

Educational Research  
**Institute of America**

**Best Practices  
for Supporting  
Low-Income,  
First-Generation College  
Students**

**Research Review**

**Prepared for the  
Indiana Commission for Higher Education**

**REVISED and RESUBMITTED: January 9, 2015**

# I N T R O D U C T I O N

While the global economy increasingly demands high-skilled labor, the United States is facing an unprecedented shortage of college-educated workers—making postsecondary degree attainment a national imperative. Indiana has an even greater task ahead; the state lags behind the national average, with only about 33% of its population of 3.4 working-age adults holding a two- or four-year degree (compared to 40% for the United States overall). Perhaps more troubling are statistics showing that almost 22% of Indiana’s adults have attended college without earning a degree. (Lumina Foundation, 2013; Public Agenda, 2014)




Indiana is part of national movement to reform higher education to best meet economic needs and improve the quality of life for its citizens. As part of continuous efforts to improve college access and success for all Hoosiers, the Indiana Commission for Higher Education contracted the Bloomington, Indiana-based Education Research Institute of America (ERIA) to conduct a review of the research literature on best practices for supporting low-income, first-generation college students toward degree completion. Findings of that review follow.

***“Increasing student degree attainment is, therefore, vital to the economic health of the United States.”***

--Linda DeAngelo et al., Higher Education Research Institute at UCLA, 2011, p. 3



This report is organized by three primary forms of support: **academic**, **financial**, and **social**. Within each section, specific evidence-based programming and policies are recommended and research findings backing each are reported. Each recommendation is additionally identified by how it would be carried out:

	in person
	online
	in print

It should be noted that recommendations were selected in part due to their relative small scale of implementation—meaning that individual postsecondary institutions could, with sufficient funding and logistical support utilize, overhaul, or expand structures that are likely already part of existing infrastructure to put the recommended programming in place.

Measurability was also considered during the process of selecting the practices and programming to recommend. Practices and programming highlighted within this report could be evaluated using student and faculty/staff surveys, maintaining demographic data on the students who participate in the programming, and, of course, by tracking degree completion rates for those same participants. The need for institutions to maintain and utilize data to inform decision-making cannot be overstated. While the ultimate goal of the practices recommended here is to increase postsecondary degree attainment, those rates are just one metric. Research presented here points to additional research needed on how to best evaluate the success as well as shortcomings of each practice over time.

# C O N T E N T S

<b>ACADEMIC SUPPORT.....</b>	<b>5</b>
• Increase the availability and quality of programs that offer dual-enrollment in college courses or early college during high school.....	6
• Ease the transition to college and launch new students into a strong first-year experience by implementing mandatory summer programs ahead of entry.....	7
• Restructure developmental education programs so remediation is fast-tracked and more at-risk students enroll in credit-bearing courses sooner – thus reducing time to degree.....	9
• Offer highly structured pathways to degree completion with course sequences clearly mapped and limited options and alternatives.....	12
• Utilize technology to build a supplementary advising system that presents clear degree maps; allows for self-monitoring of progress; and provides immediate warnings related to consequences of course selections, withdrawals, and credit transfers.....	15
• Build a system of guaranteed credit transferability from affiliated institutions and acceptance of prior learning credits to aid re-entry of returning and adult college students.....	18
• Implement multi-faceted career development programs that require students to engage in both exploration and specific experiences over a long term.....	21
<b>FINANCIAL SUPPORT.....</b>	<b>25</b>
• Prevent the wasting of college credits – and students’ tuition dollars.....	27
• Encourage credit load increases – without financial penalties.....	28
• Provide living expense assistance for economically disadvantaged students, as well as emergency aid when needed.....	29
• Make financial education a required part of first-year experience.....	30
<b>SOCIAL SUPPORT.....</b>	<b>32</b>
• Implement a strong learning community infrastructure as a required component of the first-year experience.....	33
• Require intentional, intensive engagement with campus life for first-year students.....	35
• Utilize an “intrusive” approach to in-person advising and counseling services, and make retention a primary focus of advising programs.....	37
<b>BIBLIOGRAPHY.....</b>	<b>39</b>

# ACADEMIC SUPPORT

***“Lessons from emerging research and from the best innovators in the field point to the need for a new approach, one that enables unprepared students to receive academic and other supports they need to move quickly and effectively into and through a set of gateway courses aligned to programs of study that lead to a valued postsecondary credential.”***

--from a 2012 joint statement from the Charles A. Dana Center, Complete College America, Education Commission of the States, and Jobs for the Future (p. 1)

Over the past decade, public and private two- and four-year postsecondary institutions have been pushed by education policy makers and drivers and by legislators at all levels to radically reform their academic programs. Initiatives have been numerous, but serve largely to address projected labor demands to keep the United States competitive in the global marketplace; to improve relatively stable degree completion rates; achieve greater equity in attainment gaps between socio-economic groups; and decrease time to degree. (DeAngelo et al., 2011)

Low-income, first-generation students have received particular attention, because while access to college has increased for this population, degree attainment has not. (Engle and Tinto, 2008) Research has shown that even when disadvantages incurred as a result of the backgrounds they bring to college are controlled for, low-income, first-generation students continue to be underserved by postsecondary institutions (Zhao and Kuh, 2005)—which suggests that better practices can be identified and implemented as part of the postsecondary experience to aid these students in persisting and succeeding to degree completion.

Among the collaborative large-scale efforts to increase college completion and close attainment gaps is, as one example, the Complete College America Alliance of States, which currently includes 35 member states. (See *Four-Year Myth*, 2014). This particular alliance is cited here because of its size and then influence, but also because the changes to academic policies and programming enacted by the Complete College America Alliance of States reflect a number of the practices recommended in the following report—providing, then, evidence of current trends across higher education as well as instructional efficacy then.

The academic practices recommended here all have research-based evidence behind them, and experts attesting to their effectiveness. At a broadest level, **these practices seek to meet the larger aims of supporting low-income, first-generation and non-traditional students by decreasing the time to degree and minimizing the obstacles along that shortened path to viable careers.**



**Increase the availability and quality of programs that offer dual-enrollment in college courses or early college during high school.**


Dual enrollment or early college programs offer high school students an opportunity to enroll in courses for college credit that can be applied toward a degree upon entry into college. Over the past decade, each year about 800,000 high school students attending roughly 70% of secondary schools nationwide have taken at least one college course. Though many of these students are high academic achievers, disadvantaged and middle-achieving students (often with a minimum GPA required) have been increasingly recruited to participate in dual enrollment programs. Dual enrollment has been adopted as a way to accelerate time toward college degree as well as to better prepare students academically and socially for college success. (Community College Research Center, 2012)

This movement of targeting underserved high school students for dual enrollment and early college programs has been propelled by the Bill and Melinda Gates Early College High School Initiative, which since 2002 has led to the opening of more than 240 Early Colleges across the country. Each of these programs partners with colleges and universities to offer students a comprehensive opportunity during high school to earn associates' degrees or two years of credits toward bachelors' degrees at no or low cost to them or their families. (American Institutes for Research & SRI, 2013)

The research into the effects of dual enrollment and early college programs indicates positive outcomes for students during both high school and college. Both appear to yield at least as good and possibly greater benefits at the postsecondary level for groups that have traditionally been disadvantaged or underserved in college, including low-income students (AIR, 2013; CCRC, 2012; Struhl and Vargas, 2012). In results of studies conducted in Florida, New York, and California, the Community College Research Center (2012) found participation in dual enrollment programs positively associated to a range of outcomes, including college enrollment and persistence, greater credit accumulation, and higher college GPA. Jobs for the Future (Struhl and Vargas, 2012) examined the impact of dual enrollment programs on college outcomes at a variety of two- and four-year postsecondary institutions in Texas. It determined that 47% of college goers who had completed at least one dual enrollment course in high school completed their bachelor's within six years compared to 30% of college goers who had not participated in a dual enrollment program— a difference of about 50%. In a study of dual enrollment that compared effects on students from different socio-economic status levels, An (2013) concluded that participation in dual enrollment increases first-year GPA and decreases the likelihood for remediation; additionally, An found that first-generation college students benefit from dual-enrollment as much as students from high socio-economic backgrounds.

American Institutes for Research (2013) found similarly significant positive outcomes for students enrolled in Early Colleges in terms of higher rates of associate and bachelor's completion. AIR also found that Early College programs held on college campuses provided greater benefit than Early Colleges located at off-campus sites.

**This research suggests that higher education institutions that offer quality credit-bearing courses to low-income, first-generation high school students provide multiple advantages toward degree completion.**

	<b>Ease the transition to college and launch new students into a strong first-year experience by implementing mandatory summer programs ahead of entry.</b>
---	---

Summer support programs, which are referred to by a variety of names and can take varying forms, including “bridge,” “pre-college boot-camps” and “intensive freshman seminars,” bring new students to campus ahead of their first fall semester of college. This programming generally serves to ease the transition into college and prepare students for coursework and post-secondary life. Programs may provide a practical orientation to the institution’s resources and policies, guided course selection, goal setting, social engagement opportunities, or academic remediation and skills development – or a combination of these objectives and others. Participation may be required for all students or specific populations.

In short, summer provides postsecondary institutions with an opportunity to engage low-income, first-generation students with the interventions they need to be successful in college—and research points to a multitude of salutary effects of such programming.

Orientation is common practice on college campuses. In the College Board Advocacy and Policy Center’s 2012 Study of Community College Structures for Students Success (SCCSSS), the vast majority of responding institutions reported offering orientation programs to introduce new students to support services available to them and to aid students in making the transition to college. However, researchers also found that, regardless of size, only slightly more than half of responding institutions *require* that first-time, first-year students attend orientation and that the same average number of colleges include individual meetings between students and their advisors during orientation. Further, only about 10% of institutions reported that their orientation programs ran for longer than one day; at more than 75% of responding colleges, such programs were a half day or less. **These findings suggest that many postsecondary institutions would better serve their disadvantaged students in particular by implementing longer, more comprehensive orientation programs that provide both**

**academic and non-academic supports, including one-on-one advising—and requiring that disadvantaged students attend them.**

***“[R]esearch suggests that students who enroll in student success courses during first semester of college are more likely to earn college credits in the first year and to persist to a second year.”***

*--Couturier, Cornerstones of Completion, 2012, p. 18.*

**A number of researchers recommend that at-risk students take student success courses early in their first-year to learn the skills and strategies necessary for success in college.** Student success courses are a high-impact practice identified by the Center for Community College Student Engagement (2014). Skills taught within a student success course might include time management, study and test-taking skills, and career planning. Student success courses also provide an opportunity for students to engage in goal setting and affirm both their aspirations and commitment to college—processes are widely cited as important to college success (Karp, 2011). Karp also points to the positive academic outcomes that result from the social connections forged early on when new students interact with peers, faculty, and staff as part of extended student success courses.

One model of a student success course found to be effective is Florida’s Student Life Skills course; students enrolled in this program were more likely to persist in college, earn a credential, and transfer to a four-year Florida state university (Courturier, 2012; CCCSE, 2014)

**The Pell Institute for the Study of Opportunity in Higher Education (Engle and Tinto, 2008) recommends summer bridge programs as a means of early intervention to aid low-income, first-generation students’ transition into college. The Center for Community College Student Engagement (2014) cites orientation as one of thirteen high-impact practices to provide developmental education and help students navigate the academic path before them.**

In an evaluation of eight academic developmental summer bridge programs that provide intensive remedial instruction at seven community colleges and one four-year university in Texas, Wathington et al. (2011) found that students in these programs were more likely to pass college-level courses in math and writing in the following fall semester than students who did not participate, and that program students were more likely than the control group to attempt higher level reading, writing, and math courses in college. The same research team found that all eight programs were implemented with reasonable fidelity to a model framed by the Texas Higher Education Coordinating Board (though with variation on some key aspects) and that program costs were relatively low, averaging about \$1,300 per student (though varying widely).

An experimental study of eight summer bridge programs in Texas conducted by Barnett et al. (2012) found an introductory impact on college-level math and writing course



completion in the year following bridge program experience (though gains were not statistically significant at the end of two years).

Navarro's profile of the Digital Bridge Academy (2008) shows the promise of online delivery as an additional component of college preparation. This particular model, now known as the Academy for College Excellence, offers both academic and self-management/academic behavior content over a two-week summer course as well as 13-week courses that comprise a "bridge semester."

Couturier (2012) notes that, though more research is still needed, the data from recent studies on summer bridge programs is encouraging—and these programs at the very least provide an opportunity for an assessment of students' skill before the start of college and then early academic intervention.

The short duration, flexibility of content, ease of implementation, and relative costs associated with summer bridge programs make them compelling programming for at-risk students entering college.



**Restructure developmental education programs so remediation is fast-tracked and more at-risk students enroll in credit-bearing courses sooner – thus reducing time to degree.**

Over half of all students entering postsecondary education are placed into remedial or developmental courses. There is limited evidence of the benefits of traditional remedial programs at the college level, and evaluation of commonly used assessments and practices to identify students for remedial programs suggest that the placement process is unreliable, and may result in unnecessary enrollment in these courses. Further, statistics indicate that college students in remedial programs are less likely than their non-remedial peers to earn a degree or credential—and many (4 in 10) do not even complete the remedial sequence set before them, which may span multiple years. Finally, even successful completion of developmental courses typically do not yield college credits, costing students tuition dollars and time to degree. Estimates of total expenses associated with remedial education are \$2-4 billion annually. (Achieving the Dream, 2014; Bailey, 2009; Scott-Clayton and Rodriguez, 2012; Complete College America, 2011 and 2012b; Noble and Sawyer, 2013; Vandal, 2014)

***“For too many students, traditional developmental education is a terminal roadblock to success.”***

--Center for Community College Student Engagement, 2014, p. 9

**Given these findings, a growing number of researchers, organizations, and state agencies concerned with college completion are calling for major reforms to developmental education that center around faster entry into credit-bearing gateway courses and then students’ academic or career concentration of choice. But acceleration must come with academic support that fits the need of individual students. Academic support could take a variety of formats. One critical support includes at-risk students taking co-requisite courses alongside or embedded within the gateway college-level courses. Additionally, students in remedial programs benefit from training in academic success skills, such as study habits, goal setting, learning style inventories, and time management. (ATD, 2014; CCA, 2011 and 2012b; CCCSE, 2014; Couturier, 2012)**

A joint statement from the Charles A. Dana Center, Complete College America, Inc., Education Commission of the States, and Jobs for the Future (2012) puts forth a set of principles to transform remedial education with the purpose of “shift[ing] our focus from improving student success in individual remedial education courses, or in a sequence of courses, to improving student progress through gateway courses and into programs of study that lead quickly and efficiently to completion of a credential of value” (p. 2):

**Principle 1.** Completion of a set of gateway courses for a program of study is a critical measure of success toward college completion.

**Principle 2.** The content in required gateway courses should align with a student’s academic program of study — particularly in math.

**Principle 3.** Enrollment in a gateway college-level course should be the default placement for many more students.

**Principle 4.** Additional academic support should be integrated with gateway college-level course content — as a co-requisite, not a pre-requisite.

**Principle 5.** Students who are significantly underprepared for college-level academic work need accelerated routes into programs of study.

**Principle 6.** Multiple measures should be used to provide guidance in the placement of students in gateway courses and programs of study.

**Principle 7.** Students should enter a meta-major when they enroll in college and start a program of study in their first year, in order to maximize their prospects of earning a college degree.

As recognized by Complete College America (Vandal, 2014), **Indiana has been at the forefront of this movement to redesign developmental education.** In 2013, the Indiana Commission for Higher Education adopted a resolution endorsing co-requisite remedial education as a best practice, as well as a goal that public community colleges deliver all remedial education as a co-requisite by 2014. The Indiana resolution was the result of several years of collaboration between by the Commission and Ivy Tech Community College to transform remedial education. Ivy Tech, because it is a statewide institution, was able to develop an institutional policy that has the desired statewide impact.

Another important state policy influencing remedial education reform is the state's revised outcomes-based funding model, which includes gateway course success as an important metric for community colleges. Ivy Tech Community College will receive additional funding for increases in its number of students who complete developmental coursework and the corresponding gateway college-level course. This combination of a statewide goal to implement scaled co-requisite remediation throughout all Ivy Tech campuses and incentivizing gateway course completion system at the institutional level provides a model of large scale reform aimed at increasing degree completion rates.

**It is also important to note that the need for academic support continues after students have persisted through gateway courses and as they progress toward completion. Supplemental instruction and tutoring are vital services through graduation.** The Center for Community College Engagement (2014) includes both of these support mechanisms among the thirteen high-impact practices recommended for community college student success.

Rheinheimer and colleagues (2010) found in reviews of the research literature on tutoring and supplemental instruction that tutoring, which has been implemented at most postsecondary institutions since the 1920s, enhances mastery of subject matter and thereby boosts self-efficacy, persistence, and retention while SI, which utilizes trained leaders who run smaller group sessions alongside larger college courses to further develop students' understanding of course content, impacts persistence from first to second year and improves grades in typically difficult college courses. In their own non-experimental longitudinal study of the impact of tutoring services on 129 at-risk students at a state university in Pennsylvania, Rheinheimer's team concluded that tutoring had significant positive relationships with retention and academic performance, providing further evidence of tutoring as an effective practice for supporting students toward degree completion.



**Offer highly structured pathways to degree completion with course sequences clearly mapped and limited options and alternatives.**

Forging one's way through college course catalogs and degree program requirements can be overwhelming, and especially so for first-generation students who, compared to their peers, may have fewer supports—including first-hand parental guidance through the process. **Recent reforms and research reveal a potential need for a decrease in the number of options on offer for students, and an increase in the amount of guidance and structure available to aid students in their navigation through postsecondary education** (Scott- Clayton 2011, 2012; Couturier, 2012; Johnson, 2011; Karp 2011; CCCSE 2014).

Many students in two-year institutions in particular enroll in college without clear goals for study or careers and many of those colleges do not offer much guidance in helping students establish them. And yet researchers have found that students who enter a program of study in their first year are much more likely to complete a credential or transfer successfully to a four-year college than are students who do not enter a program until their second year or later. (Jenkins and Cho, 2013)

***“For many students at community colleges, finding a path to degree completions is the equivalent of navigating a shapeless river on a dark night. While academic preparation and financial supports are critical components of student success, subtle institutional features may also play an important role. [There is] evidence for what is called the structure hypothesis: that community college students will be more likely to persist and succeed in programs that are tightly and consciously structured, with relatively little room for individuals to unintentionally deviate from paths toward completion, and with limited bureaucratic obstacles for students to circumnavigate.”***

-Judith Scott-Clayton, 2011,  
*The Shapeless River: Does a Lack of Structure Inhibit Students' Progress at Community Colleges?*  
Abstract

**In light of these findings and calls from experts in higher education, many states and schools are simplifying the course and program selection process by creating highly structured pathways to degree completion.** (Education Advisory Board, 2012; Public Agenda, 2014) Jobs for the Future and Completion by Design recommend that colleges, in implementing structured pathways, build coherent programs with clearly articulated expectations; streamline course options; standardize core competencies; maintain a high level of rigor; and align programs with labor market demands. (Couturier, 2012)

In *Guided Pathways to Success (GPS): Boosting College Completion* (2012a), Complete College America offers additional recommendations for effective pathways to degrees, including:

- designing programs end-to-end, so that students are propelled toward fulfilling their ultimate and clearly articulated goal of a desired career by following a sequence of relevant courses;
- delivering courses within block schedules to add predictability to students' lives—an especially important factor in the academic success of working students;
- guaranteeing that required courses are offered in both number and frequency as needed so that every student can graduate on time;
- building in critical milestone courses that must be completed in each semester of the program to affirm progress as well as provide evaluation as to whether students are well-suited to the pursued field of study;

Following are some examples of successful structured pathways cited in the research literature:

- As part of a Curriculum Improvement Project initiative, North Carolina's community colleges are implementing new structured pathways to postsecondary degrees "in a process marked by faculty-ownership, a focus on streamlining courses, and reducing redundancies, and a goal of imbuing students with the skills need for high-demand jobs." (p. 11) The largest CIP the state has undertaken, the Code Green Super CIP, spawned reforms that engaged more than 200 faculty members from across the 58-college system in aligning core technical skills and competencies for program groups; has resulted in a more than 80 curriculum standards consolidated into 32; the elimination of 92 courses alongside the addition of 47 courses, and the revision of 219 courses as well as the development of nationally recognized, stackable credits for students. (Couturier, 2012)
- In an example of the block schedule model, CUNY Lehman has students select from a set of predetermined first-semester schedules, all of which consist of 15 credits; fulfill several general education requirements; and encourage instructors to coordinate lectures. Once students choose a schedule, they are automatically registered in all of its courses. Data from CUNY Lehman shows significant improvements in first-year students' GPAs and retention rates. (Public Agenda, 2014)
- The CUNY Accelerated Study in Associate Programs (ASAP) initiative groups students in cohorts based on a limited set of majors. These cohorts attend courses

during consolidated blocks that meet in the morning, afternoon, or evening to allow students to better balance family and work responsibilities alongside their postsecondary education. Outcomes of this program include a doubled graduation rate for associate degrees; graduate rates three times higher than the national average for urban community colleges; and 55% of its fall 2007 cohort graduating with associate degrees in three years. (Complete College America, 2012a)

- Tennessee Technology Centers, which typically serve an older and low-income population of students, implemented highly structured, block schedule certificate programs that have resulted in more than 75% of students graduating on time with 80% job placement rates. (Complete College America, 2012a)

**Finally, in addition to leading college graduates into successful careers, structured pathways to degree completion have the potential to promote job growth.** According to Jobs for the Future and Completion by Design, the U.S. Department of Labor reports that the most successful career pathways programs collaborate with industry leaders and employers during program development and create a mix of short-, moderate-, and long-term job training that produces incremental numbers of graduates to fulfill labor market demands. (Couturier, 2012)

***“New program pathways are tailored to produce graduates to fill high-demand careers, facilitating better cooperation with the state’s business sector. Students enter programs of study with a clear sense of the job opportunities that await them, boosting motivation for graduation.”***

--Complete College America, 2012a, *Guided Pathways to Success (GPS): Boosting College Completion*, p. 5



**Utilize technology to build a supplementary advising system that presents clear degree maps; allows for self-monitoring of progress; and provides immediate warnings related to consequences of course selections, withdrawals, and credit transfers.**

Many postsecondary institutions' course catalogs are overwhelming to students, offering a large volume of courses and complex degree program requirements. Simultaneously, many advising centers at the same institutions are overwhelmed, with advisors spread thinly over large numbers of students. **Technology has the potential to enhance college advising capacities tremendously, clarifying program requirements while providing immediate guidance and increased agency to students.** According to Engle and Tinto, "Institutions can help keep students on track in their coursework by developing early warning and/or advising systems to monitor student progress to intervene when necessary. Such systems provide information to faculty, staff, and students in time to take action and improve performance before it's too late and a student fails or faces academic discipline... While these programs can help all students succeed in college, they have been found to be particularly effective with at-risk populations like low-income, first-generation students" (2008, p. 25).

*"Innovations in technology allow student support to be targeted and customized to meet the needs of individual students. Early warning systems make it easy for institutions to track student performance in required courses and target interventions when and where they are most needed... Academic advisors can focus their attention almost exclusively on students most in need of services instead of spreading themselves over burdensome caseloads of all students."*

--Complete College America, 2012, Summary

**An effective starting place for building supplemental online advising programs are "road maps" or "degree maps" that utilize graphic and interactive technological features to clearly present sequential, semester-by-semester outlines of the structured academic pathways to degrees described above and make individualized recommendations for courses as well as careers based on student's performance and interest. (CCA, 2012a; Johnson, 2011)**

**Other important features of online advising programs are mechanisms that alert students immediately during the registration process to courses that have risks for failure and withdrawal.** Such systems also hold promise for delivering in real time relevant transfer and articulation information, i.e. whether a course would fulfill requirements in a student's designated program of study and how the course would count at other institutions. (CCA, 2012a; Public Agenda, 2014).

In a study of a such of technology-based early alert systems, Falconer et al. concluded that “[i]nitial data support the notion that this technology tool has the potential to create a more cohesive approach to monitoring the academic progress of university students. In addition, early evidence suggests an early-alert system has the potential to impact student success by enhancing in real time the lines of communication among student, instructor, and advisor.” (2014, p. 48)

**Progress monitoring—via some form of flagged performance outcomes, both good and bad—is another promising feature of technology-based advising systems.** According to Engle and Tinto (2007, p. 25), “Institutions can help keep students on track in their coursework by developing early warning and/or advising systems to monitor student progress and to intervene when necessary. Such systems provide information to faculty, staff, and students in time to take action and improve performance before it’s too late and a student fails or faces academic discipline. Actions triggered by monitoring systems may include performance contracts that commit students to receiving advising, counseling, and tutoring and/or enrolling in study skills workshops/courses ... While these programs can help all students succeed in college, they have been found to be particularly effective with at-risk populations like low- income, first-generation students.” In the survey responses from students participating in their research, Falconer et al. (2014) noted potential of boosting motivation as well as spawning corrective behaviors: “Notably, 93% of students who received a *kudos* flag indicated it was motivational to receive the positive feedback. Of the students receiving the academic difficulty flag, 85% indicated that they took action.” (p. 47)

Johnson (2011) points to transformations over the past 15 years in how college students are being advised, such as policies that limit students to registering only for courses consistent with their degree plans, and the University of Florida’s role as a leader in reforms that utilize technology to improve services to its tens of thousands of students. However, Johnson also notes that while technology holds promise for optimizing advising programs, it is not yet common practice. Indeed, survey results from the College Board Advocacy and Policy Center’s study of community college structures for student success (2012) indicate that one ideal component, early-warning systems, at only 30 % of responding institutions.

Following are some examples of effective technology-supported advising systems referenced within the research literature:

- Arizona State University’s eAdvisor system has resulted in first-time, full-time freshman retention rates of 84 %, with 91% of students determined to be “on



track” – an increase from just 22% three years before. (Complete College America, 2012)

- Georgia State University has implemented a degree map and intrusive advising model that has boosted graduation rates by more than 20% in the last 10 years—with minority students and students receiving Pell Grant aid now graduating at higher rates than the overall student body. (CCA, 2012)
- Via a single online portal, LifeMap at Valencia College in Florida provides students with a variety of technology-enhanced supports, including educational, financial, and career planning tools and labor market information. In its first five years following implementation, LifeMap resulted in gains in fall-to-fall persistence for first-time students from 58.5% in 2001-02 to 67% in 2007-08. (Couturier, 2012)
- Another model cited as successful is Tennessee’s Austin Peay State University’s Degree Compass, which not only suggests courses but also predicts outcomes (namely grades) based on a student’s past course performance and those of previous students. (Public Agenda, 2014)

It was outside of the scope of the research findings presented here to review and recommend specific software programs that postsecondary institutions could use to implement technology-enhanced advising systems. Johnson (2011) does note that most campus enterprise systems such as Banner or PeopleSoft have modules well-suited to tracking systems, and these might be helpful at small to mid-sized schools—while it might be more cost-effective and logistically superior for larger universities to develop their own.

***“But at its core, the technology is just a means to an end. It is primarily about good academic planning and communication. With 40,000 students to manage, creative use of technology is a part of almost any significant change, but some of the same principles would apply whether using a supercomputer or a chalk slate and abacus.”***

*--Johnson, 2011, Three Policies to Reduce Time to Degree, p. 3*



**Build a system of guaranteed credit transferability from affiliated institutions and acceptance of prior learning credits to aid re-entry of returning and adult college students.**

More than 60% of bachelor's holders have attended multiple institutions and attempted to transfer credits between them; of those graduates, 45% said that some or none of their prior credits were accepted by their new schools, creating a major source of delay toward degree completion (Complete College America, 2012; Johnson, 2011). CCA (2012) estimates that if each of these graduates had just two courses that failed to transfer, costs to students and taxpayers are about \$600 million a year—and this doesn't even include costs of failed credit transfers earned by those students who left college without earning a degree. The transfer status itself is negatively related to college persistence. (Kuh et al., 2005)

**In the face of such statistics, many policy drivers are calling for major reforms to transfer and articulation higher education policies at both the state and institutional levels.** “Seamless integration between degree plans at the community college and four-year university levels” is a “critical component in transfer success,” according to Miller et al. (2011, p. 5).

**Jobs for the Future and Completion by Design (Couturier, 2012) as well as Complete College America (Johnson, 2011) recommend two specific practices be implemented: first, a common transferable general education core; and second, incentives to complete associate degrees before transfers to four-year institutions.** State models of these policies shown to be effective include Florida, North Carolina, and Texas.

Definitions of general education core programs vary by state; generally, they include required courses in curricular areas that are pre-determined to be transferable among institutions, but that must be completed in designated blocks or cores ahead of transfer. Benefits of core general education core programs include provision of clear milestones for students to work toward; prevention of duplicated—and then wasted—courses and credits and tuition dollars; and an increased likelihood that students will persist through to fulfillment of core requirements. (Couturier, 2012; Johnson, 2011)

Research suggest that students who earn an associate degree ahead of transferring into a bachelor's program have better outcomes than students who transfer without—especially if clear incentives are in place to finish the associate degree first (Couturier, 2011).

Florida has implemented one of the most comprehensive transferability programs at its two- and four-year institutions. It features common statewide course numbers, major requirements, and standards for acceleration credit (Johnson, 2011). Florida's 2+2 articulation and transfer policies also guarantee admission with junior standing at a state

university for community college students who earn an Associate of Arts degree, though not necessarily at the university or major of their choice; in studies of statistics from six states, Florida had the highest rate—at 69%—of transfers to a four-year institution after earning an associate degree. (Couturier, 2012)

The policies above would serve many traditional students, including disadvantaged students, well. However, adult students with some credit who return to college face additional challenges, as identified by the Adult College Completion Network (2012). First, there is currently an unfortunate lack of data on this population, including commonly accepted figures on the credit benchmarks achieved by adult learners prior to leaving college. Second, improved statewide transfer policies too often don't benefit adult learners due to this population's frequent experiences of large time lapses between exit and re-entry as well as relocation to other areas of the country. **ACCN advocates for reformed policies at higher education institutions that allow for providing credit for prior learning and work experience as a means of increasing adult college completion.** ACCN cites current service members and veterans as examples of adult learners with specific knowledge, skills, and competencies comparable to those taught in college courses.

***“The need to better serve adults with prior college credit is clear. With ambitious national, state, and even local attainment goals, reaching and reengaging this population will be a key factor in our ability to meet future workforce demands. Data clearly show that these goals will be unmet without significant improvement in both the traditional education pipeline and in the outcomes for adult learners.”***

--Adult College Completion Network, 2012, p. 11



**Implement multi-faceted career development programs that require students to engage in both broad exploration and specific experiences over a long term.**

Postsecondary institutions offer career planning and placement services via a wide variety of types of programs, from individual to group counseling sessions to full career development courses to internships and other on-site job training. Some services aid students in deciding upon particular careers while others, separately or additionally, teach students how to pursue specific careers or place students into apprentice or entry level positions. While current research on outcomes of career counseling and workplace experience, particularly in a postsecondary context and particularly for disadvantaged undergraduate students, is limited (likely due in part to variability of services), **a review of the available literature suggests that best-practices-based approach to programming for first-generation, low-income college students is one that incorporates multiple forms and dimensions over a long period via required career development courses.**

For decades, career counselors in educational institutions relied on standardized inventories and assessments that served to reveal students' interests, abilities, values and other factors to guide the decision of which career path to pursue (Harrington and Long, 2013). Results from the assessment might then be used to create an individual career plan (Kalchik and Oertle, 2011). During this same period, many young people arrived a college with preconceived career goals typically based on parental influence or professions. However, as student populations have become more diverse and as job prospects shift ever more rapidly due to economic conditions and technological advancements, approaches to career development are undergoing small and large transformations. (Shaffer and Zalewski, 2011a).

**Research suggests that the very process of deciding upon a career today is cognitively complex.** Porfeli and Skorikov (2010) describe the career choice of 19-22 year olds as a non-linear process involving two forms, diversive or broad exploration and specific, in-depth investigation, each considering how the self interacts with the world and its available options. According to Pryor and Bright in an outline of their Chaos Theory of Careers (2011), "there is a multiplicity of influences in career decision making; they are interconnected and have the potential to interact in unpredictable ways. People are subject to a complex array of career influences, including parents, labor markets, friends, media, cultural tradition, teachers, gender, sexual orientation, politics, climate, and health." (p.163)

Given the complexities of career decision-making, it stands to reason that so many students arrive to college undecided. Bullock-Yowell and colleagues (2014) conducted an empirical study to determine differences between postsecondary students who were decided and undecided upon careers. Their review of previous research found several key distinctions.

**Students who had decided upon careers had higher amounts of self-efficacy**, which influences a person to engage in investigative behaviors to determine their career options and feel more confident in their ability to carry out the expectations and tasks of a particular job. In contrast, “research indicates that individuals with low career decision-making self-efficacy tend to limit their career alternatives and goals because they perceive poor odds for achieving specific career aspirations.” (p. 23) Bullock-Yowell et al. also found that **students struggling with career decisions possessed negative career thoughts that may limit their capacity to assess self-knowledge or increase self-criticism relative to professional potential**. In their examination of their own data, Bullock-Yowell mostly confirmed this previous research. They found that undecided students reported lower career decision-making self-efficacy, higher incidences of negative career thoughts, and more career decision-making difficulties than their decided peers. However, these researchers also found that “undecided students are as ready to make a career-related decision as their decided peers but may lack or be receiving inconsistent career information.” (p. 22)

Bullock-Yowell and colleagues point to the **benefits of career exploration courses for undecided students**. They recommend that advisors work with undecided students to **build confidence** and **set small, accomplishable goals**. Examples of effective activities suggested include discussing tasks or goals that the student has successfully completed in the past and having students research five possible careers and the requirements of each to secure a position.

Hughes et al. (2013) note that **underprepared college students—who are often also undecided in their educational and professional goals—tend to lack support-seeking behaviors and then do not make use of resources available to them on campus, including career assistance**. For this reason, and others related to the obstacles that remedial college students face, **it appears essential that career advising be central to, and required alongside, developmental academic programs—not offered as separate, optional support** (Makela, 2006).

Bullock-Yowell and colleagues as well as Makela (2006) advocate use of the **Cognitive Information Processing (CIP) approach to helping students make career decisions**. CIP is a career theory developed by Sampson et al. in the 1990s. Makela describes the three sequential components of CIP—and the potential of career counselors following this process to aid students who might be overwhelmed, anxious, depressed or otherwise confused about their career prospects:

1. **Gaining knowledge**: learning about oneself and options, exploring interests and values, and considering the academic, career, and social activities available to build experience necessary for securing a desired career.
2. **Making decisions**: comparing self-knowledge to what was learned about the options, narrowing down choices, and weighing remaining opportunities against interests and skills.
3. **Understanding career thoughts**: turning negative thoughts about one’s ability and judgments positive by recognizing tendencies toward language and developing new habits of thought and speech. Also, devising solutions to problems or deficiencies.

Another effective process advisors could implement to foster career decision-making is to have

students create an **Individual Career Plan (ICP)**. There are a number of available models of this construct. One that Kalchik and Oertle (2011) recommend for postsecondary students is the LifeMap, a five-stage advising model developed by Valencia Community College in Florida. This particular ICP also assists with the transition to college by connecting students to faculty and campus resources. More information can be found at <http://valenciacc.edu/lifemap/>.

Alongside either process cited above, to either achieve or enhance the effects, several researchers recommend strategies that fall within what is known as **career construction theory**. Savickas (2011), Hughes et al. (2011), and Zikic and Franklin (2010), suggest holistic strategies that have students engage in **narrative approaches** to career development, with students and counselors working together to construct, view from multiple perspectives, reflect upon, and revised the student's life story and imagined career story. Travers (2011) recommends that students maintain a **diary** as they explore and pursue careers as a means of self-assessment and reflection.

**Research suggests that career advising be part of the postsecondary experience for students who have declared majors and intended career plans as well.** Shaffer and Zalewski (2011b) warn that students who are “foreclosed” upon a career decision may not have sufficiently explored options or constructed a self-identity, opening themselves up to potential psychological as well as professional issues. Also, a report from ACT, Inc. (2013) shows a misalignment between careers sought and available jobs, the group found an overabundance of high school students entering community colleges were pursuing low-demand careers. “The data on ACT-tested community college students suggests that traditional students may not be well informed of the best career pathways they should follow as they engage with the community college. Information signaling targeted job availability needs to get to students sooner as they explore options for college and careers.”(p. 8) In light of these findings, ACT recommends that community colleges undertake the following measures to bridge the gap (p. 10-11):

- *Communicating candidly with educational stakeholders earlier in the pipeline about the need for students to develop more crystallized plans that fit with their personal interests and abilities, and align to community college career programs that connect to jobs.*
- *Ensuring that students understand the pitfalls of using community college enrollment for career exploration as opposed to skill development. Students who change areas of study are less likely to graduate in a timely fashion, putting an additional strain on community colleges as they strive to address regional skills gaps.*
- *Developing faster course-correction methods for students whose career plans do not fit well with their personal interests, abilities, and expectations for earnings upon completion.*

Other research points to the potential effectiveness of implementing full career development courses. While acknowledging the high degree of variability in terms of design, scope, function,

as well as length, student populations enrolled, and credit bearing status, **Folsom and Reardon (2001) found in a review of the literature on career courses “overwhelming evidence that career courses have a positive impact on the cognitive functioning of students, and these courses also appear to have a positive impact on student outcomes, including satisfaction with career courses and increased retention in college” plus “positive gains in vocational identity, career decision making, or other output variables.”** (p. 26)

Freeman (2012) has implemented semester length career development courses for decided majors and also notes the benefits researchers have found. Freeman outlines the content of his career development courses, including specific questions and assignments and goals. Freeman has students investigate and report on specific careers and develop job search strategies and materials, as well as engage in self-reflection and mock job interviews. In his own evaluations and anecdotal findings of his course, students’ reactions have been positive; faculty have found students better prepared in career-oriented discussions following course completion; advisors have reported more productive sessions with students following course completion; and interviewers have reported that students are knowledgeable about their selected career path, ask good questions, and are generally well prepared for interviews.

Regarding when in their postsecondary educations students should engage in career counseling and/or career development courses, research and common sense suggest the sooner the better, especially for disadvantaged and undecided students so as to minimize the challenges and issues they already face. However, **results of a national survey of students transitioning into their second year at private and public two- and four-year colleges indicate that from first- to second-year, student receptivity to institutional help in the area of career counseling increased an average of over 25%** (Noel-Levitz, Inc., 2011). “Students in this study indicated a very strong desire for career counseling, which is consistent with other national studies that suggest students are becoming much more demanding of this service. They want to define their goals, talk about the ins and outs of their career choice, and learn more about opportunities for work experiences and internships. (p.11) **This suggests that the beginning of the second year of college, particularly after the completion of a highly structured first-year experience, may be the optimal time to begin a more intensive, comprehensive career development program.** However, it is impossible to argue against providing students with opportunities to explore careers and receive career advising during first-year.

The findings of the review of current existing research on career counseling suggest that first-generation, low-income postsecondary students should participate in comprehensive career development courses that have them engage in multiple modes of exploration, from skills and interest inventories to research on careers to constructivist self-reflection, followed by direct experience with preparing for job searches and, ultimately, on site workplace experience. Career development should ideally be a central part of academic development, and not an optional support service of limited duration and disconnected content that students may or may not elect to seek out.

# FINANCIAL SUPPORT

It is well documented that finances are a major obstacle to college access and success, particularly for economically disadvantaged and non-traditional students. Research shows that increases in financial aid, particularly in the form of grants and scholarships and work-study, increase the likelihood of persistence of low-income, first-generation college students. While some funding from loans can increase persistence for this population, high levels of accumulated debt significantly decreases persistence, suggesting that first-generation students are debt-adverse and may opt for working over taking out loans to finance their education. (Engle and Tinto, 2008).

Below are some recent statistics related to college funding from College Board's 2014 *Trends in Student Aid*:

- While a significant portion of state and institutional grant dollars are merit-based, most funding is need-based.
- Federal Pell Grants for undergraduate students rose from \$16.5 billion in 2007-08 to \$38.2 billion in 2010-11. These grants totaled \$32.7 billion in 2011-12, and increased to \$33.7 billion in 2013-14. (Amounts are in 2013 dollars.) Recent increases are attributable to “the federal government stepping in to support students facing rapidly rising tuition levels in a weak economy.”
- In 2012-13, 42% of Pell Grant recipients were dependents of their parents for financial aid purposes, and 61% of these dependent students came from families with incomes of \$30,000 or less.
- In 2012-13, 24% of all Pell Grant recipients were over the age of 30.
- Veterans' education benefits for undergraduate and graduate students increased from \$4.6 billion in 2007-08 to \$11.9 billion in 2010-11. These awards totaled \$13.2 billion in 2012-13 and an estimated \$13.8 billion in 2013-14. (again, all amounts are in 2013 dollars)
- State grant aid, almost all of which is for undergraduate students, increased by 10% in constant dollars between 2007-08 and 2010-11 and declined by 5% between 2010-11 and 2013-14, including a 3% decline in 2013-14.
- State funding patterns vary considerably across states. Twenty-three states considered students' financial circumstances in allocating at least 95% of their state grant aid in 2012-13, while 14 states considered financial circumstances for less than half of their state grant aid. The %age of all state grant aid distributed on the basis of financial need declined from 77% in 2002-03 to 71% in 2010-11, and recovered only to 75% in 2012-13.
- At the institutional level, grant aid represents a much larger portion of the aid



received by students enrolled in private nonprofit institutions than in other sectors.

- About 48% of institutional aid in public four-year colleges and 70% in private nonprofit four-year colleges is need-based. Remaining funding is used for other purposes and provides discounts to students who, according to the need analysis system, could afford to pay without assistance. In both public and private institutions, the portion of aid going to meet need has decreased in recent years.
- The %age of undergraduate students taking federal subsidized or unsubsidized student loans increased from 27% in 2003-04 to 33% in 2013-14. Just 6% of students (and 17% of borrowers) took only subsidized loans.
- About 60% of students who earned bachelor's degrees in 2012-13 from the public and private nonprofit institutions at which they began their studies graduated with debt. They borrowed an average of \$27,300, an increase of 13% over five years and 19% over a decade.
- Nonfederal education loans grew from an estimated \$13.7 billion in 2003-04 to \$26.0 billion in 2007-08. In 2013-14, student loan volume from banks, credit unions, states, and institutions was about \$10.0 billion. (Again, amounts are in 2013 dollars.)

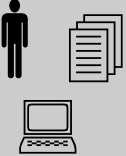
These funding trends from College Board are encouraging regarding increases in grant aid to disadvantaged and nontraditional students; however reliance on loans for this population is always concerning. According to the Pell Institute for the Study of Higher Education, low-income, first-generation students graduate from the baccalaureate level with greater loan indebtedness than their peers, at average of about \$3,600 more.

Even more disturbing, however, is the cumulative loan debt for students who leave postsecondary education without completing their degrees. For instance, low-income, first-generation students attending public and private four-year institutions have greater levels of cumulative loan debt than their most advantaged peers regardless of class level (e.g. 1st, 2nd, 3rd or 4th year) and persistence outcome. The amount of loan debt for low-income, first-generation students (and their peers for that matter) who leave before graduation is staggering. Low-income, first-generation students who left during their first year owed \$6,557 on average while those leaving in their fourth year owed an average of \$16,548. These students must pay back their loans without the extra earning power associated with attaining their degrees – and without the parental or family resources that might be available to their more socioeconomically advantaged peers who leave in debt. (Engle and Tinto, 2008, p. 23)

Overhauling financial aid policies is needed to make college affordable and accessible—but doing so requires a monumental process involving education and legal policies at the federal, state and local levels.

However, as Couturier (2012) notes, research findings on the effectiveness of specific financial aid policies that keep students enrolled and progressing toward degree completion are limited. Early commitment programs, such as those profiled by the Western Interstate Higher Education Commission (Blanco, 2005)—which included Indiana’s 21<sup>st</sup> Century Scholars—provide promise of effective programming.

This document highlights evidence-based smaller-scale reforms that could be implemented on a faster timeline to provide much needed financial support to low income, first generation college students.


	<b>Prevent the wasting of college credits – and students’ tuition dollars.</b>
---	--

One of the most effective ways to support economically disadvantaged students financially is to spare them the cost of wasted credits. According to the Education Advisory Board (2012), the typical college graduate has lost more than a semester of credit due to drops and failures. This is supported by statistics from Complete College America’s *Guided Pathways to Success* (2012a), which indicate that the average bachelor’s holder in the United States earned more than 136 credits when 120 is usually sufficient, while associate degree holders earned nearly 80 credits instead of the typically required 60. CCA made another staggering claim in 2012’s *GPS: excess college credits* cost more than \$19 billion annually, with almost \$8 billion paid by students at two- and four-year institutions and more than \$11 billion shouldered by taxpayers who subsidize public higher education.

Reforming academic support, as discussed previously in this document, would serve to reduce credit wastage. Namely, the changes that would result in direct financial support to students include the following:

- **Overhauling remedial education to allow immediate entry into gateway courses.** Quite simply, this would reduce students’ time to degree, resulting in lower tuition costs along the way to degree. (CCA, 2012b, 2011).
- **Offering highly structured pathways to degrees.** By simplifying degree programs with clear maps to completion and having students register for whole programs of study versus individual courses would save students money, as students would fulfill requirements more efficiently and make fewer poor course selections—and thereby finish earlier, at lower cost (CCA, 2012a; Education Advisory Board, 2012). “The practices that comprise preventing wasted credits seek to limit the choices in order to keep students on track and prevent loss of credits due to changing majors. “ (Public Agenda, 2014, p. 23)

- **Supplemental advising featuring early warning systems to alert students of the consequences of course withdrawals and the selection of courses that don't fit degree requirements and/or have high failure rates.** Course withdrawal alone is the largest source of wasted credit hours, with nearly 10% of grades earned by undergraduates nationwide coded as “W” for withdrawal—and then not counting toward a degree (CCA, 2012a; Public Agenda, 2014)
- **Streamlining transfer process and credit transferability.** According to Complete College America, “More than 60 % of bachelor’s recipients in 2007–08 had attempted to transfer some of their credits between institutions. Of those, 45 % said that some or none of their prior credits were accepted by their new schools. Assuming that each of these graduates had two courses that failed to transfer, the estimated costs to students and taxpayers would be about \$600 million each year. That doesn’t count the costs of the failed transfers of those who ultimately drop out, which can be a key driver of student failure.” (2012a, p. 3)
- **A regional or national general education undergraduate core would provide financial support during the transfer process as it limits excess credit accumulation. Additional financial support would come from a institutional (or broader) requirement that students complete associates’ degrees before transferring to a four-year program,** as again, students would incur less credit waste – as well as reap greater gains on the job market should they ultimately never receive a bachelor’s (Couturier, 2012).


	<p><b>Encourage credit load increases – without financial penalties.</b></p>
---	--

**Research shows a strong correlation between early credit accumulation and college success; students’ chances for completing college improve significantly when they take at least a full credit load (30 credits) in their first year. And yet 12 credits per semester is the standard load for students—who may incur financially penalties from institutions if they exceed this amount. Low credit loads have contributed to significant increases over the past 30 years in the money and time required to complete a degree.** (Education Advisory Board, 2012; Offenstein et al., 2010, Public Agenda, 2014). In 1972, high school graduates could expect to complete a bachelor’s after about 130 credits and 4.3 years. Twenty years later, the averages rose to 138 credits and 4.3 years. Today, 60% of students at four-year colleges in the United States take more than four years to earn their degrees, and 20% need more than six years. (Johnson, 2011)

In response to this “credit creep” phenomenon, Complete College America leads a “15 to Finish” campaign, pushing states to **encourage increased credit loads for college**

**students.** The University of Hawai'i system's **flat rate tuition program** is an example of a successful strategy to increase credit loads while providing immediate financial relief to students. This state plan allowed students to get a fifth course for free every semester, which reduced tuition costs and eventual debt, as well as increased the likelihood of degree completion. As a result after just one year, from 2011-2012, the number of incoming students at four-year colleges in the Hawai'i system attempting 15+ credits increased from 36.5% to 52.5% (Education Advisory Board, 2012; Public Agenda, 2014)

**Colleges nationwide are implementing policies, including flat rate tuition, to encourage enrollment in at least 15 credits each semester, allowing students to graduate in four years versus five (Education Advisory Board, 2012) – and then reap financial benefits both now and later.**

	<p><b>Provide living expense assistance for economically disadvantaged students, as well as emergency aid when needed.</b></p>
---	--

Many low-income, first-generation college students are also considered “non-traditional.” “Non-traditional” students have unique—and frequently great—financial need. Compared to their “traditional” counterparts, they are more likely to be: financially independent, older than 24, work more than 35 hours per attending college, and have families of their own to support. Additionally, many of these non-traditional students by necessity attend college part-time, which reduces the types and amounts of financial aid available to them. (College Board, 2008)

**The College Board Advocacy and Policy Center (2012) recommends that colleges provide financial aid to cover the direct living expenses of disadvantaged students for whom such costs, especially during college enrollment, will present hardship.** These expenses might include: providing child care through on campus programs or vouchers for other quality childcare programs off-campus; providing public transport, gas vouchers, and/or subsidies for transportation; facilitating access to “safety-net” services, including Medicaid, food stamps, and earned income credits; textbook vouchers or book subsidies; housing assistance; legal assistance.

In *Cornerstones for Completion, Jobs for the Future and Completion by Design* (Couturier, 2012) recommend colleges provide emergency aid to help students stay enrolled and persevere in college despite changes in circumstances that might otherwise require them to withdraw. They cite Scholarship America’s Dreamkeepers, a national organization that trains staff at participating postsecondary institutions to implement and administer the program and its funds, which reports that 84% of recipients of these scholarships re-enroll the following term or graduate the following year (Couturier, 2012).



## **Make financial education a required part of first-year experience.**

***“Difficulty understanding the costs and accessing adequate financial aid has particular impact on low-income and first-generation college students. These students may be unaware of how to access financial aid and scholarship programs that could dramatically lower the amount they and their families pay for college.”***

--Grantmakers for Education, *From Access to Success*, 2010, p. 2

**Financial literacy contributes to college access and success. The Pell Institute for the Study of Opportunity in Higher Education (Engle and Tinto, 2008) urges postsecondary institutions to provide this support to low-income, first generation college students as a means of reducing the impact of financial barriers.** The Pell Institute recommends workshops for students and their parents/guardians about the financial aid process, especially completing the FAFSA, plus additional instruction to improve financial literacy, which might feature topics such as: options for paying the costs of attendance at four-year institutions, including the prudent use of loans; how to better acquire and utilize financial aid; how to budget; navigating the banking system; and the pros and cons of credit card use.

**The College Board Advocacy and Policy Center (2012) also stresses the need for students to have full understanding of all costs associated with enrollment in college as well as available aid, and to receive assistance from college staff in building money management and budgeting skills.** The College Board Advocacy and Policy Center makes specific suggestions for a multi-pronged approach to providing this type of support (p. 38):

- Communicate information about financial aid to students in an effective and extensive manner by:
  - Utilizing multiple methods of disseminating information that are culturally and linguistically appropriate;
  - Providing information in multiple formats (e.g., paper, online, in person) to reach more students with accurate and timely information;
  - Providing bilingual services and materials;
  - Offering information and access to financial aid services during evening and weekend hours;

- Involving families of students when providing financial aid information and materials.
- Forge partnerships with local organizations to disseminate information about financial aid by:
  - Coordinating activities with high school counselors and representatives to provide grade-specific college and financial aid information to students;
  - Partnering with other local colleges and universities to offer financial aid information and counseling;
  - Engaging multilanguage media and community leaders to drive awareness of financial aid options;
  - Supporting state or regional efforts to improve financial aid application rates.
- Improve student access to financial aid counseling by:
  - Integrating financial aid counseling with other outreach activities;
  - Requiring students to meet with financial aid counselors;
  - Making financial aid labs available;
  - Facilitating online completion of FAFSA;
  - Providing one-on-one assistance with financial aid;
  - Increasing the number of staff supporting financial aid;
  - Increasing training for financial aid staff to ensure up-to-date information and utilization of best approaches to working with students.

# S O C I A L   S U P P O R T

College success requires skills beyond those that are overtly academic. Research suggests that college students benefit from non-academic supports that help them create meaningful social relationships, develop the ability to navigate the campus and meet its various expectations, and address conflicting demands of work, family, and higher education. Programming that provides scaffolding to help students succeed in college should include social supports, ideally embedded within students' early academic experience rather than administered separately. (Karp, 2011)

As with academic support, social support must be particularly strong during the first-year experience to propel students into the second year and toward degree completion. Also as with academic support, ideally mechanisms should be enmeshed within larger policies and programming at the institutional level, and at-risk students should be required to participate in such programming.

Low-income, first-generation students need significant support as they transition into college—support that validates their capabilities to succeed and sense of social belonging (Engle and Tinto, 2008; Karp, 2011). In a study comparing the experiences of first- and second-generation college students, Pike and Kuh (2005) note that “first-generation students are less likely to develop strong relationships with other students and to become involved in campus clubs and organizations.” (p. 277) Institutions can best serve this population by implementing special programming that includes on-going engagement with faculty and staff and regular opportunities to connect socially with peers from similar backgrounds. (Engle and Tinto, 2008)

In a study of higher-performing large postsecondary institutions, Engle and O'Brien (2007) found that an important shared characteristic was the ability of these institutions to create a strong sense of community, even despite their diverse populations in which most students live and work off campus. Students regularly participated in special programs and were involved in college and department-sponsored events that helped to “scale down” and “personalize” the college experience.

**It is established that strong social connections among students and social support at the institutional level are associated with the qualities of integration and commitment that yield academic success—namely, retention, good grades, and persistence to degree completion.** But there is a lack of empirical evidence explaining how students, particularly disadvantaged students and nontraditional students on commuter campuses, become integrated in the ways that lead to greater success. More is known about the processes rather than the specific programs. (Karp, 2011)

A review of the research literature does, however, reveal that a few mechanisms have a growing body of evidence behind them supporting their efficacy and making them promising practices. These include learning communities, engagement, and intrusive approaches to advising and counseling services, as profiled below.

*“Meaningful social relationships promote persistence by helping students feel comfortable in college and by providing them access to important information. Promoting social relationships is particularly important for nontraditional students, who often have fewer opportunities to create them on their own due to competing demands for their time.”*

–Karp, 2011, p. 1



**Implement a strong learning community infrastructure as a required component of the first-year experience.**

Learning communities are assigned cohorts of students that together take multiple courses—typically focused on developmental skill areas, academic themes, or careers—and with the additional purpose of building social relationships with peers and instructors. Over the past few decades, learning communities have been receiving a growing amount of attention and implementation at postsecondary institutions while quantitative research supporting the practice grows as well. Currently, researchers, including those at the Center for Community College Student Engagement (2014) recommend learning communities as a high-impact practices to support students.

In reviewing published studies, Karp (2011) determined that students involved in learning communities were more likely to participate in campus activities and report a greater sense of social connection. As for learning outcomes, students in well-implemented learning communities featuring high levels of support and strong interpersonal relationships had higher grades and retention rates compared to those of students in weaker learning communities and students not involved in any learning community.

Engstrom and Tinto (2008) found through their analyses that students in learning communities were significantly more likely to persist in college. Additionally, students in



learning communities were:

- significantly more engaged than students in the comparison groups along all measures of engagement involving peers, classmates, and faculty;
- significantly more positive in their perceptions of the encouragement they experienced on campus; and
- significantly more positive in their estimation of their own intellectual gains.

The authors concluded that there is something specific about being in a learning community that promotes the persistence of academically under-prepared community college students.

Kuh and colleagues at Indiana University (2004, 2005, 2007) have extensively studied student engagement and its effects on measures of success, and they cite learning communities as an example of high impact practices that promote engagement. According to Zhao and Kuh (2004), learning communities had a positive effect on grades in both the first and last year of college as well as persistence to the second year at the same institution, even after controlling for a host of pre-college characteristics and other variables linked to these outcomes, such as merit aid and parental education.

In a review of the literature on learning communities, Love (2012) cited a variety of positive outcomes for disadvantaged postsecondary students, including higher retention rates and improved pass rates in college level ESL courses. Love profiles the implementation of a first-year program that combined learning communities and experiential learning at Wagner College, which resulted in increased geographic and ethnic diversity within the student body as well as more students living on campus and higher retention rates.

The Center for Postsecondary Research has been studying learning communities since 2007. In a synthesis of findings (2012) that tracked participants in 174 learning communities at six community colleges over three years, a research team led by Visher reported that learning communities had small positive effects on progress in the subject targeted by the learning communities (either English or mathematics) and on overall academic progress as measured by total credits earned. Learning communities did not, however, have an effect on credits earned in courses outside of the targeted subject. Regarding administration, Visher's team found that though there was considerable variation in terms of integration of courses taken by learning communities, all sites had implemented the learning communities well and that the operational costs of the semester-long learning communities were low—an average of \$570 per student (costs were higher when additional advising and support mechanisms were embedded in the learning communities – and the additional supports yielded better long-term outcomes, including higher graduation rates.)

Regarding implementation, learning communities can take a variety of forms, depending upon the needs of students and the infrastructure of the institution. Zhao and Kuh (2005, p.4), referencing the 1999 work of Lenning and Ebbers, identify four general models of learning communities:

1. Curricular learning communities made up of students co-enrolled in two or more courses, often from different disciplines, that are linked by a common theme;
2. Classroom learning communities that treat the classroom as the locus of community-building by featuring cooperative learning techniques and group process learning activities as integrating pedagogical approaches;
3. Residential learning communities that organize on-campus living arrangements so that students taking two or more common courses live in close physical proximity, which increases the opportunities for out-of-class interactions and supplementary learning opportunities; and
4. Student-based learning communities that are specially designed for targeted groups, such as academically underprepared students, historically underrepresented students, honors students, students with disabilities, and students with similar academic interests, such as women in math, science and engineering.

In their research, Engstrom and Tinto (2008) determined that to create a true “community of learners” faculty must implement four key strategies:

1. Use active and collaborative pedagogies that engaged students with their peers;
2. Collaborate with other faculty to develop an integrated, coherent curriculum;
3. Integrate campus services and programs into the learning community experience; and
4. Develop personal relationships with students through which high levels of support and encouragement are provided.



**Require intentional, intensive engagement with campus life for first-year students.**

According to George D. Kuh (Kuh et al., 2007), a foremost researcher on student engagement at the postsecondary level, engagement represents both the time and energy students invest in educationally purposeful activities as well as a host of behaviors that institutions can influence with teaching practices and programmatic interventions such as first-year seminars, service-learning courses, and learning communities. Other factors contributing positively to student engagement include living on campus (versus commuting), full-time enrollment status (versus part-time), working on campus for no more than 20 hours per week (versus working full-time off campus). The Center for Community College Student Engagement (2014) recommends that institutions make engagement “inescapable” for students.

Kuh and colleagues studied data from the 2000-2003 National Survey of Student Engagement (NSSE) from 18 baccalaureate degree-granting colleges and universities across the country to determine the relationships between key student behaviors and the

institutional practices and conditions that foster student success. The researchers made important findings showing the relationship between engagement and successful academic outcomes: “Engagement had positive, statistically significant effects on grades and persistence between the first and second year of study for students from different racial and ethnic backgrounds. Equally important, engagement had compensatory effects for historically underserved students in that they benefited more from participating in educationally purposeful activities in terms of earning higher grades and being more likely to persist.” (2007, Abstract)

**“Encourage engagement on the college campus: Colleges and universities must remove the barriers (primarily financial) that prevent low-income, first-generation students from fully participating and engaging in the experiences that are associated with success in college such as living on campus, involvement in extracurricular activities, interaction with faculty outside of class, and use of available support services.”**

—Engle and Tinto, 2008, *Moving Beyond Access: College Success for Low-Income, First-Generation Students*, p. 29

Engle and Tinto (2008) recommend that institutions employ the following mechanisms to engage students:

- Develop cohorts of study groups that foster campus community and provide an academic and social support system for low-income, first generation students.
- Focus on increasing interaction and engagement in the classroom in order to make use of the only time many low-income, first-generation students spend on campus.
- Structure classroom activities in ways that require students to become more involved in the learning process and with peers, such as using cooperative and problem-based learning.
- Offer additional opportunities for work-study to increase the amount of time these students spend on campus while meeting their financial needs.

Time on campus is an essential component to student success. In results of a study comparing the experiences, engagement, and intellectual development of first-generation versus second-generation college students, Pike and Kuh (2005) found: “If an institution is serious about improving first-generation student success rates, then it should require them to live on campus at least for the first year of college. For low-income, first-generation students, such a policy will clearly require additional financial assistance...Of course, for older students with families and full-time jobs, this is not an option. In those instances, innovative approaches are needed that attract nontraditional students and their families to spend time on campus.” (p. 291)



**Utilize an “intrusive” approach to in-person advising and counseling services, and make retention a primary focus of advising programs.**

As mentioned previously, the caseloads of advisors and counselors at many postsecondary institutions are too numerous and the budgets too small for the ratios to change. If college-wide advising efforts are supplemented by technology and built around guided pathways, (Complete College America, 2012) and non-academic support is delivered via freshman-year student success courses in which larger numbers of students are reached than possible in one-on-one sessions (Karp, 2011), then advisors and counselors can more effectively target on the needs of individual students, and serve the neediest students better (CCA, 2012). Additionally advising staff would be freer to make participation in their services mandatory for low-income, first-generation students—a policy advocated by researchers in the field. (Karp, 2011; Engle and Tinto, 2008)

It is critical to emphasize, however, that technology has great potential to enhance and extend postsecondary institutions’ capabilities to monitor student progress and better support students by making reporting personalized, immediate, and interactive. But technology cannot replace the need for in-person advising; indeed “too much reliance on technology for advising may be counterproductive, and innovations should be implemented thoughtfully” (Karp, 2011, p. 3). Research shows that many disadvantaged college students lack the access, experience, and sense of agency necessary for online-based advising tools to be sufficient and effective for this population and that these students in particular need direct humanized support. (College Board Advocacy and Policy Center, 2012; Karp, 2011)

For a dual-pronged advising systems with strong technology and in-person components to be effective, there must be a “high degree of information sharing between faculty in the classroom, staff in the academic and social support programs, and the students themselves... While these programs can help all students succeed in college, they have been found to be particularly effective with at-risk populations like low-income, first generation students.” (Engle and Tinto, 2008, p. 25)

***“Making non-academic support an integral part of every student’s experience means that all students will receive help, even if they think they do not need it. Intrusive supports can involve making participation in advising and student success course mandatory.”***

*--Karp, How Non-Academic Supports Work:  
Four Mechanisms for Improving Student Outcomes, 2012, p. 3*

Also as with academic support, a driver of policy for college advising should be retention, with services aimed at keeping students registered and progressing toward degrees. Effective retention efforts at the advising level require significant expenses for both staffing and student aid. In a 2012 Study of the Community College Structures for Student Success, the College Board Advocacy and Policy Center found that 68% of responding institutions had a retention coordinator on staff, but on average, these colleges had one full-time equivalent or less designated to coordinate retention efforts. Furthermore, the coordinators were generally given more authority to implement new initiatives but little to no authority to fund them.

Retention efforts via advising would be improved if advisors were an integral part of orientation programs. The College Board Advocacy and Policy Center found in that same 2012 survey that, even though almost all institutions report offering student orientation, under 60% of responding institutions required first-time, first-year students to participate in orientation—and 40% of the orientation programs did not include one-on-one advising. Accompanying this statistic, CBAP noted that research on college transition programs suggest that more intensive and structured programming of new student orientations are needed. Integrating advising into the academic support provided at orientation would especially benefit at-risk students.

While much advising efforts are geared toward supporting students academically, it would be beneficial to students if advising and counseling services integrated in such a way so that students are guided toward becoming more engaged on campus, given the strong correlation between engagement and academic success (Kuh et al., 2007), and if multifaceted and mandatory advising included career counseling for individual students (Couturier, 2012).

In summation, postsecondary advising programs should follow a similar model of structured pathways advocated for academic programs, with students required to participate in both technologically enhanced and in-person “intrusive” advising in all aspects of a successful college experience—from orientation to graduation and into careers.

# B I B L I O G R A P H Y

- Achieving the Dream. (2014). *Right From the Start*. Silver Spring, MD: Author.
- ACT, Inc. (2013). *Changing Lives, Building a Workforce: Preparing Community College Students for Jobs and Careers*. Iowa City, IA: Author.
- Adult College Completion Network. (2012). *Strategies for Success: Promising Ideas in Adult College Completion*. Boulder, CO: Author.
- American Institutes for Research and SRI. (2013). *Early College, Early Success: Early College High School Initiative Impact Study*. Washington, DC: Author.
- An, B. (2013). The Influence of Dual-Enrollment on Academic Performance and College Readiness: Differences by Socio-Economic Status. *Research in Higher Education*, 54(4), 407-432.
- Bailey, T. (2009). Challenge and Opportunity: Rethinking the Role and Function of Developmental Education in Community College. *New Directions for Community Colleges*, 145, 11-30.
- Barnett, E. Bork, R. Mayer, A. Pretlow, J. Wathington, H. and Weiss, M. (2012). *An Impact Study of Eight Developmental Summer Bridge Programs in Texas*.
- Blanco, C. (2005). *Early Commitment Financial Aid Programs: Promises, Practices, and Policies*. Boulder, CO: Western Interstate Commission for Higher Education.
- Bright, J. and Pryor, R. (2011). The Chaos Theory of Careers. *Journal of Employment Counseling*, 48, 163-166.
- Bullock-Yowell, E., McConnell, A. and Schedin, E. (2014). Decided and Undecided Students: Career Self-Efficacy, Negative thinking, and Decision-Making Difficulties. *NACADA Journal*, 34(1), 22-34.
- Center for Community College Student Engagement. (2014). *A Matter of Degrees: Practices to Pathways (High-Impact Practices for Community College Student Success)*. Austin, TX: The University of Texas at Austin, Program in Higher Education Leadership.
- Charles A. Dana Center, Complete College America, Education Commission of the States, Jobs for the Future. (2012). *Core Principals for Transforming Remedial Education: A Joint Statement*.
- The College Board. (2014). *Trends in Student Aid*. New York, NY: Author.

- The College Board. (2008). *The Effectiveness of Student Aid Policies: What the Research Tells Us*. Baum, S. McPherson, M. and Steele, P. Eds. New York, NY: Author.
- The College Board Advocacy and Policy Center. (2012). *Securing the Future: Retention Models in Community Colleges. Study of Community College Structures for Student Success (SCCSSS)*. New York, NY: Author.
- Community College Research Center. (2012). *What We Know About Dual Enrollment*. Research Brief. New York, NY: Author.
- Complete College America. (2014). *Four-Year Myth: Make College More Affordable, Restore the Promise of Graduating on Time*. Washington, D.C.: Author.
- Complete College America. (2012). *Guided Pathways to Success: Boosting College Completion*. Washington, D.C.: Author.
- Complete College America. (2012). *Remediation: Higher Education's Bridge to Nowhere*. Washington, D.C.: Author.
- Complete College America. (2011). *Time is the Enemy*. Washington, D.C.: Author.
- Couturier, L. (2012). *Cornerstones of Completion: State Policy Support for Accelerated, Structured Pathways to College Credentials and Transfer*. Boston, MA: Jobs for the Future and Completion by Design.
- Creager, M. (2011). Practice and Research in Career Counseling and Development: Annual Review-2010. *The Career Development Quarterly*. 59, 482-527.
- DeAngelo, L., Franke, R., Hurtado, S., Pryor, J. and Tran, S. (2011). *Completing College: Assessing Graduation Rates and Four-Year Institutions*. Los Angeles, CA: Higher Education Research Institute, UCLA.
- Education Advisory Board. (2012). *Building Guided Pathways to Success*. Washington, D.C.: Author.
- Engle, J., and O'Brien, C. (2007). *Demography Is Not Destiny: Increasing the Graduation Rates of Low- Income College Students at Large Public Universities*. Washington, DC: The Pell Institute for the Study of Opportunity in Higher Education.
- Engle, J. and Tinto, V. (2008). *Moving Beyond Access: College Success for Low-Income, First-Generation Students*. Washington, DC: The Pell Institute for the Study of Opportunity in Higher Education.
- Engstrom, C. M., and Tinto, V. (2008). Learning Better Together: The Impact of Learning Communities on the Persistence of Low-Income Students. *Opportunity Matters*, 1, 5-21.

- Erford, B. and Crockett, S. (2012). Practice and Research in Career Counseling and Development: Annual Review-2011. *The Career Development Quarterly*. 60, 290-332.
- Faulconer, J., Geissler, J. Majewski, D. and Trifilo, J. (2014). Adoption of an Early-Alert System to Support University Student Services. *The Delta Kappa Gamma Bulletin*, 80(2), 45-48.
- Folsom, B. and Reardon, R. (2001). The Effects of College Career Courses on Learner Outputs and Outcomes: Technical Report No. 26 Revised. Center for the Study of Technology in Counseling and Career Development. Retrieved January 9, 2015:  
<http://www.career.fsu.edu/documents/technical%20reports/Technical%20Report%2026/Technical%20Report%2026.html>
- Freeman, E. (2012). The Design and Implementation of a Career Orientation Course for Undergraduate Majors. *College Teaching*, 60, 154-163.
- Grantmakers for Education. (2010). From Access to Success: A Funders Guide to Ensuring More Americans Earn Postsecondary Degrees. Portland, OR: Author.
- Harrington, T. and Long, J. (2013). The History of Interest Inventories and Career Assessments in Career Counseling. *The Career Development Quarterly*, 61, 83-92.
- Hughes, A., Gibbons, M. and Mynatt, B. (2013). Using Narrative Career Counseling with the Underprepared College Student. *The Career Development Quarterly*, 61, 40-49.
- Institute for Higher Education Policy (2012). The Role of Community-Based Organizations in the College Access and Success Movement. Washington, DC: Author.
- Jenkins, D. and Cho, S. (2013). Get with the Program...And Finish It!: Building Guided Pathways to Accelerate Student Completion. *New Directions for Community Colleges*. 2013(164) 27-35.
- Jenkins, D. and Weiss, M. (2011). Charting Pathways to Completion for Low-Income Community College Students,” CCRC Working Paper No. 34. New York, NY: Community College Research Center, Teachers College, Columbia University.
- Johnson, N. (2011). Three Policies to Reduce Time to Degree. Washington, D.C.: Complete College America.
- Kalchik, S. and Oertle, K. (2011). The Relationship of Individual Career Plans, Programs of Study, and Career Pathways. Office of Community College Research and Leadership: *Transition Highlights*, Issue 3.
- Karp, M. (2011). How Non-Academic Supports Work: Four Mechanisms for Improving Student Outcomes. CCRC Brief No. 54, New York, NY: Community College Research Center, Teachers College, Columbia University.



- Kosine, N., Steger, M. and Duncan, S. (2008). Purpose-Centered Career Development: A Strengths-Based Approach to Finding Meaning and Purpose in Careers. *Professional School Counseling*, 12 (2), 133-136.
- Kuh, G., Cruce, T. Shoup, R. Kinzie, J., and Gonyea, R. (2007). Unmasking the Effects of Student Engagement on College Grades and Persistence. Bloomington, IN: Center for Postsecondary Research, Indiana University.
- Kuh, G., Kinzie, J., Schuh, J. and Whitt, E. (2006). Student Success in College: Assessing the Conditions for Educational Effectiveness, Introduction to the Inventory for Student Engagement and Success. Columbia, SC: National Resource Center for the First-Year Experience and Students in Transition.
- Love, A. G. (2012). The Growth and Current State of Learning Communities in Higher Education. *New Directions for Teaching and Learning*. 132. 5-18.
- Lumina Foundation for Education. (2013). A Stronger Indiana Through Higher Education. Indianapolis, IN: Author.
- Makela, J. (2006). Advising Community College Students: Exploring Traditional and Emerging Theory. *In Brief*: Office of Community College Research and Leadership.
- Miller, A., Erisman, W. Bermeo, A. and Taylor Smith, C. (2011). Sealing the Gaps: Supporting Low-Income, First-Generation Students at Four-Year Institutions in Texas Post-Transfer. Washington, DC: The Pell Institute for the Study of Opportunity in Higher Education.
- Murphy, S. and Ensher, E. (2006). Establish a Great Mentoring Relationship. *T&D*: American Society for Training and Development.
- Navarro, D. J. (2008). A Transformative Education to Bridge the Digital Divide. Washington, DC: American Youth Policy Forum.
- Noble, J. and Sawyer, R. (2013). A Study of the Effectiveness of Developmental Courses for Improving Success in College. ACT Research Report Series. Iowa City, IA: ACT, Inc.
- Noel-Levitz, Inc. (2011). 2011 National Pilot Study/Research Report—The Attitudes of Second-Year College Students. Coralville, IA: Author.
- Offenstein, J., Moore, C. and Shulock, N. (2010). Advancing by Degrees: A Framework for Increasing College Completion. Institute for Higher Education Leadership and Policy and The Education Trust.
- Pike, G. and Kuh, G. (2005). First- and Second-Generation College Students: A Comparison of Their Engagement and Intellectual Development. *The Journal of Higher Education*, 76(3), 276-300.

- Porfeli, E. and Skorikov, V. (2010). Specific and Diverse Exploration During Late Adolescence. *Journal of Career Assessment*, 18(1), 46-58.
- Public Agenda. (2014). Guided Pathways to Student Success: Perspectives from Indiana College Students and Advisors. New York, NY: Author.
- Rheinheimer, D. Grace-Odeleye, B. Francois, G. and Kusorgbor, C. (2010). Tutoring: A Support Strategy for At-risk Students. *Learning Assistance Review*, 15(1), 25-33.
- Roessler, R., Hennessey, M., Hogan, E. and Savickas, S. (2009). Career Assessment and Planning Strategies for Postsecondary Students with Disabilities. *Journal of Postsecondary Education and Disability*, 21(3), 126-137
- Savickas, M. (2011). Constructing Careers: Actor, Agent, and Author. *Journal of Employment Counseling*, 48, 179-181.
- Scott-Clayton, J. (2012). Do High Stakes Placement Exams Predict College Success? CCRC Working Paper No. 41. New York, NY: Community College Research Center, Teachers College, Columbia University.
- Scott-Clayton, J. (2011). The Shapeless River: Does a Lack of Structure Inhibit Students' Progress at Community Colleges? CCRC Working Paper No. 25. New York, NY: Community College Research Center, Teachers College, Columbia University.
- Scott-Clayton, J. and Rodriguez, O. (2012). Development, Discouragement, or Diversion? New Evidence on the Effects of College Remediation. NBER Working Paper No. 18328. Cambridge, MA: National Bureau of Economic Research.
- Shaffer, L. and Zalweski, J. (2011). Career Advising in a VUCA Environment. *NACADA Journal*, 31(1), 64-74.
- Shaffer, L. and Zalweski, J. (2011). "It's What I Have Always Wanted to Do.": Advising the Foreclosure Student. *NACADA Journal*, 31(2), 62-77.
- Struhl, B. and Vargas, J. (2012). Taking College Courses in High School: A Strategy for College Readiness, The College Outcomes of Dual Enrollment in Texas. Boston, MA: Jobs for the Future.
- Travers, C. (2011). Unveiling a Reflective Diary Methodology for Exploring the Lived Experiences of Stress and Coping. *Journal of Vocational Behavior*, 79(1), 204-216.
- Vandal, B. (2014). Promoting Gateway Course Success: Scaling Corequisite Academic Support. Washington, D. C.: Complete College America.

- Visher, M., Weiss, M. Weissman, E., Rudd, T. and Heather D. Wathington. (2012). The Effects of Learning Communities for Students in Developmental Education: A Synthesis of Findings from Six Community Colleges.
- Wathington, H., Barnett, E., Weissman, E., Teres, J., Pretlow, J. and Nakanishi, A. (2011). Getting Ready for College: An Implementation and Early Impacts Study of Eight Texas Developmental Summer Bridge Programs. New York, NY: National Center for Postsecondary Research.
- Zhao, C. and Kuh, G. (2004). Adding Value: Learning Communities and Student Engagement. *Research in Higher Education*, 45(2) 115-138.
- Zikic, J. and Franklin, M. (2010). Enriching Careers and Lives: Introducing a Positive, Holistic, and Narrative Career Counseling Method that Bridges Theory and Practice. *Journal of Employment Counseling*, 47, 180-189.