

What We Are Learning About Guided Pathways

Part 1: A Reform Moves From Theory to Practice

By Davis Jenkins, Hana Lahr, John Fink, and Elizabeth Ganga

In their 2015 book, *Redesigning America's Community Colleges: A Clearer Path to Student Success*, CCRC researchers Thomas Bailey, Shanna Smith Jaggars, and Davis Jenkins argued that for community colleges to substantially improve graduation rates and narrow gaps in completion among student groups, isolated programmatic interventions will not suffice. Synthesizing two decades of research on community colleges—and drawing on research in behavioral economics, organizational behavior, and cognitive science—Bailey, Jaggars, and Jenkins argued that colleges needed to fundamentally redesign their programs and support services in ways that create clearer, more educationally coherent pathways to credentials that in turn prepare students for success in the workforce and further education in fields of economic importance to their regions.

These “guided pathways” reforms address a fundamental problem with how community colleges are organized: Because these colleges were founded with the mission of providing broad access to higher education, they focus on attracting students with dozens or hundreds of programs. But students are often left to their own devices to pick a course of study and piece together their schedules based on often confusing and incoherent class lists and program information. In these “cafeteria colleges,”¹ a majority of students do not complete a credential, and even those who do often waste time and money on courses that do not count toward a community college credential or a bachelor’s degree. Advising and other supports are available, but students have to seek them out, and the students who need these services most are often the least likely to use them. Students from educationally and economically disadvantaged backgrounds, who tend to be disproportionately represented at community colleges, are often poorly prepared to navigate the college experience, which exacerbates equity gaps.

At their core, guided pathways reforms involve clearly mapping programs to specify course sequences, progress milestones, and program learning outcomes so that students know what they need to do to prepare for a career and further education and training in their field of interest. With program maps as guides, students are supported from the very beginning of their college experience to explore career and academic options, choose a program of study, and develop a full-program educational plan. The program maps simplify students’

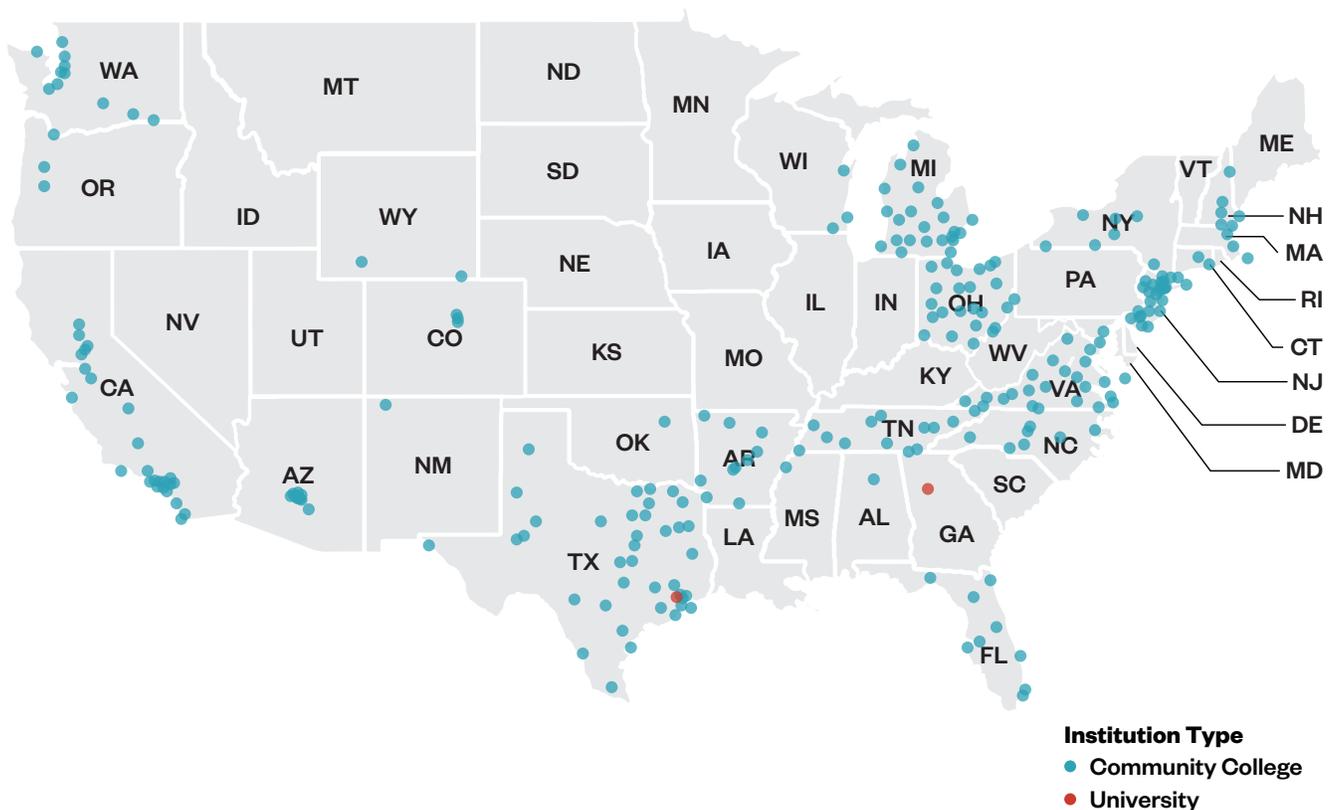


Guided pathways reforms involve clearly mapping programs to specify course sequences, progress milestones, and program learning outcomes.

decision-making, and their academic plans motivate them by showing them what they have accomplished and how much further they have to go to complete their programs. With every student on an academic plan, colleges are better able to provide predictable schedules, frequent feedback, and targeted support to help students stay on track and complete their programs on time. And with programs clearly mapped, faculty are better able to ensure that students are building the skills across their programs that they will need to succeed in employment and further education.

The guided pathways approach has become a national reform movement in community colleges. Major national initiatives such as the American Association of Community Colleges' (AACC) Pathways Project are helping colleges throughout the country to implement the reforms and refine the model. Higher education agencies and statewide organizations such as the Student Success Centers are also facilitating guided pathways reforms in numerous states, including Arkansas, California, Connecticut, Michigan, New Hampshire, New Jersey, New York, North Carolina, Ohio, Oregon, Tennessee, Texas, Virginia, and Washington. As shown in Figure 1, as of spring 2018, more than 250 community colleges have committed to undertaking large-scale guided pathways reforms as part of national, state, or regional efforts; many other colleges are doing so on their own.

Figure 1.
A National Movement: Colleges Implementing Guided Pathways



Guided Pathways: More Than Program Maps

Guided pathways reforms can be broken into four main practice areas:²

1. mapping pathways to student end goals,
2. helping students choose and enter a program pathway,
3. keeping students on path, and
4. ensuring that students are learning.

As described below, in each of these areas, colleges need to make changes in their mindset about institutional practice and policy for pathways reforms to be implemented effectively.

Mapping Pathways to Student End Goals

In the guided pathways model, colleges typically organize programs into broad career-focused fields, or *meta-majors*, which help current and prospective students and others understand the range of program offerings. Faculty and student services staff work together—along with employers and four-year transfer college partners—to map out every program, indicating which courses students should take in what sequence and highlighting courses that are critical to program success, along with cocurricular requirements and progress milestones. Rather than referring students to an algebra–calculus track by default, colleges guide students to take math courses that are relevant to their field of interest.³ Information on program requirements is easily accessible on the college’s website so students can find out what courses they must take, how long it will take them to complete their chosen program, and what opportunities for employment in the field or transfer to a four-year program are available to program graduates.

Meta-Majors by Another Name

Few colleges use the term *meta-majors* to describe their program groupings. Colleges generally use other terms, including:

- academic and career communities
- academic and career pathways
- areas of interest
- focus areas
- institutes
- pre-majors
- schools

Figure 2.
Rethinking Program Mapping

FROM		TO
Alphabetical program lists	>	Academic and career communities (meta-majors)
A la carte courses (distribution requirements and electives)	>	Program maps with designated course sequences, critical courses, and cocurricular requirements
Algebra as default math requirement	>	Program- or field-specific math requirements
Certificates and degrees as disconnected credentials	>	Certificates or certifications embedded in degree pathways
Unclear connections between programs and career and transfer options	>	Clearly specified career and transfer opportunities and requirements for all programs

Helping Students Choose and Enter a Program Pathway

Under the pathways model, colleges redesign the new student experience to help students explore career and college options, choose a program of study, and develop a full-program educational plan early on. Undecided students begin homing in on a program by choosing a meta-major, such as social and behavioral sciences; science, technology, engineering, and mathematics (STEM); or health. The first-term curriculum for each meta-major includes an introductory course in the student’s field of interest and a course centered on college and career planning and success, in which students are required to research career and academic interests. Students work with an advisor to develop a customized full-program educational plan by the end of the first term.

In place of prerequisite remedial coursework—which research by CCRC and others suggests diverts too many students onto a remedial track rather than building their skills for college⁴—colleges offer college-level courses with integrated supports in pathway-appropriate math and English and other foundational courses in students’ field of interest. The goal is for all students to complete most of their core introductory courses in their first year.

Colleges work with K-12 systems to help students explore career and college interests while they are in middle and high school and to prepare them to enter a college-level program of study in a field of interest directly after high school. As increasing numbers of high school students take courses at community colleges,⁵ colleges are using courses they offer through dual enrollment or dual credit arrangements to help students explore their interests.

Entering a Pathway: Sinclair Community College

Sinclair Community College has revamped its intake system so that all entering students are helped to explore options and interests. Students who have not decided on a major explore their strengths and interests by taking career assessments and investigating career fields associated with the college’s six career communities (meta-majors). By the end of the first term, students are encouraged to pick a career community and to develop a full-program career and transfer plan that they and the college will use to monitor their progress toward completion.

Figure 3.
Rethinking Student Onboarding

FROM		TO
Job and transfer support for students approaching completion	>	Career and college exploration and planning for all students from the start of college
Current semester schedules	>	Full-program educational plans
Academic assessments of students’ readiness for college-level work	>	Holistic assessments of students’ plans, goals, and challenges
Prerequisite remediation	>	Corequisite academic support
Algebra and English composition courses as college gatekeepers	>	Courses (not just math and English) critical for program success
A la carte dual credit courses in high school	>	Exploration of career/academic pathways beginning in high school

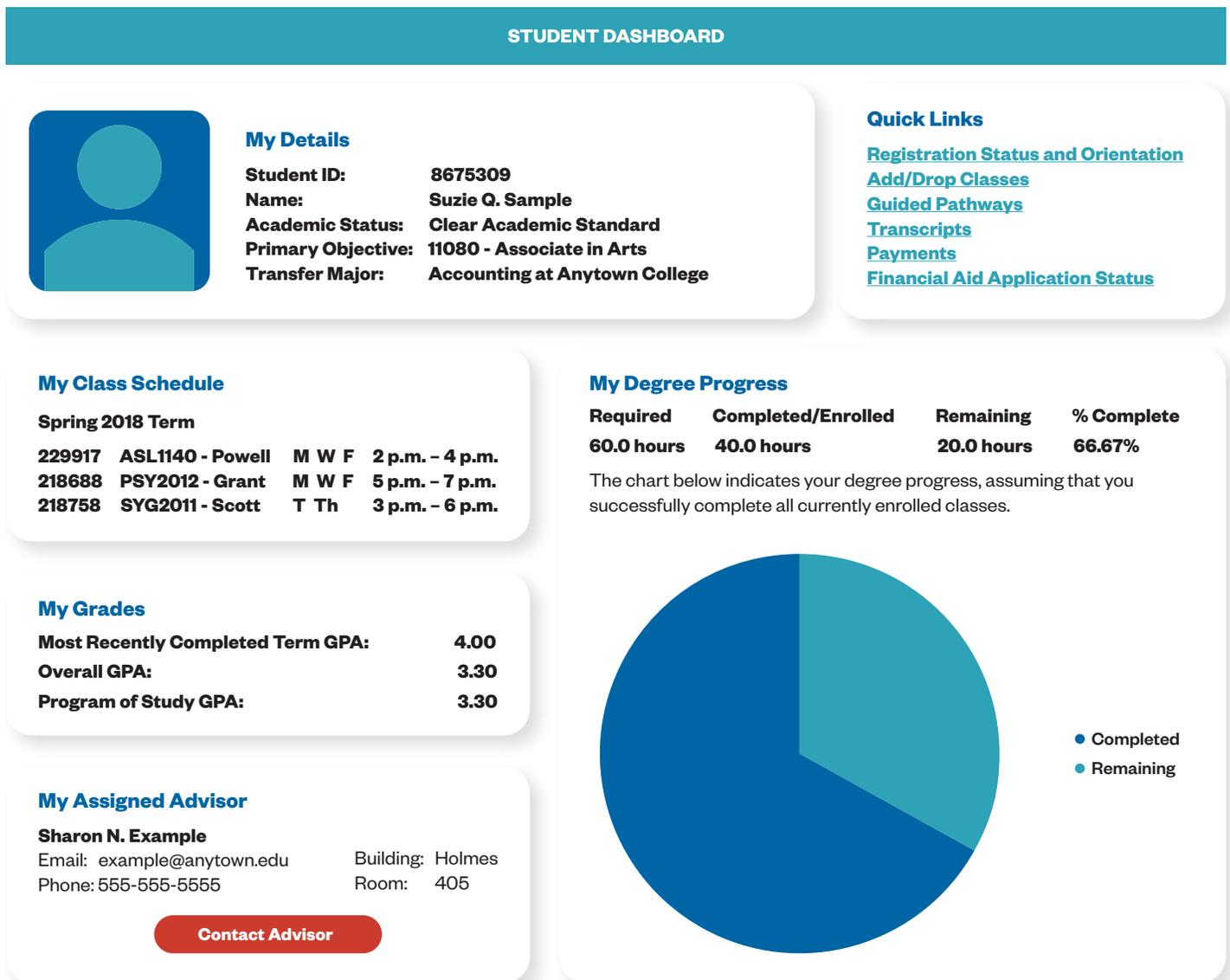
Keeping Students on Path

Under the guided pathways model, advisors know which program each student is in and can see how far along students are toward completing their program plans. Likewise, students can easily see their progress and what they need to do to complete their program—for instance, via an online dashboard like that shown in Figure 5. Using advising technologies, advisors and students receive alerts when students deviate from their plans or struggle in a critical program course, and policies and supports are in place to help students get back on track as soon as possible. Counseling is provided to students who are unlikely to be accepted into limited-access programs, such as nursing, to redirect them to a more viable path to credentials and a career. Colleges schedule classes to ensure that students can take the courses on their educational plans when they need them, can plan their lives around school from one term to the next, and can complete their programs within their intended timelines.

Figure 4.
Rethinking Student Advising

FROM		TO
Information dump at orientation		Support for major decisions along students' paths
Class scheduling based on what suits the college's schedule		Class scheduling planned to fit students' plans and schedules
Student progress gauged based on full-time vs. part-time status		Student progress conceived of as on-plan vs. off-plan
Advising and teaching thought of as two separate endeavors		A student-support environment where advisors teach and teachers advise
Course registration as a task where students self-advise		Course registration monitored by advisors to ensure students register for the right courses on their plan

Figure 5.
Example of an Online Dashboard Allowing Students to Monitor Their Progress



Ensuring That Students Are Learning

In the pathways model, program learning outcomes are aligned with the requirements for success in further education and employment in a related field. Faculty members assess whether students are mastering learning outcomes as they progress through a program and use the results to improve instruction in their programs. Some colleges are exploring ways to document student learning with portfolios and other methods beyond just grades.

Colleges work to ensure that teaching is effective, emphasizing collaborative, active learning that is relevant to students' field of interest. This includes teaching and learning in the classroom and outside the classroom, such as through internships, co-ops, service learning, or project-based learning.

For example, to help students gain real-world experience and add another dimension to their learning, Cincinnati State Technical and Community College in Ohio requires that students in all programs participate in a paid, four-credit cooperative education (*co-op*) experience in order to graduate. The co-ops help students explore career options, connect with job opportunities in their field of study, and apply what they are learning in class. Co-op coordinators work with students and employers to set learning goals for each student's experience.

Co-ops align with the guided pathways model in that they help ensure that programs are designed with preparation for careers in mind and that learning outcomes are embedded in program coursework.⁶

Figure 6.
Rethinking Teaching and Learning

FROM		TO
General education learning outcomes	>	Meta-major learning outcomes
Generic general education courses	>	Contextualized general education courses
In-class learning	>	Learning both inside and outside the classroom
Student transcripts	>	Grades and portfolios used together to create a rich picture of student learning

Promising Evidence From Early Adopters

Before guided pathways, community college reforms tended to be piecemeal, targeting small groups of students or one component of the student experience. Initially positive results generally faded over time and had little effect on the ultimate goal of improving graduation rates and other institution-level indicators of success. In contrast, the guided pathways model calls for a full institutional redesign to ensure that reforms move the needle on success for large numbers of students and close gaps in achievement for students from underserved groups.

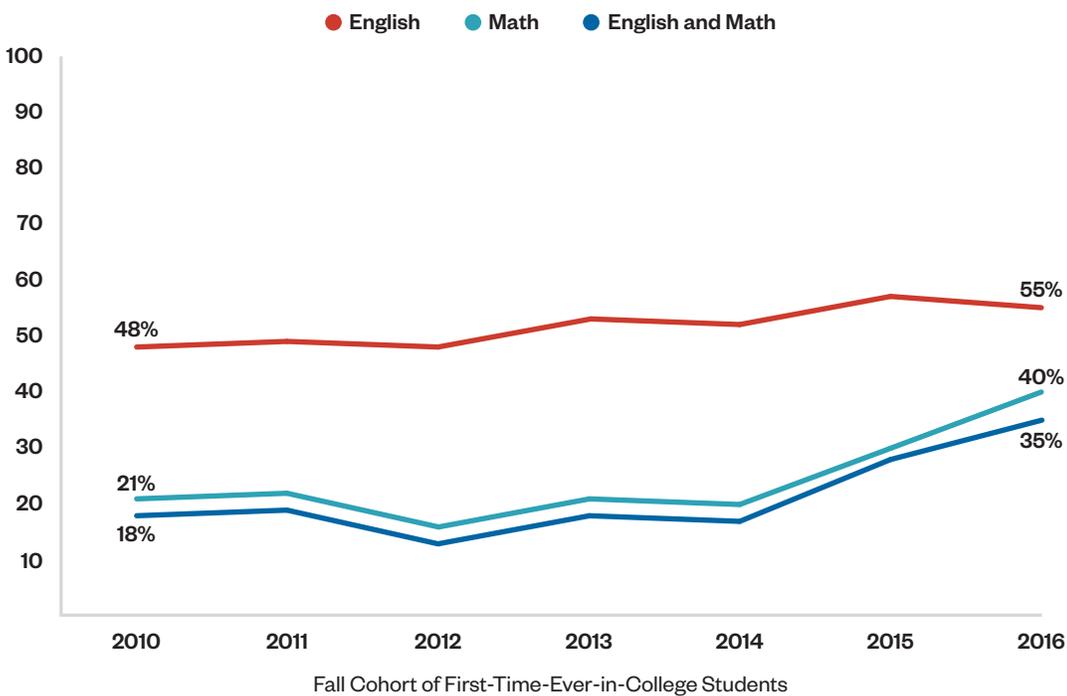
Because colleges have only recently begun implementing the full slate of guided pathways reforms, which take multiple years to implement completely, we are only beginning to see the early impacts of guided pathways. (For a timeline of guided pathways implementation, see Part 3 of this packet.) Colleges that were early adopters are seeing improvements in students' early momentum indicators,⁷ such as the number of college credits they earn in the first year, their completion of gateway math and English courses in the first year, and the number of courses in a program they complete in the first year—all of which research suggests are leading indicators of higher completion rates over a longer period.⁸ Colleges that have been working on these reforms for several years are also beginning to see impacts on longer term outcomes, such as graduation rates.

Gateway Course Completion in the First Year

Cleveland State Community College in Tennessee has revamped its intake system for students to speed their entry into college courses. All students choose a career community (the college's term for meta-major) when they enroll. In the past, most students had to go through a sequence of prerequisite remedial courses in math, writing, and reading before they could take college-level math or English. Now, all new students are enrolled in college-level math and English. Those needing academic support (as indicated by lower scores on the ACT) are required to take a corequisite support course. In the past, most students also were advised to take algebra whether or not it was relevant to their program of study; now, students take math courses aligned with their career community, and most students are in programs that require statistics instead of algebra. As a result, the college has more than doubled the rate at which students complete both gateway English and gateway math in the first year (from 17 percent among fall 2014 entrants to 35 percent among fall 2016 entrants). Research by the Tennessee Board of Regents indicates that, historically, degree-seeking students who passed college-level English and math in their first year were much more likely to earn a college credential than were those who did not.⁹

Figure 7.

First-Year Completion of College Math and English at Cleveland State Community College



Increased First-Year Momentum and On-Time Graduation

Lorain County Community College in Ohio has been implementing reforms related to guided pathways since 2012, including organizing and mapping programs in its career pathways and redesigning advising to ensure that all new students are helped to explore career and college options and develop completion plans. During this time, Lorain has

seen improvements in several indicators of student success. Between 2010–11 and 2014–15, the fraction of students completing nine credit hours in their program of study in their first year increased from 19 percent to 30 percent. The three-year graduation rate for first-time, full-time students went from 8 percent for the 2008 cohort to 23 percent for the 2014 cohort—and at the same time, the number of excess credits earned by degree completers decreased, so students were earning degrees more efficiently. The number of credits on the transcripts of students who earned associate degrees decreased 7 percent from 2012–13 to 2016–17, saving students a substantial amount of money.¹⁰

On-Time Graduation Rates

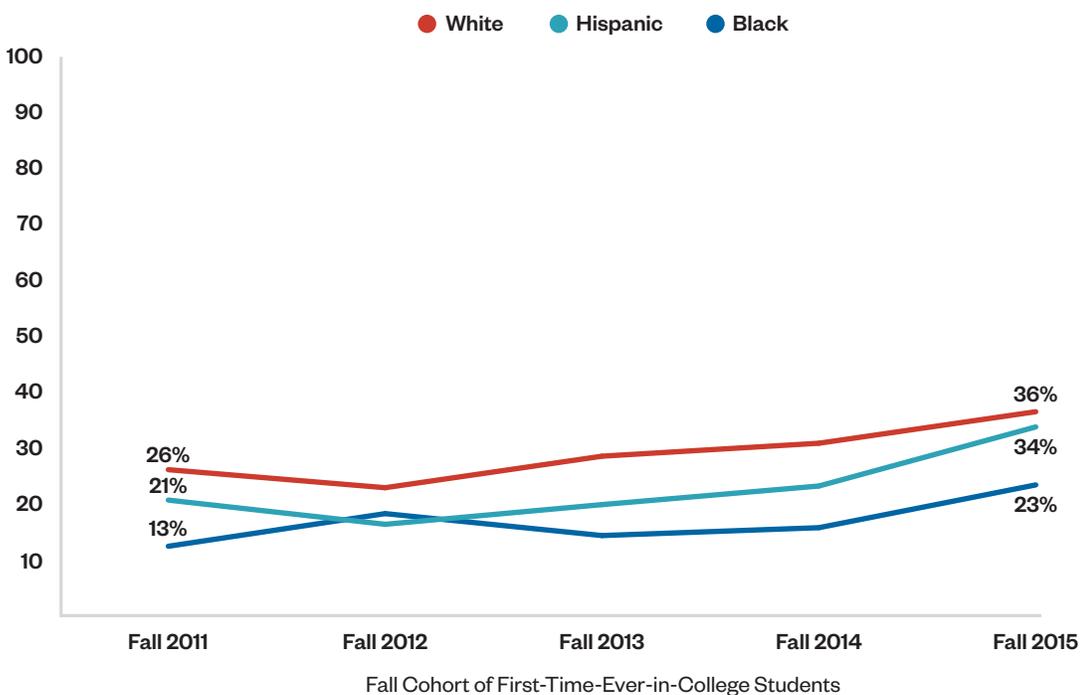
Indian River State College in Florida has been a national leader in creating a culture focused on student success and in implementing guided pathways, including:

- creating individual education plans for students based on program maps,
- enhancing advising,
- adding supports in gateway courses in subjects beyond math and English,
- improving the process for exploring programs and choosing majors, and
- making it easier for students to get the courses they need by creating yearlong course schedules.

In the wake of the changes, the college has seen increases in its graduation rates for all student groups in the last five years, as seen in Figure 8, which shows the percentage of students graduating in two years.¹¹

Figure 8.

Two-Year Graduation Rates of First-Time, Full-Time Students at Indian River State College



Student Experiences With Pathways

In interviews with 149 students at the City Colleges of Chicago, most said they were enthusiastic about the program maps and enhanced educational planning that the colleges had implemented starting in 2010 as part of a guided pathways reform called “Reinvention.”¹² A majority of students said that the program maps, individual plans, and academic monitoring were very helpful and motivated them to complete their studies. For some, having these systems and supports in place took the stress out of knowing if they were on the right path and whether their courses would count toward degrees and transfer.

Some were concerned the maps might restrict their ability to choose alternative courses or make it difficult to change majors, and some said they were overwhelmed by seeing the complete, multiyear plan. Students also experienced problems during the colleges’ transition to an upgraded student information system designed to improve monitoring of students’ progress because information on program requirements was inaccurate or outdated. The colleges’ advisors have since worked with administrators to ensure the information is up-to-date. In general, advisors played an important role in helping students understand the educational planning process and make the best use of the planning resources.

“[The educational plan] really made me feel at ease because I was able to see my next step and not have to worry.”

– City Colleges of Chicago student

Other CCRC Pathways Resources

Part 2 of this packet contains case studies of how colleges are approaching key pathways practices. Part 3 describes the process and timeline for implementing pathways and discusses how colleges can measure the effects of their efforts. CCRC will continue to conduct research on guided pathways reforms and their effects on student success and institutional performance. Consult our website for the latest findings.

Endnotes

1. For more on the cafeteria college and the thinking behind guided pathways, see Bailey, Jaggars, and Jenkins (2015).
2. Jenkins, Lahr, & Fink (2017b).
3. For more on math pathways, see dcmathpathways.org.
4. See, for example, Scott-Clayton and Rodriguez (2012).
5. For more on the rise and prevalence of high school dual enrollment at community colleges, see Fink, Jenkins, and Yanagiura (2017).
6. Jenkins, Lahr, & Fink (2017a).
7. For more on the concept of momentum, see Belfield, Jenkins, and Lahr (2016) and Part 3 of this packet.
8. See Jenkins and Bailey (2017) for a review.
9. Denley (2017).
10. Numbers provided by Lorain County Community College.
11. Numbers provided by Indian River State College.
12. For more on student attitudes toward guided pathways, see Fink (2017).

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What We Are Learning About Guided Pathways

Part 2: Case Studies

By Davis Jenkins, Hana Lahr, John Fink, Elizabeth Ganga, Elizabeth Kopko,
Amy E. Brown, and Porshèa Patterson

Guided pathways reforms require colleges to rethink how they teach and support students. The case studies below examine how colleges at the forefront of these reforms are transforming their programs and support services by implementing three key guided pathways practices: meta-majors, career exploration, and intensive advising. The three colleges are participating in the American Association of Community Colleges' Pathways Project, which is supporting more than 40 colleges nationally to implement guided pathways reforms at scale.¹

How Cleveland State Community College Is Using Meta-Majors

Meta-majors are clusters of programs in similar academic and career fields that can help students and others to understand a college's offerings—which often run to scores of programs—and help students explore, choose, and plan a major. Colleges are using meta-majors aligned with local and regional labor market needs as a framework for redesigning key aspects of the student experience, including orientation, first-year seminar courses, and academic advising. Meta-majors are also emerging as a framework for marketing and recruitment, program review and improvement, and professional development.

Cleveland State Community College in Tennessee developed its meta-majors, which it calls *career communities*, “from a student’s perspective,” organizing programs into seven clusters based on students’ career and academic interests rather than around the college’s four preexisting academic divisions. The career communities are advanced technologies; arts and humanities; business; education; healthcare; social sciences; and science, technology, engineering, and math (STEM). As the college was developing these communities, student services and institutional research staff conducted student focus groups to get feedback about the clusters and ensure that the categories made sense to students.

The college has organized its website around these career communities, assigning each community an icon and a color.² Students can browse the website by career community or by specific program. Career communities also have been added to recruitment materials. Welcome events, career fairs, and even commencement programs all use the



Colleges are using meta-majors aligned with local and regional labor market needs as a framework for redesigning key aspects of the student experience.

career community icons and color scheme to allow for instant identification and create a sense of belonging.

Career communities were first used to facilitate student onboarding starting in the 2015–16 academic year. Entering students were prompted to select a career community or a specific major in a community. During fall orientation, the college grouped students by career community for breakout sessions with faculty. By selecting a career community, students who are undecided on their major can begin to explore a broad area of interest and progress toward choosing a major in that field or switching to another field before they have taken too many credits.

The college is also organizing its efforts to redesign and improve its first-year experience course, Student Success Center, and program review process around the seven career communities. The career communities have become a central organizing principle that gives administrators, faculty, and students a clearer understanding of the college's core academic offerings, keeping students' interests and end goals in mind.

“We landed on ‘career communities’ because we think that really encapsulates what the purpose is of having meta-majors. It builds community for the students with each other, it builds community for the students with their faculty, and it’s also a place that we can plug in our alumni to connect meaningfully with current students and faculty.”

– Dr. Denise King, Vice President of Academic Affairs, Cleveland State Community College

Orientation

One of the first ways that Cleveland State used the career communities was to reorganize its new student orientation. Orientation at Cleveland State is a one-day event, during which students are grouped by their chosen career community and hear a presentation from a faculty member or dean about the different programs of study, career options, and types of degrees (transfer- or workforce-oriented) available in that community. Students who are unsure about their choice of career community attend a session to help them understand their choices. Once students decide on a career community—at least for the first term—they meet with a faculty advisor to select and register for first-semester classes based on academic maps created by faculty and student services staff for each community. Starting in fall 2018, students will register for a default set of first-semester courses that includes two courses related to their career community, English, math, and a first-year seminar. Since scheduling will occur by program rather than by course, registration for the first semester will be straightforward, giving students and advisors time to clarify the students' interests and intentions for college study.

First-Year Seminar

All first-time students are required to enroll in a first-year seminar taught by full-time faculty members or administrators and tailored to each career community. In addition to learning college success skills, students in the seminar complete the FOCUS 2 assessment to guide their career and education decision-making, research careers they are interested in, and create an educational plan to graduation. These plans are based on the sequenced, four-semester degree maps created by faculty and student services staff in each of the career communities, but they are individually customized based on the prior credits students bring to the college, their specific career and transfer goals, and their completion timeline. In fall 2018, Cleveland State is planning to pilot specially designed learning communities that pair first-year seminars in each career community with another course, such as English composition, with career community-specific content.

Student Success Center

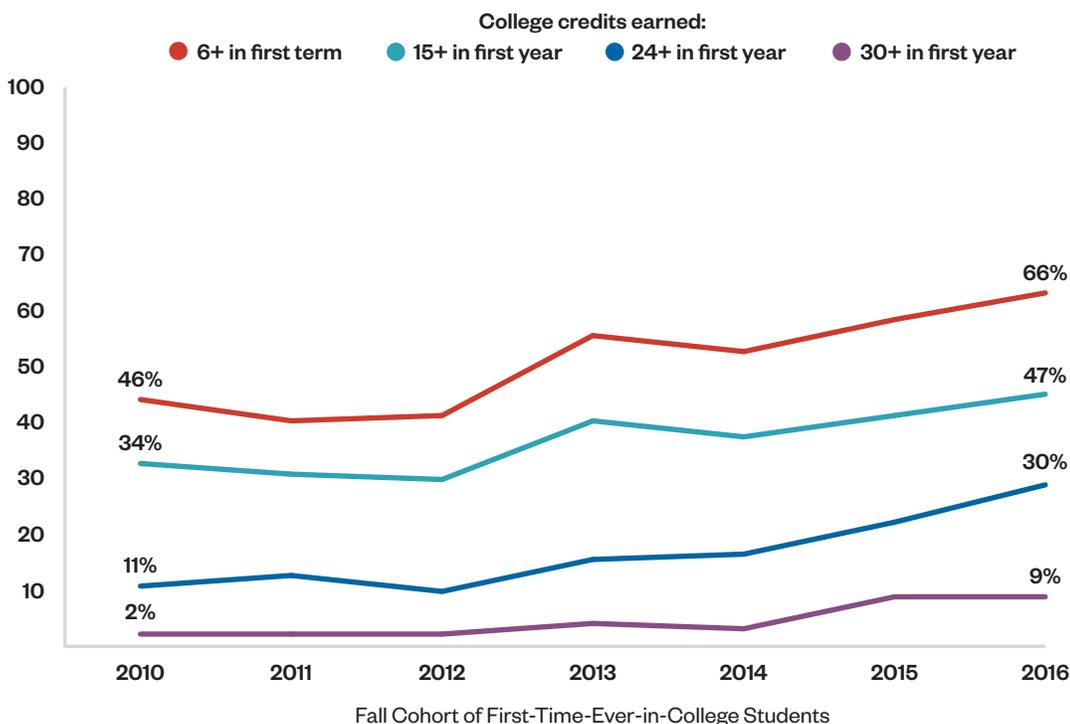
To support students along their paths toward graduation, Cleveland State recently created the Student Success Center. The Student Success Center is a group of success coaches who connect students to campus resources, including counseling staff. While the functions of the Student Success Center continue to evolve, Cleveland State's intent was to supplement faculty advising by having coaches reach out to students between regular advising appointments (which are required in order to register each semester), and to expand capacity to identify and contact struggling students before they fail a course or fall off their program plan. Thus, one of the responsibilities of the student success coaches is to respond to alerts that faculty initiate through the college's Starfish software when students are struggling. The center was opened in 2016 with no new resources; instead, the college reorganized several positions from other student services areas. Currently, the center has two full-time staff members and several part-time staff members to serve the college's approximately 3,300 students. As the center expands, the college is planning to place individual success coaches within each career community.

Promising Improvements in Early Indicators

Cleveland State's reforms have been accompanied by gains in early momentum indicators, or near-term measures of increased completion rates over a longer term.³ In addition to doubling the percentage of students completing a college-level math course in their first year (from 20 percent of the fall 2014 cohort to 40 percent of the fall 2016 cohort), Cleveland State has shown an upward trend in indicators of credit momentum since fall 2013, as shown in Figure 1, with greater proportions of students reaching credit accumulation milestones in their first term and first year. College leaders believe these improvements reflect the college's efforts to redesign new student orientation and advising around the career communities.

Figure 1.

Indicators of Credit Momentum at Cleveland State Community College

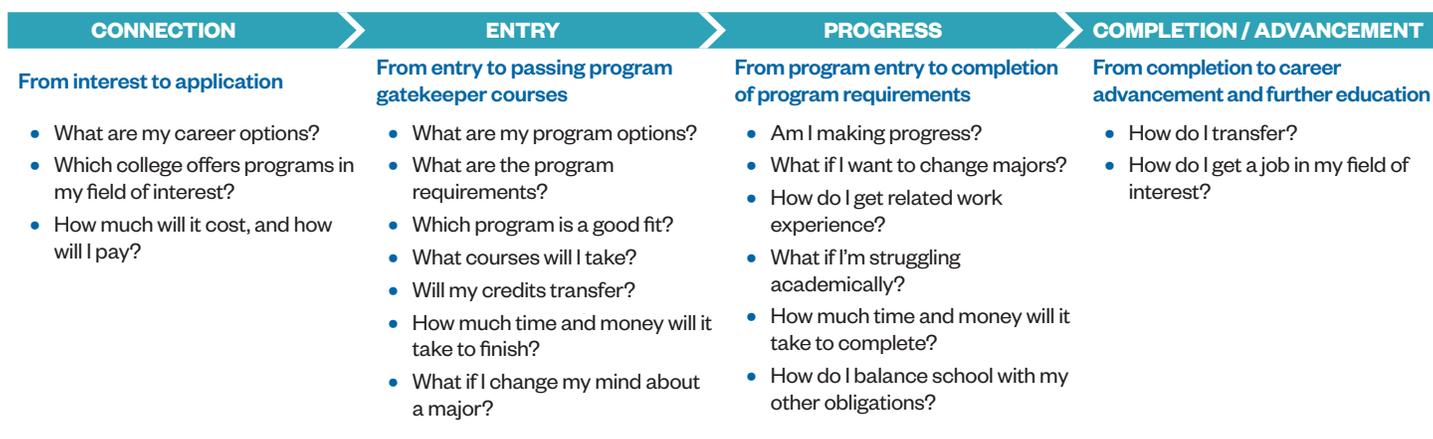


How Jackson College Is Redesigning Advising From Entry Through Completion

Redesigning advising is one of the most challenging parts of colleges' guided pathways work, and colleges are approaching it in many different ways. To provide better support for students along their pathways into and through college, institutions are considering what advising students need at key decision points along the way to a credential. (See Figure 2.) Students face important decisions as they connect to a college, enroll and choose programs, progress through programs, and advance in their careers and to further education.

Figure 2.

Key Decision Points on Students' Path



Note: This diagram is adapted from Completion by Design's (2016) Loss-Momentum Framework.

Changes in Advising Staff and Roles

A successful advising redesign requires student services staff to work closely with academic departments, financial aid, information technology, and other parts of the college to provide optimal guidance and support to students, enabling them to make steady progress and complete their programs on schedule.⁴

Prior to its advising redesign, Jackson College in Michigan had four advisors—one attached to each of its four main program areas—for more than 7,000 students (a student–advisor ratio of 1,750:1). There were long lines and wait times to see advisors, so most students registered for courses without talking to an advisor. Over the past two years, the college has hired 12 new advising staff and tasked other departments (e.g., Veterans Affairs, the International Student Institute, etc.) with providing broader, personalized, relationship-based support. These changes resulted in a total of 21 employees being assigned to the new role of “student success navigator.” Along with lower enrollment, the changes in staffing brought the student–advisor ratio to 250:1.

Navigators are paired with students throughout their time at the college. Although the navigators are trained as generalists, they are assigned to serve students within



Prior to its advising redesign, Jackson College in Michigan had four advisors for more than 7,000 students.

one of six specific *pathways* (the term used for meta-majors at Jackson). Navigators attend meetings of faculty from their assigned pathway and keep other advisors up to date on program changes and new information. With navigators embedded in each pathway, the college is hoping to foster long-term relationships between the navigators and students and faculty in each program area.



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Connection and Entry

A fundamental component of guided pathways is helping all students explore careers and programs early on. Jackson College starts this process *before* students enroll. Navigators call all new students before orientation to welcome them to the college and find out more about their goals (asking, for instance, “Do you plan to transfer? If so, to which university?”); their timeline for completion; if the students have any credits from Advanced Placement programs, dual enrollment, or prior study at another college; and what they want to study. For students who are less certain about their career or education goals, the navigators ask questions about their academic and personal interests and hobbies to help them choose a pathway to explore during their first semester. At the end of each call, the navigator confirms which orientation session the student will attend, and the student is registered for an orientation session based on this conversation. Students cannot attend orientation without first having this conversation with their navigator.

The college’s new student orientation sessions are organized by pathway. A new student profile questionnaire, administered during orientation, helps navigators find out more about students’ outside-of-school responsibilities, motivation, and personality; helps identify potential barriers to persistence; and gives students the opportunity to share any other information they want their navigators to know about them.

During the mandatory first-semester student success course, which is taught by faculty members and academically qualified navigators and student services staff, Jackson College holds showcases for each of its six pathways. Faculty members introduce themselves and their areas of interest and lead students on a tour of their facilities and labs to recruit interested students into their programs. Once they choose a program, students make a customized full-program educational plan as a course assignment and upload it to the college’s online registration and planning system, called JetStream. This plan lays out the courses the student will take each semester and once submitted is locked into the system.

Progression

Once students have created an educational plan in JetStream, they must meet with their navigator and get approval before changing their plan. Likewise, if students want to register for classes that are not on their plan for the following semester, they must receive approval from their navigator. Navigators, who have been trained in financial aid requirements and have access to students’ financial aid documents through the recently upgraded student information system, ensure that each student’s plan meets financial aid requirements.

All students at Jackson College are required to meet with their navigator face-to-face for registration every semester. Beyond this, navigators connect with each student at least

two additional times per term. These meetings may occur in person, but they can also take place through email, phone, FaceTime, or text. For new students, the first meeting takes place before the term begins or within the first three weeks to welcome students and ensure that they have their textbooks and that their financial aid is in place. The second meeting occurs at midterm to address any issues that have arisen and facilitate next-term registration, and the third meeting occurs near the end of term to ensure completion of coursework and progression to the next term. In addition to the required meetings, students who are struggling with classes or are flagged by faculty members for other issues, like poor attendance, may be required to have additional advising meetings. The college is working to monitor the progress of those students more systematically through its early alert system and additional outreach.

Completion

To prepare for internships and employment, students receive career counseling from Jackson College's Career Services Office and from their navigators. Career Services provides information on internship and job opportunities, as well as resume and cover letter writing assistance. Additionally, three navigators were recently certified as career coaches in an effort to better help students develop career goals and craft their academic plans accordingly. These navigators will soon be certified to train other navigators in career coaching.

An important element of pathways is ensuring that students have contact with faculty members and others in their field who can provide guidance and networking support. As part of its Total Commitment to Student Success (TCS²),⁵ Jackson College is building a culture in which responsibility for guiding students into and through programs is shared by all faculty and staff, regardless of their role at the college. As Jeremy Frew, vice president for student services at Jackson, said, the responsibility for advising students must be “distributed”—that is, it needs to be shared by faculty and other staff. Accordingly, faculty members at Jackson informally advise students about careers, internships, and transfer opportunities.

Promising Improvements in Early Indicators

Since Jackson's advising redesign in summer and fall 2016—which was accompanied by other pathways reforms, including robust program maps and corequisite support courses for math and English—the college has reported substantial growth in credit momentum indicators in students' first year. As shown in Figure 3, the percentage of students earning 24 or more college-level credits in the first year nearly doubled from fall 2015 (8 percent) to fall 2016 (15 percent). The largest gain in credit momentum was in the percentage of students who earned six or more college-level credits in the first term, which increased from 35 percent in fall 2015 to 58 percent in fall 2016. Another impressive increase in Jackson's early momentum indicators for fall 2016 entrants, shown in Figure 4, was a more than doubling of the rate of college-level math completion in the first year, from 19 percent in 2015 to 43 percent in 2016. (Jackson also showed steady improvement in college-level English completion since 2010.)



The percentage of students earning 24 or more college-level credits in the first year nearly doubled from fall 2015 to fall 2016.

Figure 3.

Indicators of Credit Momentum at Jackson College

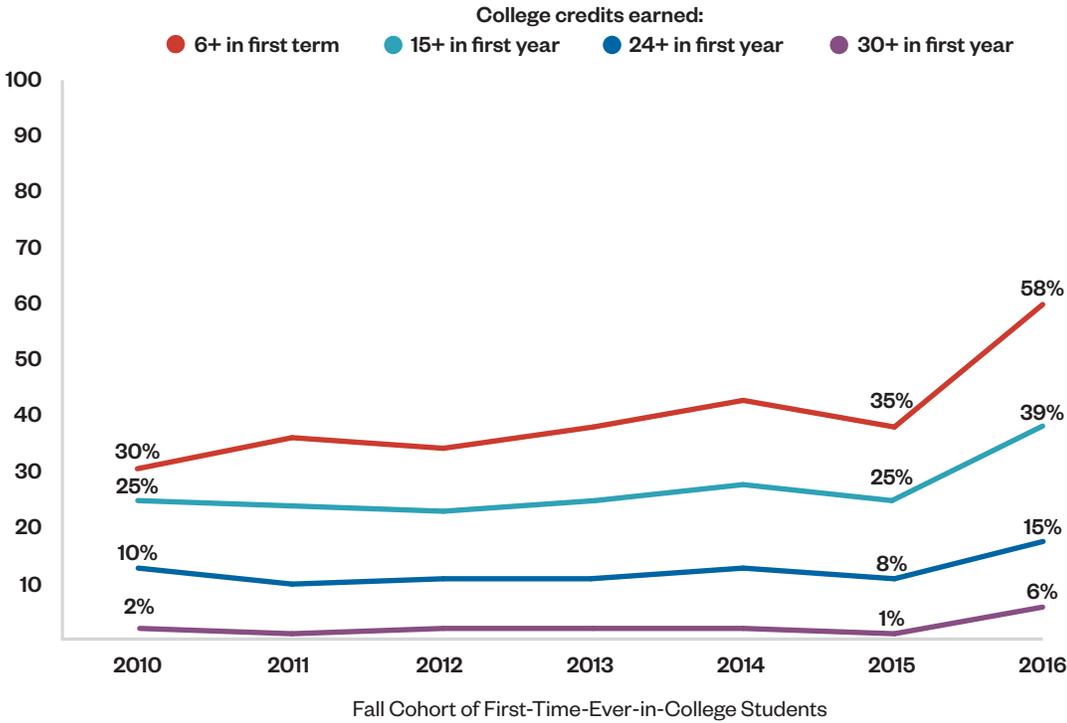
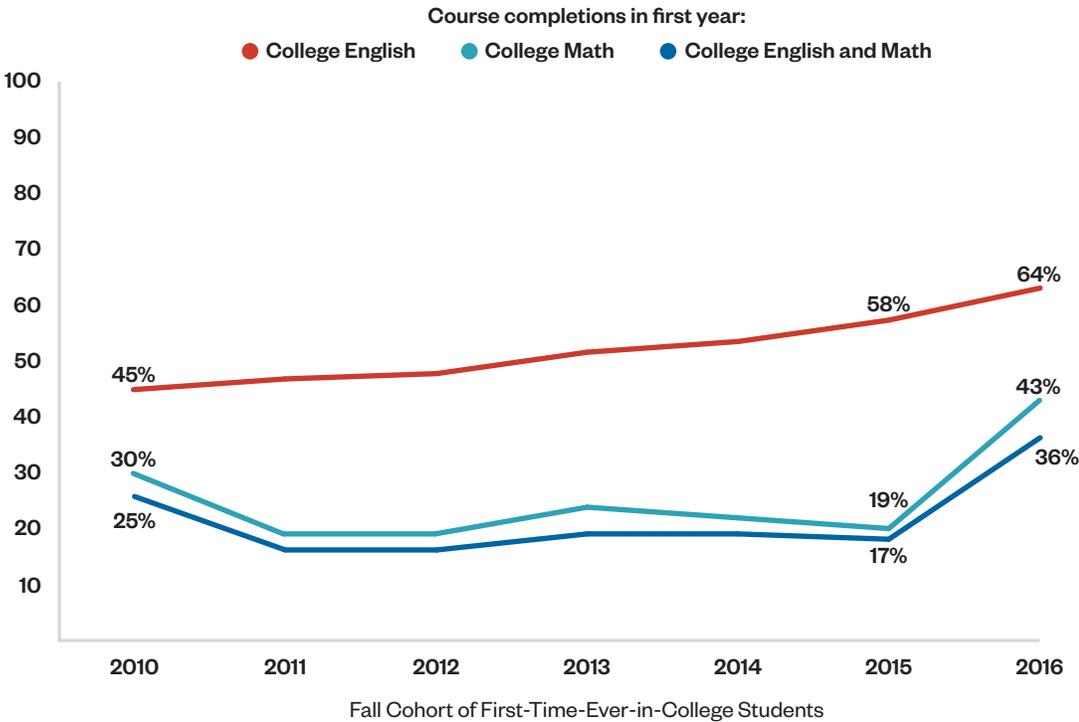


Figure 4.

Indicators of Gateway Math and English Momentum at Jackson College



How Indian River State College Is Helping High School Students Explore Career Options

Guided pathways calls for a different approach to career and major selection than the “self-guided” model that is the norm—one where the new student intake process helps students make informed decisions about careers and academic pathways and develop a plan to reach their goals, ideally by the end of their first semester. Recognizing the importance of students’ major choice to their chances of earning a college credential and to their longer term educational and career trajectories, colleges nationally are grappling with how to help new students explore career and college options, choose a program of study, and develop a plan for completing it. In fact, some colleges have begun considering ways to help students begin this process in middle and high school.

Indian River State College (IRSC), a large, public community college located in southeast Florida, has long been a leader in developing innovations to support student success. Over the past several years, IRSC has revamped its new student intake process to better help all students explore career options, choose a program that is a good fit, and develop a plan for completing that program, and the college continues to refine that process. More recently, IRSC also implemented efforts to help students in its feeder high schools and even middle schools begin the process of career and college exploration.

Using K-12 Partnerships to Encourage Early Career Exploration

As the only broad-access postsecondary institution in its region, IRSC has established strong partnerships with several middle and high schools in surrounding counties. IRSC has leveraged those partnerships to get students thinking about career exploration and major selection through high school–specific career events, such as Great Explorations.

Great Explorations, which takes place on IRSC’s main campus, occurs in the fall semester, during a time when many high school students are learning about and applying to college. To get students thinking about how their college choices will ultimately be related to their careers, IRSC introduces its eight meta-majors to students, who then select up to five programs of interest within their chosen meta-major. Once on campus, students are sorted into groups by their selections, visit with program faculty, and participate in activities associated with their chosen meta-major. In some cases, regional employers make presentations on career options in their field.

Using Dual Enrollment to Help Students Explore Options and Plan for College and Careers

IRSC has thoroughly redesigned its intake and onboarding processes to better support all new students’ (including high school dual enrollment students’) academic and career decision-making, making significant changes to new student orientation, new student advising, and the college’s student success course. Together, these supports help degree-seeking students choose a program of study and build a *guided pathway* (the college’s

term for a personalized degree plan), ideally prior to their first day of class but no later than the end of their first semester.

Dual Enrollment Information Sessions and Outreach

To reach students eligible for dual enrollment⁶ and their parents, IRSC hosts various information and recruitment sessions during the spring semester on all IRSC campuses and at several high schools. During the sessions, students and parents are introduced to the benefits of the dual enrollment program, familiarized with IRSC's programs and the articulation agreements the college has with local universities, and shown how IRSC uses program customization and planning to build degrees around a student's intended career field and transfer institution. Through this early engagement, IRSC demonstrates to high school students and their families how dual enrollment can propel them onto a path toward degree completion and into a career field of interest.



IRSC demonstrates to high school students and their families how dual enrollment can propel them onto a path toward degree completion.

IRSC also promotes its dual enrollment program at various community and college-based events that have a different focus but attract a high school audience, such as the Men of Color event led by IRSC's Achievement Taskforce. During this event, male students of color from grades 10 through 12 are connected with male mentors to, among other things, learn more about the college enrollment process and become familiarized with the region's leading industries and associated career pathways.

Application and Orientation

After being accepted into the dual enrollment program, students must participate in a new student orientation, which has been revamped to place a greater emphasis on career exploration. The orientation familiarizes dual enrollment students with IRSC advising processes and program customization and planning. Dual enrollment students can attend new student orientations intended for all students or an online orientation created specifically for dual enrollment students, which emphasizes the importance of early career exploration and major selection in light of the potential impact of dual enrollment participation on future financial aid eligibility.

Advising

IRSC assigns all degree- and certificate-seeking students to an advisor who monitors their progress throughout their time at the institution. Dual enrollment students, like other degree-seeking students, are required to develop a full-program academic plan with their assigned advisor during their first term. If a student registers for courses that do not appear on his or her plan, the advisor receives an alert, and a registration hold is placed on the student.

The process by which advisors help dual enrollment students explore their options and develop their guided pathway is similar to the process undertaken with other degree-seeking students. Upon enrollment, students are encouraged to undergo a career assessment, such as Career Coach or Florida Shines, and consider whether their results align with the program they selected or one they may be considering. After completing a career assessment, students participate in an initial advising meeting, ideally before the

first day of classes. During this meeting, students develop a guided pathway plan and determine which courses they should be taking to reach their goals. For dual enrollment students, this includes consideration of which high school courses they should be taking to prepare them for a particular meta-major or program. Recognizing that many high school students will change their minds, the conversation focuses on selecting general education courses that apply to a broad number of pathways in a student's general interest area (i.e., STEM versus non-STEM).

To keep dual enrollment students on-plan, IRSC has worked with local high schools to establish a shared advising tool that connects a dual enrollment student's high school counselor with his or her IRSC advisor. This tool, referred to as the DEAN system (Dual Enrollment Advising Network), enables the high school counselor to view the student's guided pathway, current term schedule, IRSC transcript, and comments from the IRSC advisor. Any changes to the student's schedule trigger an email to the high school counselor alerting him or her to the change. This shared system encourages the high school counselor and IRSC advisor to collaboratively monitor the student's academic progress and advise the student to keep him or her on-plan.

Student Success Course

All dual enrollment students are required to take IRSC's student success course during their first term. The course, which is required of all associate-degree-seeking students, is designed to help students home in on a meta-major. The course includes a career exploration module to help students decide whether the career they have selected is a good fit based on their interests and goals. The course also helps students assess meta-major and career fit through assignments focused on learning styles and aptitude assessments. After learning about their potential career through various class assignments, students are required to complete a capstone project in which they present on their chosen career and describe why it is a good fit for them.

Further Improvements Planned

In 2016–17, 5,705 high school students took college courses through the dual enrollment program at IRSC. In the same academic year, 275 IRSC dual enrollment students earned an associate degree at the same time they earned a high school diploma. In general, IRSC finds that dual enrollment students who matriculate at the college after high school are much more likely to graduate than are students who start at the college after high school.

That students who get a head start on college through dual enrollment do better than post-high school entrants is not surprising. However, the college is taking steps to increase the rates of college success for its dual enrollment students—and to try to narrow gaps in achievement among students by race/ethnicity and income. All of the aforementioned processes and practices will be extended to home and private school populations through an articulation agreement going into effect for the 2018–19 school year. In addition, IRSC is considering ways to extend the Great Explorations event to middle schools, so that students would become acquainted with career exploration even



IRSC finds that dual enrollment students who matriculate at the college after high school are much more likely to graduate than are students who start at the college after high school.

earlier. One proposal under consideration is a gateway event that introduces middle school students to the concept of meta-majors prior to their attendance of the Great Explorations event in high school.

More Case Studies to Come

Among the growing number of colleges implementing pathways reforms nationally, no two are putting in place the same practices or approaching the work of institutional redesign in the same way. As we continue to study colleges undertaking pathways reforms, CCRC will continue to publish case studies to help inspire other colleges doing this important work.

Part 3 of this packet describes the phases and general timeline for implementing pathways reforms that we have observed among colleges that are early adopters. It also discusses indicators colleges can use to measure whether their reforms are having an effect, as well as the costs of implementing pathways.

Endnotes

1. For more information about the American Association of Community Colleges' Pathways Project, visit <https://www.aacc.nche.edu/programs/aacc-pathways-project/>.
2. See <http://www.clevelandstatecc.edu/academics/index.html>.
3. For more on momentum, see Jenkins and Bailey (2017).
4. For more on advising, see Kalamkarian, Karp, and Ganga (2017).
5. See <https://www.jccmi.edu/jc-spotlight/total-commitment-to-student-success/>.
6. For more on dual enrollment, see Fink, Jenkins, and Yanagiura (2017).

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These case studies were prepared by Davis Jenkins, Hana Lahr, John Fink, Elizabeth Ganga, Elizabeth Kopko, Amy E. Brown, and Porshèa Patterson. Funding was provided by the Bill & Melinda Gates Foundation.

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What We Are Learning About Guided Pathways

Part 3: Timeline and Tips for Implementing Pathways Reforms

By Davis Jenkins, Hana Lahr, John Fink, and Elizabeth Ganga

Guided pathways reforms can take several years to implement at scale because they require a thoroughgoing redesign of a college's major functions, including:

- organizing programs into career-focused meta-majors to enhance student recruitment and exploration and program improvement;
- mapping clear paths to degrees, employment, and further education in collaboration with employers and universities;
- structuring advising to help students choose, enter, and complete a program of study;
- rethinking academic support to enable students to take and pass critical program courses in their first year of college; and
- training faculty and staff to facilitate these reforms.

CCRC's research on the implementation of guided pathways has revealed that these reforms often follow a similar pattern of development. Figure 1 shows the general stages of this process and an approximate timeline. In colleges where we have seen substantial improvements in student progression and completion, these improvements became noticeable after colleges began to implement the essential elements of the model in concert with one another.

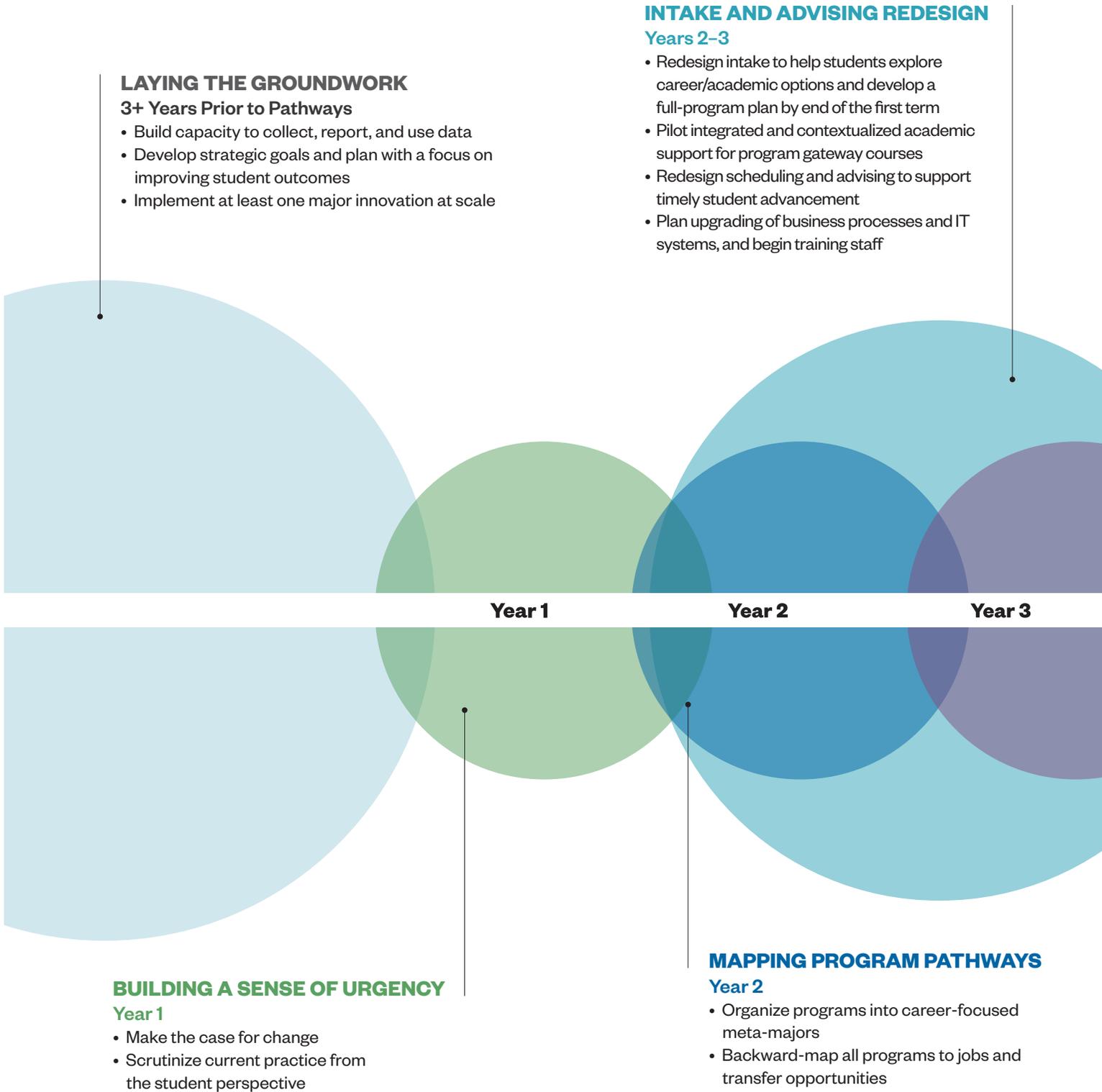


In colleges where we have seen substantial improvements in student progression and completion, these improvements became noticeable after colleges began to implement the essential elements of the model in concert with one another.

This visualization represents an idealized conceptualization of the process and timeline based on our observations of colleges that were early adopters of the pathways model. No college will follow these stages precisely as outlined here, and the process is much messier (and probably less linear) in practice.

Figure 1.

Idealized Timeline for Implementing Guided Pathways at Scale



FURTHER SCALE IMPLEMENTATION

Years 4–5

- Evaluate and improve pathways implementation
- Build academic and career communities within meta-majors
- Extend program pathways into high schools (starting with dual enrollment) and adult education programs

Year 4

Year 5

Year 6

INITIAL SCALE IMPLEMENTATION

Year 3

- Begin scale implementation of new student intake, planning, scheduling, and advising
- Reorganize learning outcomes assessment around meta-majors and program maps
- Implement IT systems and business processes to support pathways
- Plan extension of program pathways into high schools and adult education programs

ONGOING IMPROVEMENT

Ongoing

- Institutionalize program review, improvement, and professional development within and across meta-majors

Laying the Groundwork (3+ Years Prior to Pathways)

Pathways reforms require substantial changes to many aspects of a college’s programs, services, business processes, and policies. They also call for changes in mindsets and organizational culture. To prepare to undertake such transformative change, a college’s faculty, staff, and administrators must become accustomed to helping to plan and implement major changes.

Cultivating a culture of openness to change takes time. To accomplish this, colleges have:

- created clear, measurable goals for improving student outcomes, along with strategic and operational plans to achieve those goals;
- built their capacity to analyze, report, and use data to improve practice and policy; and
- implemented at least one major innovation at scale—that is, for all students, not just selected groups.

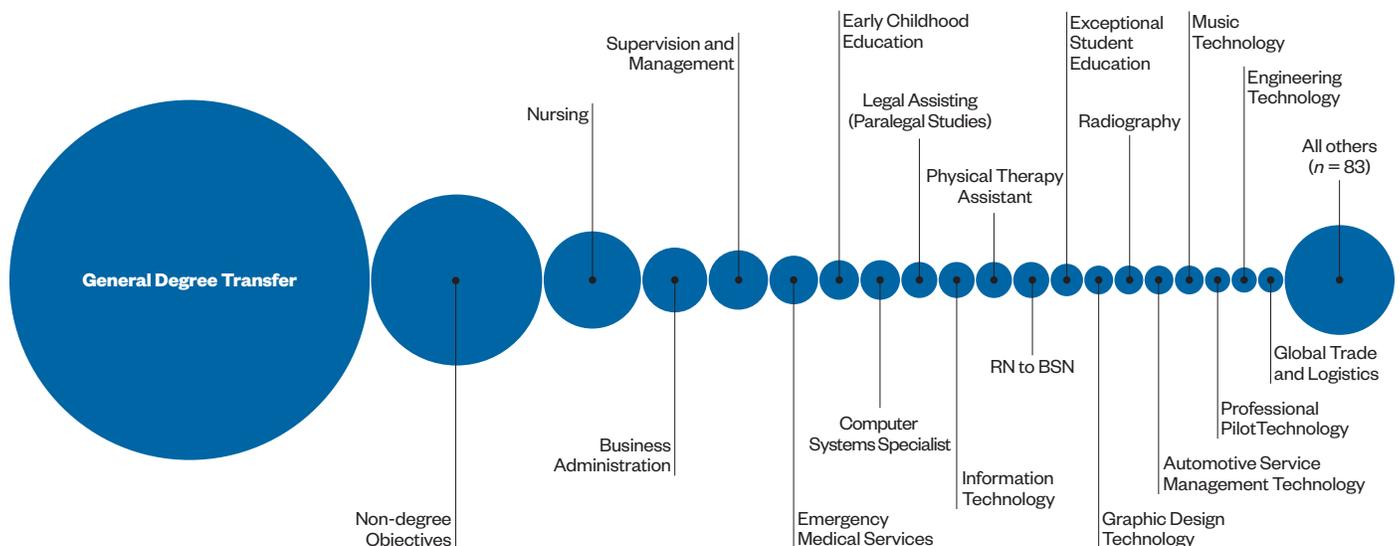
Building a Sense of Urgency (Year 1)

Research on organizational improvement emphasizes the importance of building a sense of urgency among the college community by using data to highlight the need for change.¹

Colleges that have been successful in building a sense of urgency have used data to highlight unacceptably poor student outcomes and disparities among students by race/ethnicity, income, and age. They have also used data to help faculty and staff reflect on the college experience from the student perspective and to help them see barriers to success that college practices create for students.

One exercise that highlights barriers encountered by students is examining the distribution of currently enrolled students by their program designation in the college’s student information system. Figure 2 shows the results from one college that used this exercise to help justify the need to implement pathways.

Figure 2.
Top 20 Programs by Enrollment at One College Pre-Pathways



College leaders can use the results of analyses like this to stimulate discussion among faculty and staff on questions such as:

- How accurately does this report reflect what programs students are actually in?
- How well do each of these program designations reflect students' goals—not only in terms of their program goals but also in terms of their aspirations for transfer and careers?
- Are we closely monitoring how far along students are toward completing their program requirements?
- Can students easily access specific information about their progress and what they have to do to complete their program?
- How well do we keep track of changes in students' program choices?
- Which department is responsible for monitoring the progress of students in each program?
- Are there students whose progress is not tracked by an academic department—for example, associate of arts students, students in developmental courses, dual enrollment students, pre-nursing students, or noncredit students?

Colleges can give this exercise even more impact by showing the distribution of program enrollment disaggregated by student race/ethnicity and income. Examining how current practices contribute to inequitable outcomes for students of color, lower income students, and other marginalized student populations—including how and why students are inequitably sorted into programs—can help to build urgency around the need for change and set the stage for future reforms that reduce rather than replicate inequitable outcomes.



Examining how current practices contribute to inequitable outcomes for students of color, lower income students, and other marginalized student populations can help to build urgency around the need for change.

Colleges that do this exercise often come to similar conclusions:

- The college does not do a good job of accurately monitoring students' goals. For example, the college does not record students' transfer goals—where they would like to transfer and in what major.
- Most students are in “programs” such as Associate of Arts, Associate of General Studies, Pre-Business, or Pre-Nursing, where no one is responsible for monitoring their progress toward program completion and achievement of goals for their career and further education.
- If the college has no idea how far along students are in the programs, it is not surprising that students are confused too.
- Low-income and racial/ethnic minority students are disproportionately enrolled in programs that lead to shorter term credentials in less remunerative fields.²

In addition to creating a sense of urgency, college leaders need to articulate a compelling vision of how the college needs to change to address the problems it has identified.

Guided pathways provides a research-based model for thinking about how colleges can improve outcomes for students. At the same time, college leaders need to recognize and address the fear and anxiety that inevitably come with big changes.³

Mapping Program Pathways (Year 2)

A key first step in planning pathways is to convene faculty and advisors to work together to map out programs. The idea is to “start with the end in mind” by backward-mapping the career outcomes associated with each program; indicating which courses students should take in what sequence; and highlighting courses that are critical to success in the program, along with cocurricular requirements and progress milestones. Maps should include an introductory curriculum for new students interested in a given field that facilitates program exploration and selection but also maximizes the applicability of credits, should students change their minds about their program. The math courses required for the program should be dictated by the mathematics required for the field. Students should not be defaulted into an algebra–calculus track just because that has been the convention in the past.⁴

Maps should include detailed information on the employment opportunities targeted by the program and the transfer requirements for bachelor’s programs in related fields. Transfer maps should include a sequence of courses that will allow students to apply all of their credits toward their major at the four-year institution and thus be able to complete a bachelor’s degree with few excess credits, if any. For this reason, mapping teams should work with partner employers and university transfer destinations to review and validate program maps. All of this information needs to be readily accessible on colleges’ websites.

A key purpose of program maps is to help students and their advisors create full-program plans (ideally by the end of their first term) customized to each student’s prior credits, goals for transfer and employment, and desired timeline for completion. Thus, the maps should be considered guides. Program maps will need to be updated regularly as programs change to meet changing transfer and employment requirements.

The mapping process plays another important function as a tool for faculty and staff from across disciplines and divisions to get together to reflect on and help to streamline the student experience and ensure that programs are aligned with transfer and job requirements. Colleges that have taken the mapping process seriously and involved staff from across silos have discovered serious impediments to student progress in the status quo. Faculty and student services staff need to be part of the process, but it is also important to have financial aid, marketing, and recruitment staff contribute. Registrar, information technology, and financial aid staff also need to be consulted regularly during the mapping process, as they will be essential for implementing the systems to support academic plans and student progress monitoring.

Colleges have found it useful to organize their programs and the mapping process around broad fields, or *meta-majors*—see Table 1 for examples from several colleges. Meta-majors should reflect the major occupational fields in the college’s service region targeted by its programs. For example, Lorain County Community College organized its meta-majors (which it calls “career pathways”) around job fields identified as important to the region’s future by Northeast Ohio regional economic development groups.



Colleges have found it useful to organize their programs and the mapping process around broad fields, or *meta-majors*.

Meta-majors help current and prospective students as well as employers and other stakeholders make sense of the many programs most colleges offer. Colleges are also using meta-majors as a framework for marketing programs, recruiting and orienting new students, reviewing programs, and improving instruction.

Table 1.
Sample Meta-Majors at Four Colleges

ST. PETERSBURG COLLEGE (FL)	LORAIN COUNTY COMMUNITY COLLEGE (OH)	ALAMO COLLEGES (TX)	NORTHEAST WISCONSIN TECHNICAL COLLEGE
<p>“Career and Academic Communities”</p> <ul style="list-style-type: none"> • Arts, Humanities, and Design • Business • Communications • Education • Engineering, Manufacturing, and Building Arts • Health Sciences and Veterinary Technology • Public Safety, Public Policy, and Legal Studies • Science and Mathematics • Social and Behavioral Sciences and Human Services • Technology 	<p>“Career Pathways”</p> <ul style="list-style-type: none"> • Business and Entrepreneurship • Computer and Information Technologies • Culinary and Hospitality • Education • Engineering and Manufacturing • Health and Wellness • Human/Social Services and Public Safety • Liberal and Creative Arts • Science and Math 	<p>“Alamo Institutes”</p> <ul style="list-style-type: none"> • Advanced Manufacturing and Logistics • Business and Entrepreneurship • Creative and Communication Arts • Health and Biosciences • Public Service • Science and Technology 	<p>“Fields of Interest”</p> <ul style="list-style-type: none"> • Agriculture, Food, and Natural Resources • Architecture and Construction • Business • Digital Arts • Energy • Health Sciences • Human Services and Education • Information Technology • Law, Public Safety, and Security • Manufacturing • Science, Technology, Engineering, and Mathematics • Transportation, Distribution, and Logistics
https://go.spcollege.edu/aos/	https://www.lorainccc.edu/programs-and-careers/	https://www.alamo.edu/main.aspx?id=48814	https://www.nwtc.edu/programs/fields-of-interest

Intake and Advising Redesign (Years 2–3)

Once a college has at least a draft of its meta-majors and program maps, work teams can begin the task of redesigning the intake experience for new students with the goal of enabling them to explore options for careers and college; choose a direction; and develop a full-program plan, ideally by the end of their first term. This phase of implementation requires rethinking how a college markets its programs; the application process; new student orientation; initial advising; and introductory curricula for each meta-major, including the academic support for critical courses. Faculty should be involved in this process along with student services personnel, since the goal is to build on-ramps to their programs of study.

Colleges should also convene faculty work groups to develop a plan for improving student success in college-level “gateway” courses for each meta-major identified through the mapping process. Rather than requiring a large portion of students to complete prerequisite developmental education sequences, colleges throughout the country are having success with integrating academic supports into college-level courses.⁵ The goal is to enable students to take and pass college-level math, English, and other critical program courses by the end of their first year.

Finally, work teams of advisors and faculty need to rethink advising more generally to help students make decisions across the full range of their experience at the college.⁶ A common challenge is figuring out the division of labor among faculty, student services staff, and others for monitoring student progress at different points and for responding when students appear to be struggling or straying from their plans. Technology can be helpful in monitoring student progress, providing feedback to students, and alerting college personnel when intervention might be needed. Technology can also help the college schedule classes so that students can take the courses they need each term to make steady progress on their plans. However, the clear lesson from colleges that have used technology effectively for these purposes is that it is best to first redesign the human and business processes and then customize the technology to suit these purposes.⁷ For example, before colleges can make the best use of scheduling software, every student should be on a full-program plan so that the college knows what courses students need to take in any given term.

Initial Scale Implementation (Year 3)

Although it sounds daunting, colleges reporting the most success are those that “go all in” by implementing the following guided pathways practices for all first-time students at the same time:

- program maps and meta-majors;
- reorganized new student intake, program exploration, and planning; and
- integrated, contextualized academic support for critical college-level courses.

With the on-ramp to programs of study in place, colleges can begin to implement redesigned policies and processes for ongoing advising and course scheduling. Colleges can also begin planning to extend meta-majors and program maps into high schools, starting with dual enrollment offerings.

Building Pathways Down Into High Schools Through Dual Enrollment

Colleges should encourage high school students and their families to think of dual enrollment as an opportunity to explore academic and career interests and an entry point to college programs and related transfer and career paths rather than just a way to take college classes. Part 2 of this packet describes how Indian River State College in Florida partnered with high schools to share information about the benefits of starting on a program path in high school, even if students eventually change their minds.

Further Scale Implementation (Years 4–5)

By going all in—implementing guided pathways practices at scale for all new students—colleges will learn a great deal that they can use in refining practices in subsequent terms. Colleges should take stock of lessons learned after the initial year of implementation and plan improvements accordingly. Pathways reforms play out over several years, and colleges need to be flexible and shift gears if things do not go according to plan.

Throughout the entire implementation process, it is critical that colleges conduct training and other professional development that directly supports pathways implementation. Colleges that have been successful in implementing pathways also find that communication and engagement efforts with faculty, staff, and students need to be sustained over time.

Ongoing Improvement

Colleges' meta-majors, program maps, and other key elements of pathways reform can provide a framework and a set of tools for ongoing program review, improvement, and professional development. For example, program maps can be used to facilitate discussions with university transfer program partners and employers on how programs might need to change to stay up-to-date. Also, colleges that have adopted pathways are finding it useful to organize discussions about program learning outcomes and strategies for instructional improvement among faculty by meta-major.

Measuring the Effects of Pathways Reforms

Early Momentum Indicators

The ultimate goal of guided pathways reforms is to increase completion rates for all students, improve other long-term outcomes, and eliminate inequities in these outcomes. However, because guided pathways reforms take several years to plan and implement, and it takes even longer to see results in the ultimate outcomes of interest, colleges should track leading indicators of longer term outcomes to gauge the impact of reforms on students. Research indicates that certain measures of first-year student performance predict long-term success.⁹ Furthermore, colleges should disaggregate and track these measures by race/ethnicity, income, and other subgroups of interest. Because improvements on leading indicators are prerequisites to improvements on longer term measures of institutional performance, equitable results on leading indicators are essential to attaining equitable results on longer term outcomes. These “early momentum” indicators focus attention on creating conditions at colleges that form a foundation for eliminating equity gaps and increasing student success overall. The following are three key indicators of early momentum identified by research:

1. Credit momentum: *Attempting at least 15 credits in the first term or at least 30 credits in the first academic year; completing at least 24 college credits in the first year.*

Credit momentum is easy to measure and emphasizes the need to accumulate credits to make progress toward program completion. This indicator focuses students and the college on the time it will take students to finish their programs and should motivate efforts by both to minimize that time. However, because it does not consider the content of the credits, on its own, credit momentum does not provide much insight into the effects of reforms to college-level programs.

Measuring Progress and Planning for Improvements: The Scale of Adoption Assessment

CCRC developed the Guided Pathways Scale of Adoption Assessment⁸ to provide colleges with a sense of what guided pathways entails, as well as a framework for assessing their progress and developing plans for taking pathways practices to scale for all students in all programs of study.

To complete the assessment, colleges should ideally bring together a team of people from across departments and divisions, including senior leadership, deans, academic advisors, and faculty members, as well as representatives from institutional research, information technology, the registrar's office, and the financial aid offices.

The Scale of Adoption Assessment is also being used by state systems to gather information about college activities, practices, and challenges; to design coaching, workshops, and technical assistance activities; and to track colleges' progress over time and reassess their needs and challenges.

2. Gateway momentum: *Taking and passing pathway-appropriate college-level math and college-level English (gateway courses) in the student's first academic year.*

Gateway momentum begins to focus attention on the content of credits. This indicator also provides insight into the extent to which colleges have removed barriers to success created by traditional prerequisite remediation, and how much they have moved to integrate academic support into college-level coursework. Since college-level math and English are often prerequisites for upper level program courses, completing these courses in the first year enables students to make progress in their programs.

3. Program momentum: *Taking and passing at least nine semester credits (three courses) in the student's field of study in the first academic year.*

A focus on this indicator of early momentum leads colleges to help students explore options and choose a path early on. Program momentum is a more explicit indicator of the potential effect of pathways reforms such as program maps and redesigned intake advising on student outcomes. This indicator is more meaningful if the college's programs are coherent and well organized.

After guided pathways reforms have been implemented at scale for several years, colleges can expect to see their effects on longer term outcomes, such as graduation rates. At this point, colleges should broaden their analysis to include the full spectrum of student outcomes that their data enable them to examine, and continue to use those findings to strengthen their pathways reforms.

Improvements in Early Momentum at Pathways Colleges

Alamo Colleges have seen large improvements in early momentum indicators after several years of implementing pathways reforms. Since 2010, Alamo Colleges have roughly doubled each of their credit momentum indicators.

As shown in Figure 3, in 2016, nearly half of first-time-ever-in-college students earned 15 or more college-level credits in their first year (up from about a quarter in 2010). Figure 4 shows that students who met the credit momentum thresholds more frequently completed a credential within three years of starting college (at any institution).



Since 2010, Alamo Colleges have roughly doubled each of their credit momentum indicators.

Alamo Colleges' results on gateway math and English momentum indicators tell a similar story: The percentage of new students passing gateway courses in their first year has increased (Figure 5). The percentage of students passing both college-level math and college-level English in their first year rose to 29 percent in 2016, up from 11 percent in 2010. Unsurprisingly, as shown in Figure 6, students who completed both college-level math and college-level English in their first year were much more likely to complete a college credential within three years (32 percent) than were students who did not (8 percent).

Comparing the completion rates of students who did and did not meet the early momentum thresholds suggests that these are important leading indicators of longer term success for colleges.

Figure 3.

Alamo Colleges' Credit Momentum Indicators

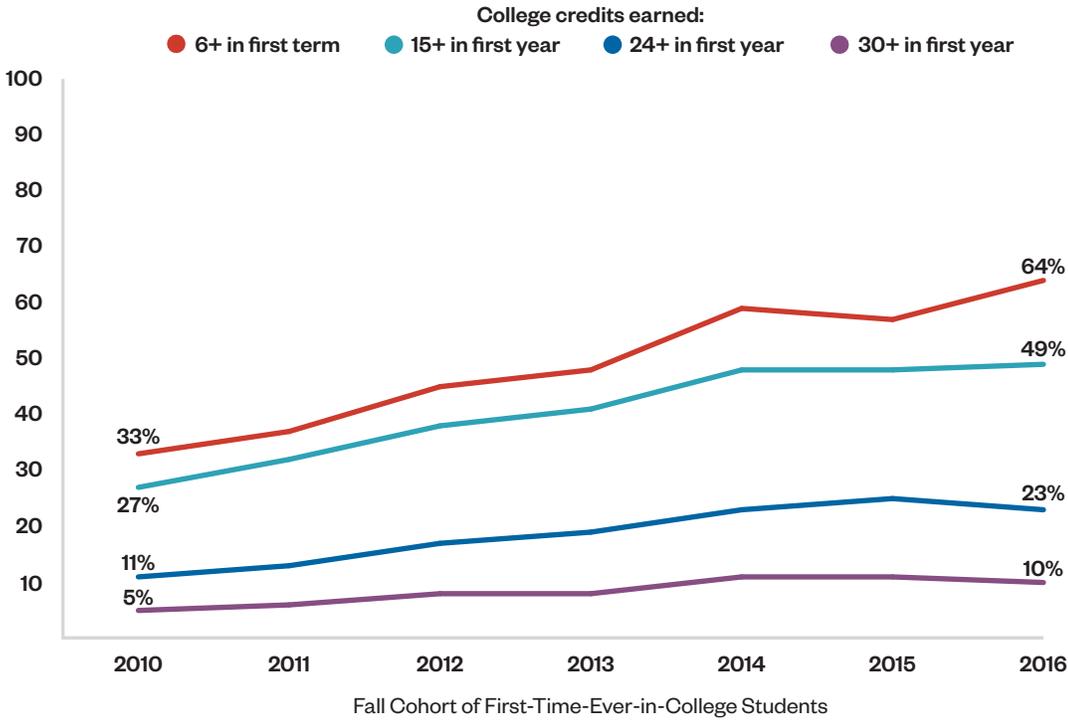
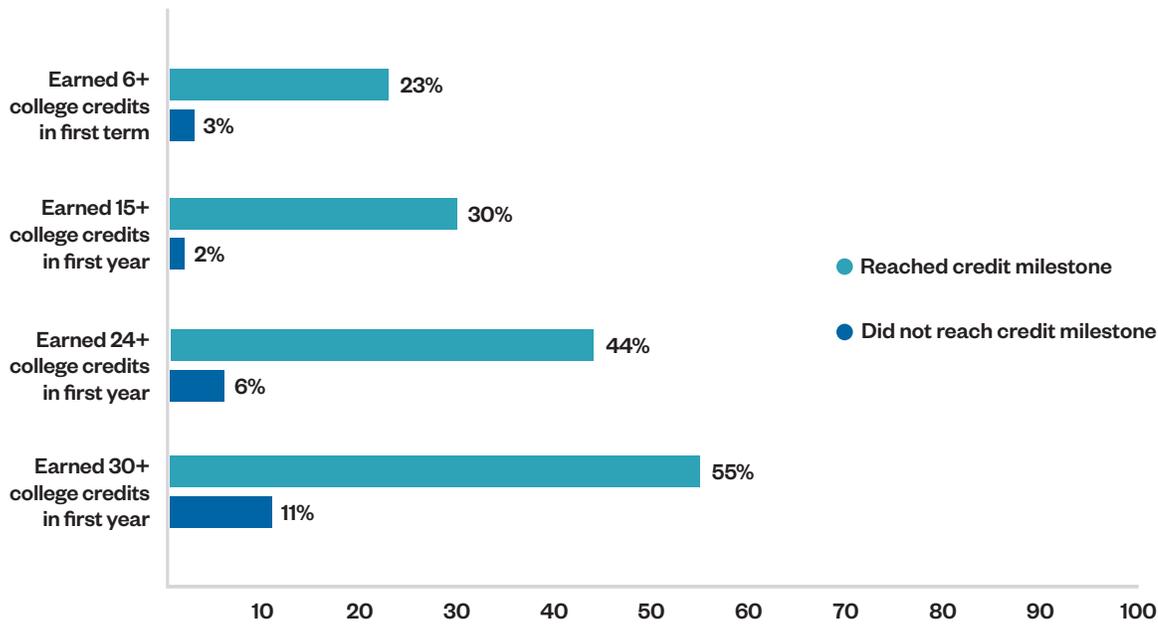


Figure 4.

Alamo Colleges' Completion Rates by Credit Momentum Indicator Status



Note: This figure shows completion rates for fall 2014 first-time-ever-in-college students at Alamo Colleges who completed any college credential from any institution within three years, disaggregated by whether students met each early momentum indicator definition.

Figure 5.
Alamo Colleges' Gateway Momentum Indicators

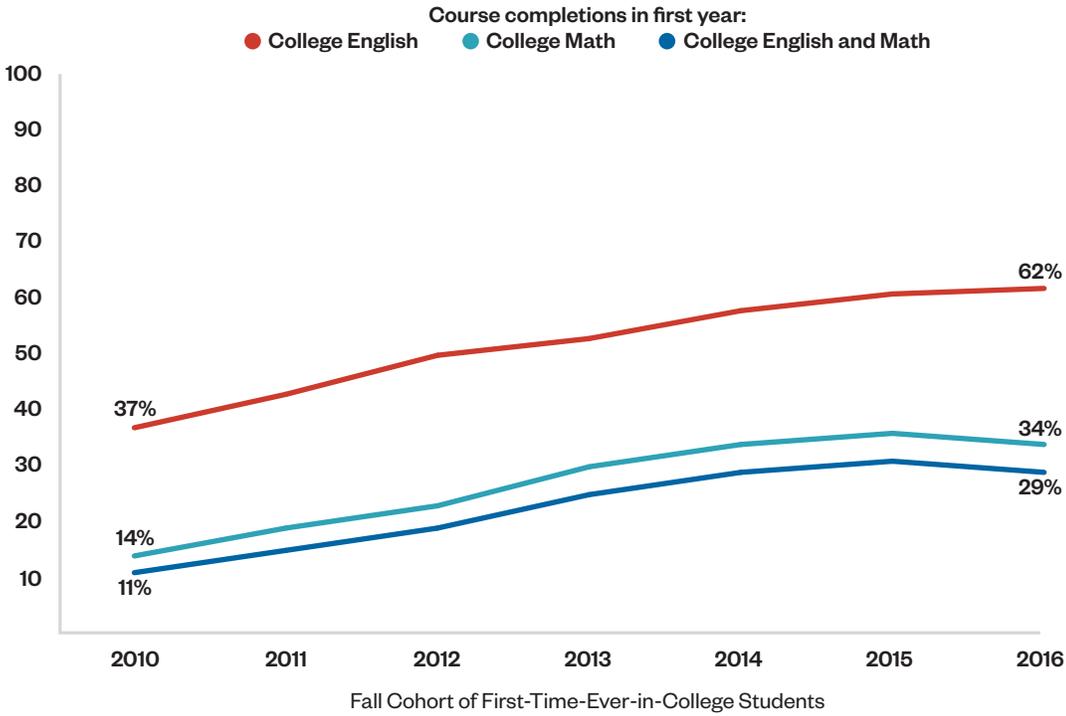
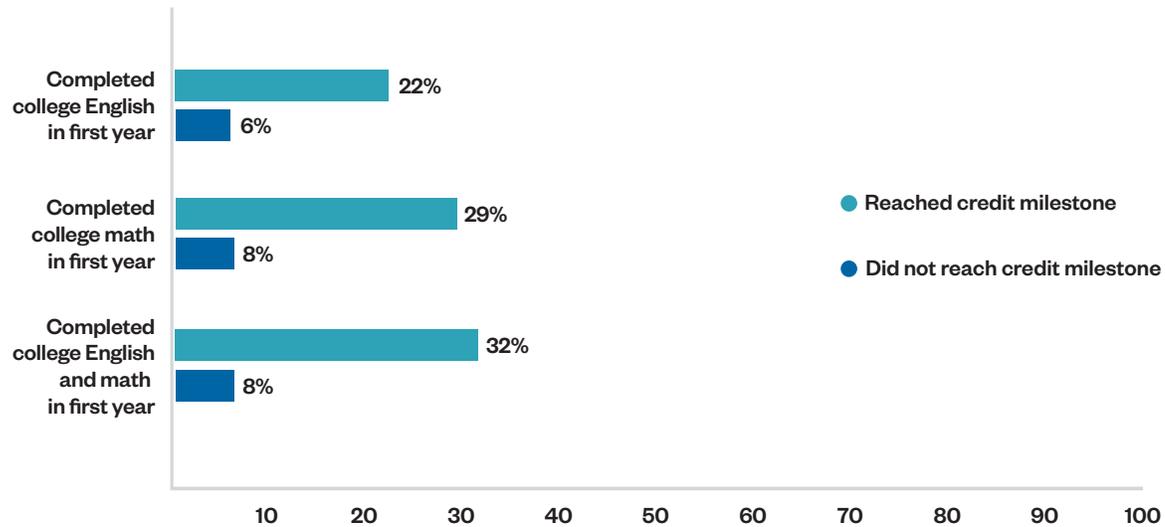


Figure 6.
Alamo Colleges' Completion Rates by Gateway Momentum Indicator Status



Note: This figure shows completion rates for fall 2014 first-time-ever-in-college students at Alamo Colleges who completed any college credential from any institution within three years, disaggregated by whether students met each early momentum indicator definition.

Costs Associated With Implementing Pathways

Implementing such thoroughgoing changes as are entailed in pathways reforms requires resources. For some changes, the costs are relatively modest and can be covered by reallocating resources. These include the costs of administration and support to coordinate, communicate, and engage college stakeholders in the reform process; release time for faculty and staff time to review and redesign programs, instruction, and support services; and training and professional development on key topics, such as advising and using student information systems.

While a more precise accounting is still needed, CCRC research indicates that other changes may also require more substantial additional resources. The two biggest new costs pathways colleges report they are confronting are in hiring additional advisors, both to help students choose a path and to monitor and support their progress through to completion, and in upgrading student information systems and websites to improve program information, student progress tracking, and analytics.



The two biggest new costs pathways colleges report they are confronting are in hiring additional advisors and in upgrading student information systems and websites.

To cover these costs in an environment of flat or declining state funding, colleges need to generate additional tuition and subsidy revenue by increasing full-time equivalent enrollment. Indeed, many colleges are moving to adopt pathways as a strategy for doing just that, both by improving recruitment with programs more clearly connected to job and further education outcomes and by increasing retention through better monitoring of students' progress along their plans.

For example, Lorain County Community College calculates that it earns an additional \$4,900 in tuition and subsidies for each student it retains from one year to the next. As shown in Figure 7, the college has used the revenue generated through its efforts to increase student retention (described in Part 1 of this packet) to hire more advisors and to otherwise improve its educational programs.

Figure 7.

Student Success Return on Investment



Fall full-time student retention rate

Up 20%

from 56% in 2011 to 67% in 2016

An additional

370

full-time students are retained annually



For each full-time student retained to year 2

\$4,900

is earned in tuition and subsidy

Over

\$1.8 million

gained annually from student success efforts since 2011

Note: This figure is adapted from Lorain County Community College.

Conclusion

It is an exciting time in the community college reform movement, with hundreds of institutions working to improve how students experience college and ultimately prepare them better for additional education or careers. As colleges further integrate the principles of guided pathways into their reform work, we will learn much more about what works, what does not, and how the model should be adjusted to make the biggest difference for all groups of students.

As CCRC continues to study guided pathways and work with colleges implementing the reforms, additional resources will be posted on the CCRC website—ccrc.tc.columbia.edu—including tools to assess colleges' progress on pathways and case studies from vanguard colleges.

Endnotes

1. Kotter (n.d.).
2. Prince (2015).
3. For more on addressing the fear and anxiety that come with organizational change and with pathways specifically, see Jenkins, Lahr, and Fink (2017, pp. 43–44).
4. For more on math pathways, visit <https://dcmathpathways.org/>.
5. Belfield, Jenkins, & Lahr (2016).
6. For more on reforming advising, see Kalamkarian, Karp, and Ganga (2017).
7. For more guidance on how to choose technology solutions to support guided pathways, see AACC Pathways Project (2017).
8. Community College Research Center (2017).
9. For more on early momentum, see Jenkins and Bailey (2017).

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