVER ON A DARK NIGHT."
—JUDITH SCOTT-CLAYTON, IN *THE SHAPELESS RIVER*

While the movement toward stackable credentials seems sensible, the research base is thin. A Center on Education and the Workforce report found that among students holding both an Associate's degree and a certificate, 62 percent earned the certificate on the pathway to the degree. The report concluded, "Certificates can be both a stepping-stone to more education for some and an added skill credential for those who already have a college degree" (Carnevale, Rose, & Hanson 2012). However, the year before, the Institute for Higher Education Leadership & Policy noted, "It is not apparent—from either the recent research or more generally from institutional accountability data—whether short-term certificates actually serve as building blocks for longer-term ones" (Moore 2011).

North Carolina's community colleges are implementing new, structured pathways to postsecondary degrees as part of a recent Curriculum Improvement Project. The Code Green Super CIP is the largest Curriculum Improvement Project the North Carolina Community College System has ever undertaken; it resulted in a sweeping review of the career and technical education curriculum. The CIP engaged more than 200 faculty members from across the 58-college system in aligning core technical skills and competencies for program groups, resulting in a more streamlined approach to in-demand degrees and nationally recognized certifications. Outcomes include: 80 curriculum standards consolidated into 32; the elimination of 92 courses, the addition of 47 courses, and the revision of 219 courses; as well as the creation of nationally recognized, stackable credentials for students. North Carolina's approach is an example of a process marked by faculty ownership, a focus on streamlining and reducing redundancies, and a goal of imbuing students with the skills needed for high-demand jobs.

POLICY RECOMMENDATION 3

SUPPORT STRUCTURED PATHWAYS WITH BETTER USE OF LABOR MARKET INFORMATION AND PROGRAM-LEVEL DATA

Completion by Design defines student success to include success in the labor market, and student entry into and persistence in programs of study will be a driving focus for the initiative going forward. These crucial concerns elevate the need for improvements in data use.

As colleges design programs of study, they must keep employer needs in mind, mapping backward from high-quality and up-to-date labor market information. Advisors also need better labor market information to provide students with meaningful information on both how to pursue their career interests and how their choice of program connects to the labor market. To those ends, states need to collect, analyze, and disseminate the most up-to-date labor market information available and support its use by colleges and students. States can support their colleges by:

- Integrating data systems across sectors to include workforce and Unemployment Insurance data;
- Connecting with the latest technologies that support the collection and use of real-time labor market information in program and curriculum design as well as in student advising and choice; and
- Providing professional development to counselors to ensure they know how to use real-time labor market information effectively when advising students.

To assess the improvements brought about by Completion by Design interventions, and to provide students with regular feedback on their progress toward credentials, states will need to improve their ability to track student characteristics and outcomes by program. Most states have some capability in this area, but all need to bolster their systems and capacity for analysis to be ready to support colleges in using data to understand the results of strategies. For example, collecting and analyzing accurate program-of-interest data will be a critical first step for many states.

RESEARCH TO SUPPORT THIS POLICY RECOMMENDATION

New tools and technologies are emerging that collect and analyze real-time job openings posted on the Internet. When coupled with government and business-issued data about labor market demand, these "real-time data" can provide community colleges with improved information and guidance about what skills employers need, how academic programs should align with current demand, and how counselors and advisors should work with students to target credentials that help them fulfill their career interests (Altstadt 2011; see also Dorrer & Milfort 2012).

"STUDENT-LEVEL DATA SHINE A LIGHT ON WHAT IS WORKING, SO DECISIONS AT ALL LEVELS ARE INFORMED BY HIGH-QUALITY DATA AIMED AT IMPROVING THE ACHIEVEMENT OF EVERY STUDENT."—DATA QUALITY CAMPAIGN, IN *DATA: THE MISSING PIECE TO IMPROVING STUDENT ACHIEVEMENT*

As just one example, after many years of implementing the Carl D. Perkins Career and Technical Education Act of 2006, the U.S. Department of Education has concluded that one limiting factor in the effectiveness of Perkins-funded structured pathways that span secondary and postsecondary education is a lack of alignment between CTE programs and local workforce and economic needs. The department has called for a new role for states in determining which programs they should fund based on data about high-demand, high-growth occupations (U.S. Department of Education 2012).

Finally, a large body of research points to the need for good data on student outcomes—including in employment and further education—to inform decision making. This is critical for enabling state and college leaders and faculty to examine the results of interventions and innovations and make needed changes (see, for example, Data Quality Campaign 2011; Offenstein & Shulock 2010; JFF & the Achieving the Dream Cross-State Data Work Group 2008).

POLICY RECOMMENDATION 4

BUILD **DIRECT ROUTES** TO COLLEGE OPPORTUNITIES THROUGH STRATEGIES SUCH AS DUAL ENROLLMENT, EARLY COLLEGE, AND CONTEXTUALIZED BASIC SKILLS INSTRUCTION

For structured pathways to be effective, the postsecondary community has a strong role to play in finding effective ways of preparing students academically for college, and helping students to make effective choices about programs and careers. Completion by Design colleges are building routes to college that are tailored to helping student subgroups (e.g., recent high school graduates, Adult Basic Education students, GED students) bridge into particular program streams (e.g., business, liberal arts, health sciences) and advance through a core curriculum to the selection of a major. For example, some Completion by Design colleges are making strategic investments in dual enrollment programs that prepare students coming from high school for the rigor of college-level work, build college know-how, and help students accumulate postsecondary credit early. Also, many colleges are contextualizing basic skills instruction that prepares Adult Basic Education students to move directly to college work, bypassing developmental education.

States can support college efforts to build routes to college through a number of policy efforts. These include, among others, building and investing in dual enrollment programs, summer bridge sessions, early assessment and remediation programs, early college experiences, and contextualized basic skills instruction.

RESEARCH TO SUPPORT THIS POLICY RECOMMENDATION

Researchers and program participants tend to agree that these interventions are promising, although the research on their effectiveness varies in both rigor and results. More studies are underway.

A Community College Research Center (2012) overview of research on dual enrollment reported that student participation in dual enrollment is positively related to a number of improved academic outcomes, including higher GPA, more credit accumulation, and higher rates of college enrollment and persistence (see also Hughes et al. 2012). Two recent studies in Texas showed similar results. Dual enrollment students at the University of Texas-Pan American had a 49 percent four-year graduation rate, compared with 14 percent for the total student body. Transfer students at UTPA who had experienced dual enrollment also had higher GPAs than traditional transfers (HCM Strategists 2012). Researchers at UT Austin and JFF (Struhl and Vargas 2012) found that Texas students who participated in dual enrollment programs were over twice as likely to enroll in a Texas college and nearly twice as likely to graduate from a Texas college. The study used a research methodology that addressed issues of "selection bias" that often make it difficult to study dual enrollment participants.

The data on summer bridge programs are encouraging although less clear. An experimental design evaluation of eight summer bridge programs in Texas, which provide intensive, accelerated instruction typically during the summer between high school and college, found evidence that participating students were more likely to pass college-level courses in math and writing in the fall semester after involvement than their peers who did not participate (Wathington et al. 2011). Non-experimental research on summer bridge programs has concluded that the programs have a positive impact on students' study skills and college readiness (Rutschow & Schneider 2011).

Research on two programs suggests that early assessment programs can improve student outcomes. Such programs let high school students know if they are ready for college-level work. Early identification of academic deficiencies gives them time to improve their skills before entering college. A quasi-experimental analysis of California's Early Assessment Program at California State University, Sacramento, found that EAP students were 6.1 percent less likely to need developmental English and 4.1 percent less likely to need developmental math. An internal evaluation of El Paso Community College's College Readiness Initiative reported that early assessment enabled 2 percent more students to place into college-level math, and 15 percent more students to place into college-level writing (Rutschow & Schneider 2011).

Early college experiences seek to combine the last years of high school with the first years of college, with two goals in mind: increasing academic rigor, thereby introducing students to college-level work; and decreasing the time and cost required to complete high school and the early years of college. JFF's Early College High School Initiative reported a median four-year graduation rate in 2011-12 of 92 percent for students at early colleges, compared with 76 percent for the school's broader districts. Fifty-six percent of the early college graduates in 2010-11 had earned at least two years of college credit at the same time as their high school diploma (JFF 2012). *(For more information, see www.jff.org/earlycollege.)*

Completion by Design seeks to help both recent high school graduates and Adult Basic Education students succeed in college. As a result, bridges from ABE are equally important as better pathways from secondary to postsecondary. Contextualized basic skills instruction, as discussed in recommendation 6 (*see page 17*), is a promising route for encouraging adults in need of basic skills to enter credit-bearing courses earlier (Jenkins, Zeidenberg, & Kienzl 2009; Rutschow & Schneider 2011). *(For more information, see www.acceleratingopportunity.org/about/background.)*

POLICY RECOMMENDATION 5

IMPROVE **ASSESSMENT AND PLACEMENT** POLICIES, INCLUDING CONSIDERATION OF MULTIPLE MEASURES

As Completion by Design colleges grapple with how to create on ramps into structured pathways, they consistently return to the belief that they need better means of assessing students' college readiness and determining appropriate student placement in courses. A strong start for students, in the right courses with the right supports, is a critical first step into a well-structured pathway. States can support their colleges by:

- Allowing and supporting colleges to use multiple measures of assessment for determining college readiness and placement for entering students (e.g., using high school transcripts as well as placement test scores);
- Supporting students in reviewing and preparing for placement tests; and
- Contracting for better assessment instruments and watching the development of diagnostics.

A number of states and colleges, including Connecticut, North Carolina, and Long Beach City College (California), are looking at implementing multiple measures for placement. In collaboration with its Completion by Design colleges, the North Carolina Community College System is considering changes to its placement and assessment policies that would establish a high school GPA threshold that indicates a student's college readiness. Students with a GPA below the threshold would be placed based on a diagnostic assessment plus other measures.

RESEARCH TO SUPPORT THIS POLICY RECOMMENDATION

Research suggests that existing placement instruments alone are not good predictors of student success in college, and that other measures, such as GPA, can work as well if not better for determining student placement (Belfield & Crosta 2012; Scott-Clayton 2012). Research also shows that placement practices vary dramatically among colleges, and that students do not understand the high stakes attached to their performance on placement tests (Hughes & Scott-Clayton 2011; Venezia, Bracco, & Nodine 2010).

This research, when combined with increasing questions about the effectiveness of developmental education, has cast doubt upon the entire enterprise of assessment and placement (Burdman 2012). Many colleges and states are experimenting with new approaches to ensure that they do not place students into developmental education needlessly. Experts recommend that states and colleges consider using multiple measures for student placement, and also that they ensure students understand the implications of placement testing and are allowed to prepare (see also RP Group 2007).

POLICY RECOMMENDATION 6

REDUCE, ACCELERATE, AND CONTEXTUALIZE DEVELOPMENTAL EDUCATION

The national debate over developmental education reform focuses on finding models that dramatically overhaul developmental education—or even reduce or eliminate it altogether. Around the country, colleges and state systems are experimenting with redesigning developmental education in ways that affect both how long it takes students to complete remedial courses (time) and how content is delivered (structure). Completion by Design colleges similarly focus on moving underprepared students more quickly into college-level coursework and credit-bearing programs.

States can support the efforts of colleges to test new models that:

- Improve college preparation and reduce the need for developmental education;
- Reduce the placement of students who are near "college ready" into developmental education, instead placing them in college-level courses while providing them with adequate supports;
- Accelerate the acquisition of basic skills; and
- Contextualize basic skills instruction.

RESEARCH TO SUPPORT THIS POLICY RECOMMENDATION

A growing body of research points to the ineffectiveness of developmental education as it stands (Bailey 2009; Calcagno & Long 2008; Moore & Shulock 2009; Scott-Clayton & Rodriguez 2012). As a result, there is growing experimentation with, and research on, models that reduce the need for developmental education and accelerate and contextualize the acquisition of basic skills. Strategies that seek to move students more quickly into credit-bearing courses, referred to as acceleration, are showing increases in student achievement.

A leading model is the Accelerated Learning Program at Community College of Baltimore County. ALP is often referred to as a "co-requisite" program because it places developmental-level students into college-level English composition—instead of into developmental education as a prerequisite—while providing extra supports through an hour-long companion course. Results from a CCRC quasi-experimental study found that 82 percent of ALP students passed the introductory college-level course (English 101) within one year, compared with 69 percent of non-ALP students in the upper-level developmental writing course (English 052) (Jenkins et al. 2010; see also Rutschow & Schneider 2011).

At Chabot College, a cornerstone of the California Acceleration Project, students self-place into either a two-semester developmental sequence or an accelerated one-semester course that integrates reading and writing. The Acceleration Project reports that students in the accelerated courses achieve significantly higher completion rates of college-level English than students who take the traditional, longer developmental education sequence (Hern 2011).

Washington State's Integrated Basic Education and Skills Training (I-BEST), which combines basic skills and occupational training in the same courses, is considered a pioneer in contextualized instruction for adults. Quasi-experimental studies have found that I-BEST students complete more credits, have higher persistence rates, and are more likely to earn a certificate than their peers (Jenkins, Zeidenberg, & Kienzl 2009; see also Rutschow & Schneider 2011).

POLICY RECOMMENDATION 7

SUPPORT STRONG COLLEGE **ADVISING, ORIENTATION, AND STUDENT SUCCESS COURSES**, INCLUDING ADVISING THAT ENCOURAGES EARLY ENTRY INTO A PROGRAM STREAM THAT LEADS TO A MAJOR

Increasing student success in community colleges is not just an academic endeavor. Structured pathways in particular require a heightened level of student services that facilitate student entry into and progress through programs of study. Effective structured pathways call for strong student supports that:

- Counsel students in exploring their college and career goals and understanding the requirements for academic and career success;
- Help students early in their academic careers choose among a small number of broad program streams that are designed to help them choose a major;
- Help students understand outcomes—including career results—for different programs of study;
- Help students navigate the college experience and make use of student support services; and
- Keep students enrolled as they encounter obstacles.

Advising, orientation, and success courses are typically the domain of colleges, but states can support colleges by helping them research the effectiveness of innovations, disseminating research results, offering professional development for student services, and appropriating funds to models that work. States can also support other colleges in adopting innovations.

Further, states can support colleges by issuing guidance or implementing policies that encourage students to declare a program once they reach a certain milestone, such as 24 or 30 credit hours. This policy also promotes the spread of Completion by Design principles to other colleges. In 2006, the Florida College System Council of Presidents established a guideline calling for institutions to provide advisement to students who reached 24 credits without declaring a major. While that guideline was not well enforced, 2012 legislation (HB 7135) strengthens the policy. It requires that all Florida College System students seeking an Associate's degree specify a Bachelor's degree program offered by an institution of interest by the time they earn 30 semester hours. Colleges must advise students on their requirements for completion and transfer at that time as well.

RESEARCH TO SUPPORT THIS POLICY RECOMMENDATION

CCRC research suggests that students who enroll in student success courses during the first semester of college are more likely to earn college credits in the first year and to persist to a second year (Cho & Karp 2012). Those findings build upon earlier research revealing that students enrolled in Florida's Student Life Skills courses were more likely to persist in college, attain a credential, and transfer to a four-year Florida state university (Zeidenberg, Jenkins, & Calcagno 2007; see also CCCSE 2012 and Karp 2011).

In a literature review, the RP Group (2007) concluded that mandatory orientation is a characteristic of highly effective developmental education programs. Colleen Moore and Nancy Shulock (2009) similarly found that the research strongly suggests that early student supports result in better student outcomes.

In *Get With the Program*, Davis Jenkins and Sung-Woo Cho (2012) reported that students entering a program within a year of enrollment are far more likely to earn a credential. They found that 50 percent of students who entered a liberal arts and sciences program transferred, earned a Bachelor's degree, or earned a certificate or Associate's degree within five years, compared with 31 percent of the entire cohort. They also found that students who entered a program in their first year were far more likely to graduate than students who entered a program in their second year. Jenkins and Cho drew upon a study concluding that lack of structure and too many academic options inhibit progress and completion for community college students (Scott-Clayton 2011b).

INNOVATIONS IN ORIENTATION AND COUNSELING

Cuyahoga Community College reports a 72 percent fall-to-spring retention rate for participants in its new in-person student orientation program, compared with 42 percent for non-participants. The program includes a required counseling session (Achieving the Dream 2011).

A number of studies on K-12 similarly conclude that students benefit from coherence and alignment of everything from assessments to curricula, classroom practices, and student supports (Jenkins 2011). There are also lessons stemming from aligning secondary and postsecondary academic programs with career and technical education standards, leading to postsecondary certificates or degrees (e.g., those funded by the Carl D. Perkins Career and Technical Education Act). Though it is still too early for longitudinal studies to uncover significant improvements in student outcomes, recent efforts by six states to implement rigorous programs of study for Perkins suggest a variety of benefits: enhanced collaboration between K-12 and higher education; heightened student awareness of career options; and improved data analysis, among others (Hyslop 2012).

FIGURE 3.
RESEARCH CATEGORIZATIONS

Borrowing from the research categorizations used by Elizabeth Zachry Rutschow & Emily Schneider (2011), the goal here is to indicate when the research presented offers strong evidence based on rigorous research, and when the research shows promising or suggestive trends that require further research. This policy brief relies upon the best research available, recognizing that we have to work with imperfect information as we navigate reforms. Figure 3, from Rutschow and Schneider, describes in detail their classifications for "standards of evidence."

	TYPE OF EVALUATION	MEANS OF COMPARISON	CHARACTERISTICS OF COMPARISON GROUP	STRENGTHS OF RESEARCH DESIGN	LIMITATIONS OF RESEARCH DESIGN
RIGOROUS RESEARCH					
Experimental research	Randomized control trial	Sample randomly assigned to either a program group that receives the program or a control group that does not participate in the program	Equivalent to program participants, including unobservable characteristics such as motivation	Equivalent program and control groups; controls for background characteristics	Difficult to generalize to other groups and settings
Quasi-experimental research	Regression discontinuity analysis	Group just above strictly defined cutoff (such as score on assessment test) compared with group just below cutoff	Extremely similar as a result of selection method, including unobservable characteristics such as motivation	Equivalent program and control groups	Only able to detect differences for groups near the cutoff point
	Statistically equated control evaluation	Program group compared with students at similar level of developmental need	Controlled for with statistical procedures such as multivariate regression	Observable differences in characteristics equalized through statistical measures	Does not control for unobservable characteristics such as motivation
PROMISING TRENDS					
Descriptive statistics	Time-series analysis	Outcomes for program group compared with statistically predicted outcomes for same group without the program	NA	Background characteristics equivalent	Comparison outcomes predicted, not actual; requires large sample for validity
	Matched control study (simple comparison)	Program group compared with historical or current students at similar level of developmental need	Observably similar but no controls for variation in individual characteristics	Simple comparison group	Does not control for background characteristics
	Before-and-after study	Outcomes (such as score on assessment test) before and after the program measured for same group of students	NA	Shows growth over course of time	No comparison group to analyze relative effectiveness of program

CONFIDENCE IN MEASURED EFFECTS WITH STRONG RESEARCH DESIGN

Source: Rutschow & Schneider (2011)

POLICY RECOMMENDATION 8

INVEST IN PROFESSIONAL DEVELOPMENT TO PREPARE FACULTY FOR PEDAGOGICAL AND CURRICULAR CHANGES AND PROMOTE FACULTY LEADERSHIP IN THE REFORM PROCESS

Completion by Design seeks to reform existing community college practices and policies dramatically, inside and outside of the classroom. Engaging faculty as leaders of reform, and ensuring they receive professional development to improve pedagogy and student supports, will be critical to the success of structured pathways for students. One of the most significant challenges for the colleges themselves will be to reach out to faculty members consistently and purposefully in ways that help them understand the need for reform, take leadership roles, and learn new techniques and strategies for teaching and interacting with students. States have an important role to play in supporting colleges and their faculty through:

- Investing in professional development;
- Selecting faculty to serve in leadership roles for reform efforts;
- Hosting statewide faculty development meetings that reinforce the colleges' efforts; and
- Connecting faculty across the state through technology and other venues.

RESEARCH TO SUPPORT THIS POLICY RECOMMENDATION

The college completion agenda calls for significant changes to teaching and to students' learning experiences, which means that those in the classroom—the faculty—are best positioned to take strong leadership roles. Research on high-performing organizations consistently points to the need for frontline employees to understand and embrace change, while studies of the slow rate of change in higher education point to the need to do a better job of communicating with and empowering faculty (Bacow et al. 2012; Jenkins 2011; Public Agenda 2010).

Other higher education reform initiatives—and their evaluations—support this proposition. For example, the interim evaluation of Achieving the Dream emphasized that the participating colleges needed to include more faculty in leadership roles, concentrate more directly on improving instruction, and do a better job of engaging adjuncts (Rutschow et al. 2011). Increasingly, student success initiatives are targeting faculty leadership as the critical next step in reform (Achieving the Dream and Public Agenda 2011, 2012; Altstadt 2012; Public Agenda 2010). As a recent Achieving the Dream press release stated:

> Nationwide, while great strides have been made at community colleges for student success, the proportion of faculty (including adjunct faculty) and student services personnel deeply engaged in the work is modest compared to the total number of faculty and staff at the colleges. Further, the reform work has not yet eliminated the disconnections between academic departments and student services that limit vital collaboration (Achieving the Dream 2012).

POLICY RECOMMENDATION 9

LEVERAGE TECHNOLOGY TO SUPPORT INDIVIDUALIZED STUDENT PLANNING, TRACKING, DEGREE AUDIT, AND EARLY WARNING SYSTEMS

Completion by Design colleges seek ways to help students plan for and track their progress through credentials. Emerging technological solutions, often referred to as Learner Relationship Management Systems, offer online, automated means of providing faculty, advisors, and students with information on students' educational plans, progress toward completion, and challenges.

However, the technology is expensive, so states can help colleges by researching these solutions. They can also consider implementing systems across the state, thereby creating efficiencies of scale, minimizing the cost and effort for individual colleges and helping to scale up Completion by Design lessons to other colleges.

RESEARCH TO SUPPORT THIS POLICY RECOMMENDATION

Research suggests that students are more likely to complete a course and persist in college if the college makes students aware of their academic difficulties as soon as they arise (CCCSE 2012). In addition, the Pathways to College Network found that the most successful student retention efforts are "proactive and intrusive," deliberately reaching students who are least likely to seek out supports on their own (Myers 2003). Melinda Mechur Karp (2011) similarly concluded that activities that clarify student aspirations and develop college know-how make student success more likely. The research of Scott-Clayton (2011b) supports this vein of thought, finding that students are more likely to persist and complete if they choose from tightly defined, structured programs of study.

These findings suggest that technology solutions that assist with student planning and tracking make good sense. However, WestEd and the RP Group (2012a) note the lack of strong empirical research showing improved student outcomes stemming from automated degree audits and online education plans. Still, in this economic environment, labor-intensive solutions that require hiring more advisors are unlikely. Continued experimentation with cost-effective and scalable technological solutions, implemented with evaluation in mind, is necessary (WestEd & RP Group 2012b).

Valencia College's LifeMap (Florida) is one of the better known examples of a technology-supported means of providing students with access to wide-ranging supports. Through a single online portal, students can access labor market information, financial, career, and educational planning tools, and much more. As a result of LifeMap's multiple supports, fall-to-fall persistence increased from 58.5 percent in 2001-02 to 67 percent in 2007-08 for first-time students (WestEd & RP Group 2012b). Sinclair Community College offers a similar system, My Academic Plan. Using MAP, students and advisors can develop individual academic plans and then track progress toward completion. Sinclair is a member of the Completion by Design Ohio cadre, and other Completion by Design colleges are considering adapting MAP to their campuses.

KARP CONCLUDED THAT ACTIVITIES THAT CLARIFY STUDENT ASPIRATIONS AND DEVELOP COLLEGE KNOW-HOW ENCOURAGE STUDENT SUCCESS.

POLICY RECOMMENDATION 10

DESIGN FINANCIAL AID TO ENCOURAGE AND REWARD STUDENT PROGRESS

Keeping students motivated, engaged, and able to progress is critical for completion, yet the field has few proven tools and strategies at its disposal that target improved student persistence specifically. Financial aid policies designed to encourage progress—often referred to as performance-based scholarships—offer a lever that is receiving growing attention because it shows some promise for motivating students to continue their studies.

Emergency aid—available to students when they most need it—is another tool for helping students maintain progress in the face of inevitable changes in circumstances. Financial emergencies are a top reason cited by community college students for dropping out; emergency aid that encourages students to stay enrolled even during tough times might reduce attrition.

RESEARCH TO SUPPORT THIS POLICY RECOMMENDATION

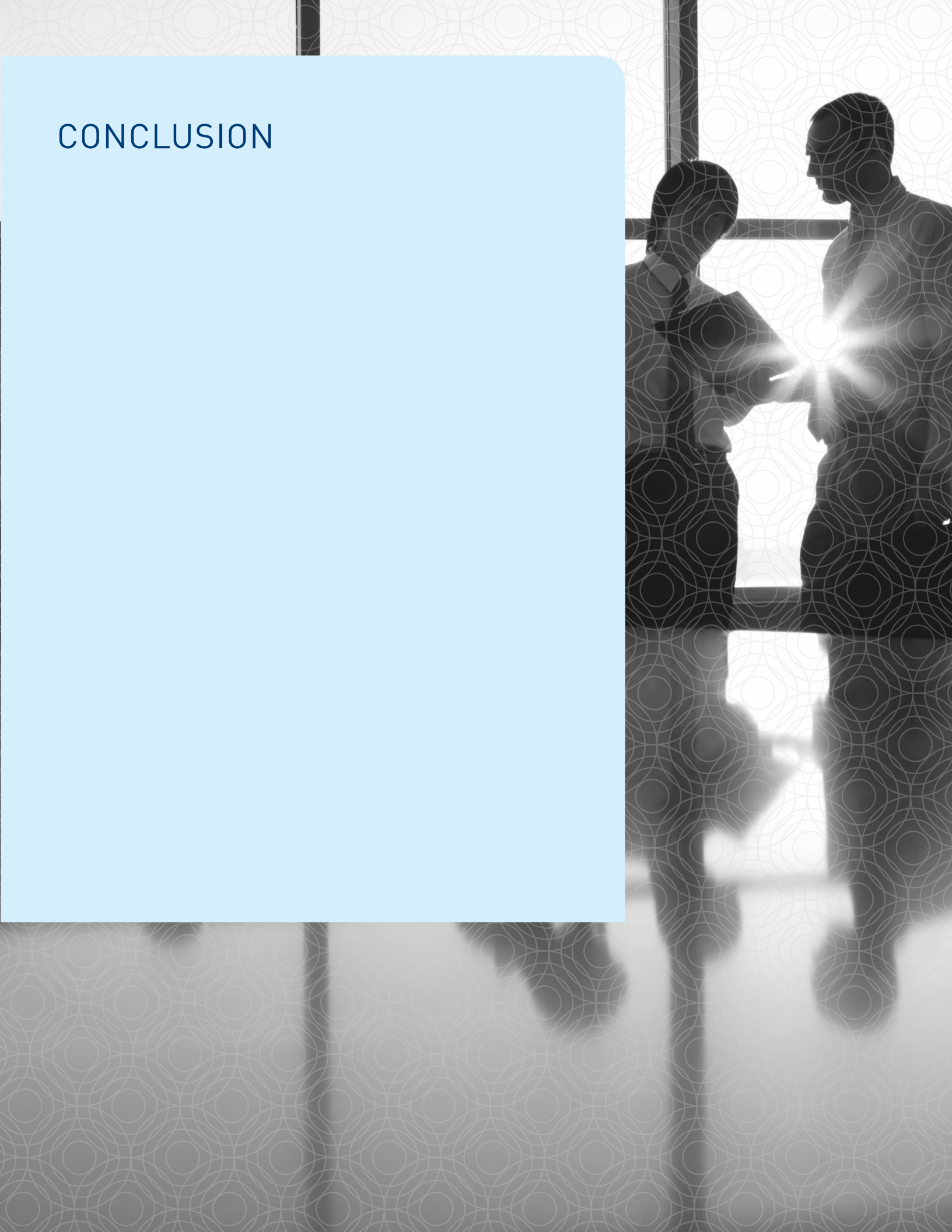
An MDRC experimental design study on Opening Doors, a performance-based scholarship program in Louisiana, showed promising results. Through Opening Doors, working mothers who were recipients of Temporary Assistance to Needy Families received counseling and $1,000 for two semesters if they enrolled at least half time and maintained an average grade of C or better. MDRC found positive outcomes among scholarship recipients—for example, they passed more courses, earned more credits, and were more likely to stay in college in later semesters (Brock & Richburg-Hayes 2006). A follow-up study on performance-based scholarships in New Mexico, New York, and Ohio found increases in full-time enrollment and credits attempted and earned, as well as reduced loan debt; outcomes for student persistence were mixed (Patel & Richburg-Hayes 2011; see also Hashmi 2012). Most of these studies suggest modest improvements, but based on extensive analysis, MDRC maintains that "performance-based scholarships can improve some important components of academic success." MDRC is running an extensive demonstration project designed to test the most effective approaches to the scholarships (Ware & Patel 2012).

The Washington Opportunity Grant, a need-based grant program, targets low-income adults who are training for high-wage, high-demand careers. Students must maintain a 2.0 GPA to be eligible for the grants, which may cover anything from tuition and books to emergency transportation and child care. The program's fall-to-spring retention rate has remained near 80 percent over the past four years (SBCTC 2011).

"THE GOAL OF THE OPPORTUNITY GRANT IS TO HELP LOW-INCOME ADULTS REACH THE EDUCATIONAL TIPPING POINT—AND BEYOND—IN HIGH-WAGE, HIGH-DEMAND CAREERS."—WASHINGTON STATE BOARD FOR COMMUNITY AND TECHNICAL COLLEGES, 2011

Dreamkeepers, an emergency aid scholarship program, reports that 84 percent of its recipients either reenrolled the following term or graduated in 2008. *(For more information, see: http://dreamkeepers.org/impact.html.)* MDRC research also found that both administrators and aid recipients believe that emergency aid helped students stay in college (Geckeler et al. 2008).

CONCLUSION



Building on the Tale of Two Terrys, the policy component of Completion by Design seeks to give the colleges in a state access to the resources, expertise, and support they need in order to provide many more students with structured pathways experiences. The hope is that Terry 2.0 and her peers will complete their degrees or transfer in a timely manner supported by state-level actions that facilitate critical experiences such as:

- Co-requisite or contextualized basic skills instruction that accelerates student entry into credit-bearing courses;
- Structured programs of study designed to align with requirements for transfer and local labor market needs;
- Strong academic and career advising;
- Student monitoring and regular feedback on student progress; and
- Student activities and supports designed to improve college-going skills, reward progress, and encourage persistence.

As of late 2012, state policy teams in Florida, North Carolina, and Ohio are entering the implementation phase of Completion by Design and have developed policy priorities that reflect local context and conditions. As the Completion by Design National Assistance Team partner for state policy, JFF will continue to follow state and college experiences and results. We will update this framework to reflect the latest developments across colleges and states participating in this ambitious initiative. And we will collaborate with states to spread the ideas and learning from Completion by Design to other colleges.

POLICIES TO SUPPORT STRUCTURED PATHWAYS

KEY POLICIES SUPPORTING COMPLETION BY DESIGN FRAMEWORK

CONNECTION	ENTRY	PROGRESS	COMPLETION
From Interest to Enrollment	From Enrollment to Entry into Program of Study	From Program Entry to Completion of Program Requirements	Completion of Credential of Value for Further Education and (for CTE) Labor Market Advancement
Build direct routes to college opportunities through strategies such as dual enrollment, early college, and contextualized basic skills instruction Improve assessment and placement policies, including consideration of multiple measures	Support strong college advising, orientation, and student success courses, including advising that encourages early entry into a program stream that leads to a major Reduce, accelerate, and contextualize developmental education Invest in professional development to prepare faculty for pedagogical and curricular changes and promote faculty leadership in the reform process	Leverage technology to support individualized student planning, tracking, degree audit, and early warning systems Design financial aid to encourage and reward student progress	Create structured transfer pathways by improving transfer and articulation policies Redesign CTE programs into more structured pathways with clear labor market value Support structured pathways with better use of labor market information and program-level data

APPENDIX: ALIGNMENT BETWEEN THE COMPLETION BY DESIGN PATHWAY DESIGN PRINCIPLES AND THE POLICY RECOMMENDATIONS

To ensure that state-level policy efforts support the initiative's college-level reforms, Jobs for the Future used the Completion by Design Pathway Design Principles as driving factors as we identified the policy recommendations detailed in this report. The tables below "cross walk" the Design Principles with the policy recommendations in an effort to demonstrate the complexity of how each supports and aligns with the other. These policy recommendations are not meant to be prescriptive nor exhaustive. There is not a one-to-one relationship between the colleges' practices and state policy.

TABLE 1.

ALIGNMENT BASED ON POLICY RECOMMENDATION

POLICY RECOMMENDATION	PATHWAY DESIGN PRINCIPLES SUPPORTED BY THIS POLICY RECOMMENDATION	POLICY GOALS
1. Create structured transfer pathways by improving transfer and articulation policies	Design Principle 1: Accelerate entry into coherent programs of study Design Principle 3: Ensure students know requirements to succeed	Support structured transfer pathways that have clearly defined learning goals and align with the requirements for transfer with junior standing in chosen major and with labor market demands
2. Redesign CTE programs into more structured pathways with clear labor market value	Design Principle 1: Accelerate entry into coherent programs of study Design Principle 3: Ensure students know requirements to succeed	Support structured CTE pathways that have clearly defined learning goals and align with labor market demands
3. Support structured pathways with better use of labor market information and program-level data	Design Principle 1: Accelerate entry into coherent programs of study Design Principle 3: Ensure students know requirements to succeed Design Principle 6: Continually monitor student progress and proactively provide feedback	Help states and colleges align programs of study with labor market demands and to counsel students on the most promising opportunities
4. Build direct routes to college opportunities through strategies such as dual enrollment, early college, and contextualized basic skills instruction	Design Principle 1: Accelerate entry into coherent programs of study Design Principle 2: Minimize time required to get college ready	Help students improve college readiness, explore college and career goals, choose a program area of interest, and accelerate student entry into college-level, credit-bearing courses
5. Improve assessment and placement policies, including consideration of multiple measures	Design Principle 1: Accelerate entry into coherent programs of study Design Principle 2: Minimize time required to get college ready Design Principle 3: Ensure students know requirements to succeed	Ensure that students are properly assessed and placed, giving them the opportunity to enroll in programs of study as soon as possible
6. Reduce, accelerate, and contextualize developmental education	Design Principle 2: Minimize time required to get college ready Design Principle 4: Customize and contextualize instruction	Dramatically improve student outcomes in developmental education
7. Support strong college advising, orientation, and student success courses, including advising that encourages early entry into a program stream that leads to a major	Design Principle 1: Accelerate entry into coherent programs of study Design Principle 3: Ensure students know requirements to succeed Design Principle 5: Integrate student supports with instruction Design Principle 6: Continually monitor student progress and proactively provide feedback	Ensure that students are advised in ways that help them explore college and career goals, choose and declare a program area of interest, and develop a completion plan Students regularly and systematically receive supports (e.g., advising, study skills orientation)
8. Invest in professional development to prepare faculty for pedagogical and curricular changes and promote faculty leadership in the reform process	Design Principle 2: Minimize time required to get college ready Design Principle 4: Customize and contextualize instruction Design Principle 5: Integrate student supports with instruction	Encourage and support professional development that helps faculty make systemic changes in curricula and instruction and promotes faculty leadership in reform
9. Leverage technology to support individualized student planning, tracking, degree audit, and early warning systems	Design Principle 6: Continually monitor student progress and proactively provide feedback Design Principle 8: Leverage technology to improve learning and program delivery	Support mechanisms for monitoring student progress toward meeting requirements, providing just-in-time feedback and support
10. Design financial aid to encourage and reward student progress	Design Principle 7: Reward behaviors that contribute to completion	Provide rewards that encourage student progress toward completion

TABLE 2.

ALIGNMENT BASED ON DESIGN PRINCIPLE

COMPLETION BY DESIGN PATHWAY DESIGN PRINCIPLES	POLICIES THAT SUPPORT EACH DESIGN PRINCIPLE
Design Principle 1: Accelerate entry into coherent programs of study	1. Create structured transfer pathways by improving transfer and articulation policies 2. Redesign CTE programs into more structured pathways with clear labor market value 3. Support structured pathways with better use of labor market information and program-level data 4. Build direct routes to college opportunities through strategies such as dual enrollment, early college, and contextualized basic skills instruction 5. Improve assessment and placement policies, including consideration of multiple measures 7. Support strong college advising, orientation, and student success courses, including advising that encourages early entry into a program stream that leads to a major
Design Principle 2: Minimize time required to get college ready	4. Build direct routes to college opportunities through strategies such as dual enrollment, early college, and contextualized basic skills instruction 5. Improve assessment and placement policies, including consideration of multiple measures 6. Reduce, accelerate, and contextualize developmental education 8. Invest in professional development to prepare faculty for pedagogical and curricular changes and promote faculty leadership in the reform process
Design Principle 3: Ensure students know requirements to succeed	1. Create structured transfer pathways by improving transfer and articulation policies 2. Redesign CTE programs into more structured pathways with clear labor market value 3. Support structured pathways with better use of labor market information and program-level data 5. Improve assessment and placement policies, including consideration of multiple measures 7. Support strong college advising, orientation, and student success courses, including advising that encourages early entry into a program stream that leads to a major
Design Principle 4: Customize and contextualize instruction	6. Reduce, accelerate, and contextualize developmental education 8. Invest in professional development to prepare faculty for pedagogical and curricular changes and promote faculty leadership in the reform process
Design Principle 5: Integrate student supports with instruction	7. Support strong college advising, orientation, and student success courses, including advising that encourages early entry into a program stream that leads to a major 8. Invest in professional development to prepare faculty for pedagogical and curricular changes and promote faculty leadership in the reform process
Design Principle 6: Continually monitor student progress and proactively provide feedback	3. Support structured pathways with better use of labor market information and program-level data 7. Support strong college advising, orientation, and student success courses, including advising that encourages early entry into a program stream that leads to a major 9. Leverage technology to support individualized student planning, tracking, degree audit and early warning systems
Design Principle 7: Reward behaviors that contribute to completion	10. Design financial aid to encourage and reward student progress
Design Principle 8: Leverage technology to improve learning and program delivery	9. Leverage technology to support individualized student planning, tracking, degree audit, and early warning systems

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