
Implementing Guided Pathways

Early Insights From the AACC Pathways Colleges



April 2017



The Community College Research Center (CCRC), Teachers College, Columbia University, conducts research on the major issues affecting community colleges in the United States and contributes to the development of practice and policy that expands access to higher education and promotes success for all students.

Acknowledgements

The authors would like to thank the other members of the research team: Michael Armijo, Maggie P. Fay, Soumya Mishra, Porshéa Patterson, and Madeline Joy Trimble. We are grateful to the 30 AACC colleges for their willingness to allow us to learn from their work on guided pathways. Thanks also to Thomas Bailey, Rob Johnstone, Kay McClenney, Gretchen Schmidt, and Evelyn Waiwaiole for their invaluable comments on earlier drafts. Funding for this research was generously provided by the Bill & Melinda Gates Foundation.

Table of Contents

Inside This Report	1
Introduction	3
The Purpose of This Report	3
Research Methods	4
Organization of the Report	5
Colleges' First-Year Progress on Guided Pathways	6
Summary of Year 1 Progress	6
Mapping Pathways to Student End Goals	11
Helping Students Choose and Enter a Program Pathway	18
Keeping Students on Path	28
Ensuring That Students Are Learning	36
Managing the Change Process	39
Creating a Climate for Change	39
Engaging and Enabling the Whole Organization	42
Implementing and Sustaining Change	47
Key Next Frontier for Pathways: Increasing Student Success in Program Gateway Courses	52
Progress to Date in Rethinking Approaches to Student Success	52
Further Rethinking How to Help Students Succeed in Program Gateway Courses	53
The Next Frontier in CCRC's Research on the AACC Pathways Colleges	57
Endnotes	58
References	59

Inside This Report

Across the United States, a growing number of colleges are redesigning their programs and student support services according to the “guided pathways” model. Central to this approach are efforts to clarify pathways to program completion, career advancement, and further education. Equally essential are efforts to help students explore college and career options and choose a program of study early on, help them make steady progress on their program plans, and ensure that they are building essential skills across their programs.

This report provides insight into how colleges are planning and implementing guided pathways reforms. It is based on the early work of 30 colleges that are participating in the American Association of Community Colleges’ (AACC) Pathways Project and have committed to redesigning their programs and support services at scale. CCRC researchers conducted telephone interviews with project leaders from all 30 colleges to discuss their self-assessments of the extent to which they were implementing elements of the guided pathways model. Researchers also conducted in-depth interviews and focus groups with faculty, advisors, and students during site visits at six of the colleges.

In this report we describe the variety of ways in which the AACC Pathways colleges are approaching guided pathways reforms in each of the model’s four main practice areas:

- 1. Mapping pathways to student end goals.** In the guided pathways model, colleges clearly map out every program, indicating which courses students should take in what sequence and highlighting courses that are critical to success, along with “cocurricular” requirements and progress milestones. For each program, colleges provide detailed information on the employment opportunities targeted by the program and the transfer requirements for bachelor’s programs in related fields. All of this information is readily accessible on colleges’ websites.
- 2. 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 and choose a program of study or broader “meta-major” and develop a program plan early on. Special supports are provided to help students take and pass college-level courses in pathway-appropriate math and English and other foundational subjects in their field of interest—ideally so that students can complete most of their core introductory courses in their first year. Intensive support is provided to help severely underprepared students succeed in college-level courses as soon as possible. Colleges work with high schools to help students explore career and college interests and prepare them to enter a college-level program of study directly after they complete high school.
- 3. Keeping students on path.** Under the guided pathways model, advisors monitor which program every student is in and how far along students are toward completing their program plans. Students too can easily see their progress and what they need to do to complete their program. Advisors and students are alerted when students deviate from their plans, and policies and supports are in place to help students get back on track. Assistance 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 they need when they need them, can plan their lives around school from one term to the next, and can complete their programs in as short a time as possible.

- 4. Ensuring that students are learning.** In the pathways model, faculty assess whether students are mastering learning outcomes as they progress through a program. Program learning outcomes are aligned with the requirements for success in further education and employment in a related field. Faculty use the results of learning outcomes assessments to improve the effectiveness of instruction in their programs. Colleges track mastery of learning outcomes by individual students, and the information is easily accessible to students and faculty. To ensure that students are learning, colleges work to ensure that teaching is effective. A key focus of teaching in the pathways model is attention to collaborative, active learning that is relevant to the student's field of interest. This includes teaching and learning in the classroom as well as learning that takes place outside the classroom, such as through internships or service learning.

For each of these areas of practice, we indicate where colleges are taking similar approaches and note especially novel or innovative strategies, providing examples in each case. We report lessons the colleges have learned from their experiences and advice they have offered to other colleges on how to design particular features of the model. We also highlight challenges that even colleges that are further along in the work are still trying to resolve.

The report also describes the strategies that the AACC Pathways colleges are using to manage the change process involved in implementing guided pathways. All of the colleges selected by AACC to participate in the Pathways Project had previously demonstrated a commitment and readiness to make major changes. We discuss these colleges' efforts to create a climate for change, engage and enable the whole organization, and implement and sustain change.

Finally, we consider a key next frontier for pathways colleges: connecting their developmental education reforms to their pathways efforts to better enable students to pass critical program gateway courses and get on a program path. If colleges are to enable the majority of their students to enter a college-level program of study as quickly as possible—ideally in the first year—the conventional approaches to placement and remediation will not suffice. Virtually all of the AACC Pathways colleges are experimenting with new approaches to developmental education, but most have not implemented these reforms at scale. We outline ways in which, by thinking differently, colleges could sort out many fewer students and enable many more to get on the college-level program paths that the colleges are working to strengthen through guided pathways reforms.

Introduction

Across the United States, a growing number of community colleges are rethinking their academic programs and student support services in fundamental ways to improve student learning and success. They are clarifying program paths to degrees, career advancement, and further education. They are redesigning the new student intake process so it functions as an on-ramp to a program of study, with the goal of helping students efficiently explore college and career options and plan and enter a program of study suited to their interests and talents. They are monitoring students' progress on their program plans, providing frequent feedback, and intervening when students fall off path. And they are working to ensure that students are building essential skills across their programs, not just in individual courses.

These “guided pathways” reforms are spreading. State agencies, Student Success Centers, and other entities have launched statewide efforts to help community colleges implement guided pathways in several states, including Arkansas, California, Connecticut, Florida, Massachusetts, Michigan, New Hampshire, New Jersey, North Carolina, Ohio, Oregon, Tennessee, Texas, Virginia, and Washington. We estimate that at least 200 community colleges nationally are currently undertaking guided pathways reforms.

Guided pathways reforms entail major changes in college practices and culture. Rather than scale up discrete programmatic interventions, guided pathways reforms require that colleges redesign academic programs and student supports at scale—that is, for all degree-seeking students. The burgeoning guided pathways movement is generating a slew of questions from the field on how to put guided pathways design principles into practice, and an eagerness for examples of how colleges are approaching this work.

The Purpose of This Report

This report is intended to provide insight into how colleges are planning and implementing guided pathways reforms. It is based on CCRC research on the early work of 30 colleges across the country that are part of the American Association of Community Colleges' (AACC) Pathways Project.¹ These colleges have committed to redesigning their programs and student support services at scale following the guided pathways model adopted by AACC based on CCRC's research.²

AACC chose these colleges to participate in the project because they had laid the groundwork for guided pathways reforms by building organizational cultures open to change. Only a handful had begun implementing guided pathways before joining the project, however. The expectation is that the participating colleges will redesign their programs and support services according to the pathways model and implement these changes for all incoming students by fall 2018. To help accomplish this, the colleges are sending planning teams to a series of six institutes run by AACC and other national organizations, each on a different aspect of the guided pathways model. Participating colleges are also receiving coaching from college practitioners who have experience with pathways reforms in their own institutions.

While the AACC Pathways colleges are at different stages of planning and implementing guided pathways, their participation has given them a structured opportunity to develop their guided pathways reforms in collaboration with other Pathways Project participants, staff, and coaches. This group of colleges thus provides an excellent opportunity for us to observe how a sample of institutions from across the country are tackling this work.

This report describes how the AACC Pathways colleges are approaching guided pathways reforms and the challenges they are facing. The colleges are not far enough along with these reforms for us to evaluate the effects of the changes they are implementing on student success. Therefore, we do not want to imply that the approaches being taken by the AACC Pathways colleges are the only or the best ways to implement guided pathways. While the AACC Pathways colleges are working from the same general model, and in some cases are taking similar approaches to aspects of the work, no two colleges are implementing pathways in precisely the same way. Still, in describing the approaches the AACC Pathways colleges are taking, our goal is to help other colleges seeking to implement guided pathways gain insight into how they might design and manage pathways reforms in their own contexts, with their own cultures and capacities.

Research Methods

The observations presented in this report are based on research by CCRC on how the AACC Pathways colleges were designing, planning, and beginning to implement guided pathways reforms during their first year of work on the project, which started in late 2015. In January 2016, before the first AACC Pathways Institute, we asked teams from all 30 colleges to complete a self-assessment of the extent to which they were implementing various elements of the guided pathways model. We then conducted telephone interviews with project leaders from all 30 colleges to discuss the results of the self-assessments. All colleges were asked to fill out this self-assessment again in September 2016, before the third institute.

Our observations in this report are also based on in-depth interviews and focus groups with faculty, advisors, and students, conducted during site visits at six of the colleges: Cleveland State Community College (TN), the Community College of Philadelphia, Front Range Community College (CO), Indian River State College (FL), Jackson College (MI), and San Jacinto College (TX). We chose this sample of colleges for field research to provide variation in terms of size, geography, and the extent to which each college had implemented guided pathways. In total, we interviewed over 240 faculty, administrators, staff, and students at these six colleges, as is summarized in Table 1.³

Table 1. Interview and Focus Group Participation

College	Interviews	Focus Group Participants			Total
		Faculty	Advisors	Students	
Cleveland State Community College	7	5	0 ^a	15	27
Community College of Philadelphia	18	6	6	7	37
Front Range Community College	27	7	4	8	46
Indian River State College	23	6	7	6	42
Jackson College	17	7	7	5	36
San Jacinto College	38	9	6	7	60
Total	130	40	30	48	248

^a At Cleveland State, faculty serve as academic advisors.

Organization of the Report

This report describes the AACC Pathways colleges' early progress in adopting guided pathways.

The section following this introduction examines how colleges are approaching guided pathways reforms. First, we provide a graphical overview of the colleges' progress in planning and implementing guided pathways in the first year of the project. We then present more detail on the colleges' progress, describing how they are approaching the four main practice areas of the pathways model: (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. We begin each of these subsections with a summary of the essential practices in each area and their significance.⁴ We describe how the AACC Pathways colleges are designing and implementing key features of the guided pathways model. We indicate where colleges are taking similar approaches and discuss especially novel or innovative strategies, providing examples in each case. We report lessons the colleges say they have learned from their experiences and advice they have offered to other colleges on how to design particular features of the model. We also highlight challenges that even colleges that are further along in the work are still trying to resolve.

In the next section, we describe how colleges are managing the substantial changes involved in implementing guided pathways. The observations in that section are based primarily on our interviews at the six colleges where we conducted fieldwork, since those interviews allowed us to explore the change process in some depth.

In the final section, we discuss a key next frontier for the AACC Pathways colleges and others implementing guided pathways reforms nationally: further rethinking how to help more students succeed in the gateway courses for college-level programs.

Colleges' First-Year Progress on Guided Pathways

This section examines the progress the AACC Pathways colleges are making planning and implementing guided pathways reforms. We begin by providing a graphical summary of the colleges' progress during the first year of the project. Following that, we describe in detail with examples how colleges are approaching each of the model's four main practice areas.

Summary of Year 1 Progress

To measure the AACC Pathways colleges' progress in implementing guided pathways, we asked colleges to fill out the "Guided Pathways Essential Practices: Scale of Adoption Assessment Tool," which AACC adapted from a version developed by CCRC.⁵ Responses were submitted by all 30 colleges in January 2016 before the first AACC Pathways Institute and then again in September 2016 before the third institute. To confirm these ratings, CCRC researchers conducted follow-up phone calls with teams from all 30 colleges. In analyzing the colleges' responses, we used a five-level scale to indicate the extent to which a college had adopted a given practice. These levels are defined in Table 2.

Level	Definition
At scale	Practice is implemented at scale—that is, for all students in all programs of study.
Scaling in progress	Scale implementation of the practice is in progress for all students.
Planning for scale implementation	College has made plans to implement the practice at scale and has started to put those plans into practice.
Not systematic	Practice is incomplete, inconsistent, informal, and/or optional.
Not occurring	College is currently not following or planning to follow this practice.

Figures 1–4 show the number of colleges by level of adoption for each essential practice in February 2016 and in December 2016. In the initial baseline assessment in February 2016, most of the AACC Pathways colleges fell into the "not systematic" category for most of the essential guided pathways practices. By the end of the first year of the project, however, the colleges had made significant progress across all four of the guided pathways practice areas. As of fall 2016, most colleges were well into the planning and development stages of these practices. That is, they had at least broad-based plans for implementing these practices at scale for all students in all programs of study, and were starting to carry out these plans.

The speed with which the AACC Pathways colleges are moving toward implementing pathways is impressive. Equally impressive is that the colleges are "going all in," planning to make changes in all four main areas of the guided pathways model rather than approach the reforms piecemeal. This is consistent with the theory, advanced in *Redesigning America's Community Colleges: A Clearer Path to Student Success* (Bailey, Jaggars, & Jenkins, 2015), that colleges will not see substantial

improvements in student outcomes unless they redesign programs and support services across the institution so that they work in concert to help students explore, enter, and complete programs of study that will prepare them for further education and career advancement. In the following subsections, we provide more details and many examples of how colleges are designing key features of the guided pathways model and how they are managing the change process.

Figure 1. Mapping Pathways to Student End Goals

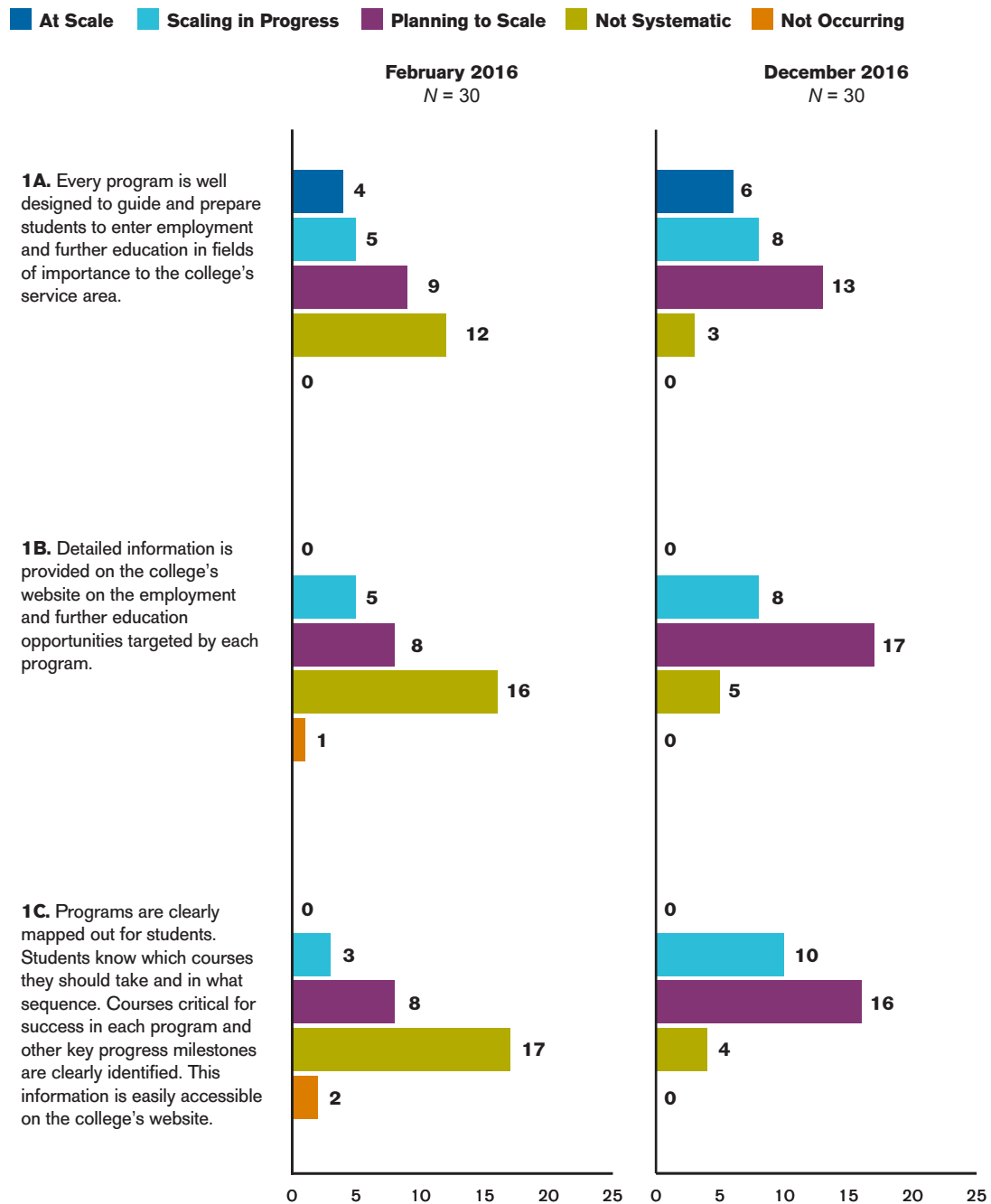


Figure 2. Helping Students Choose and Enter a Program Pathway

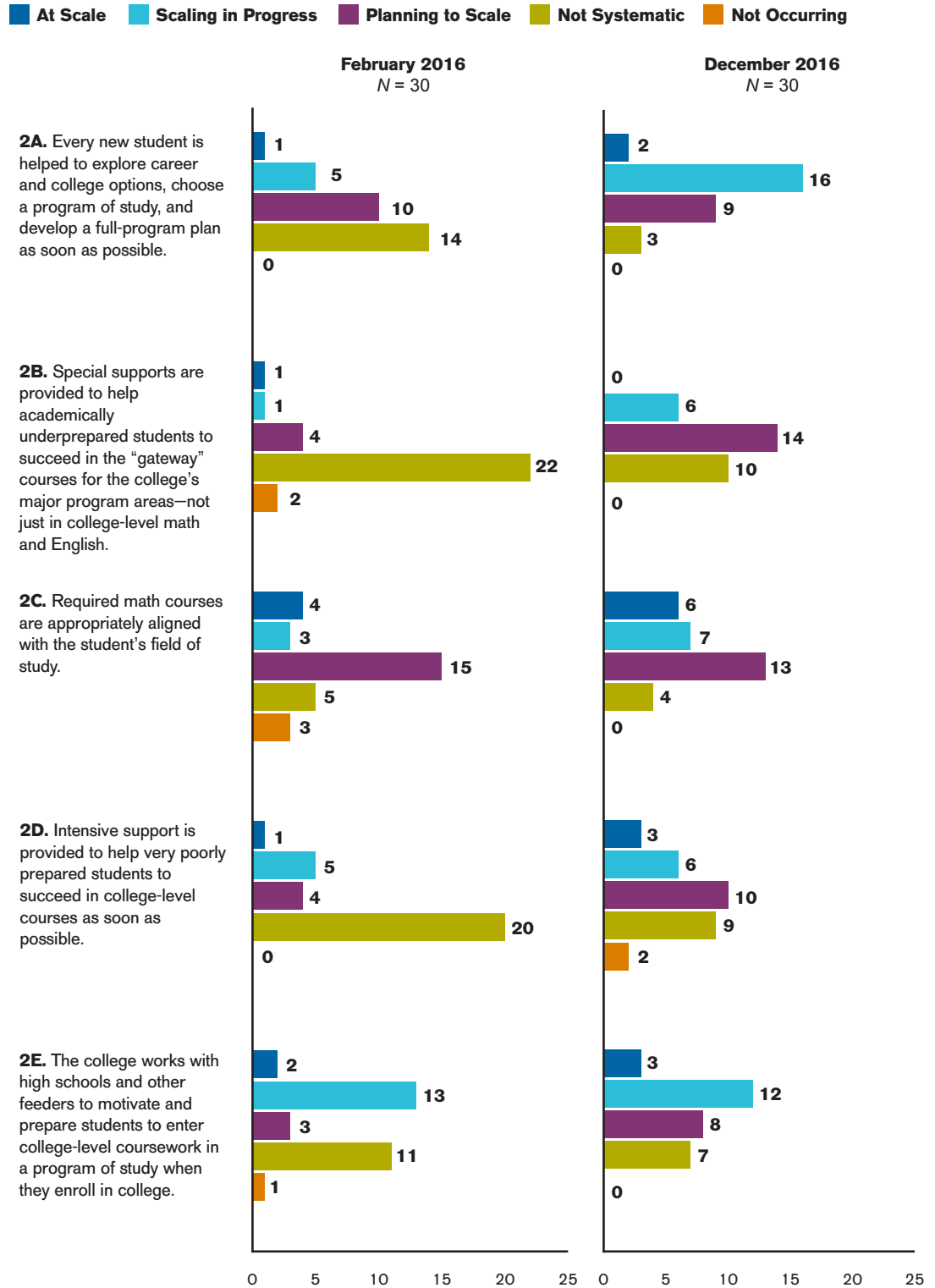


Figure 3. Keeping Students on Path

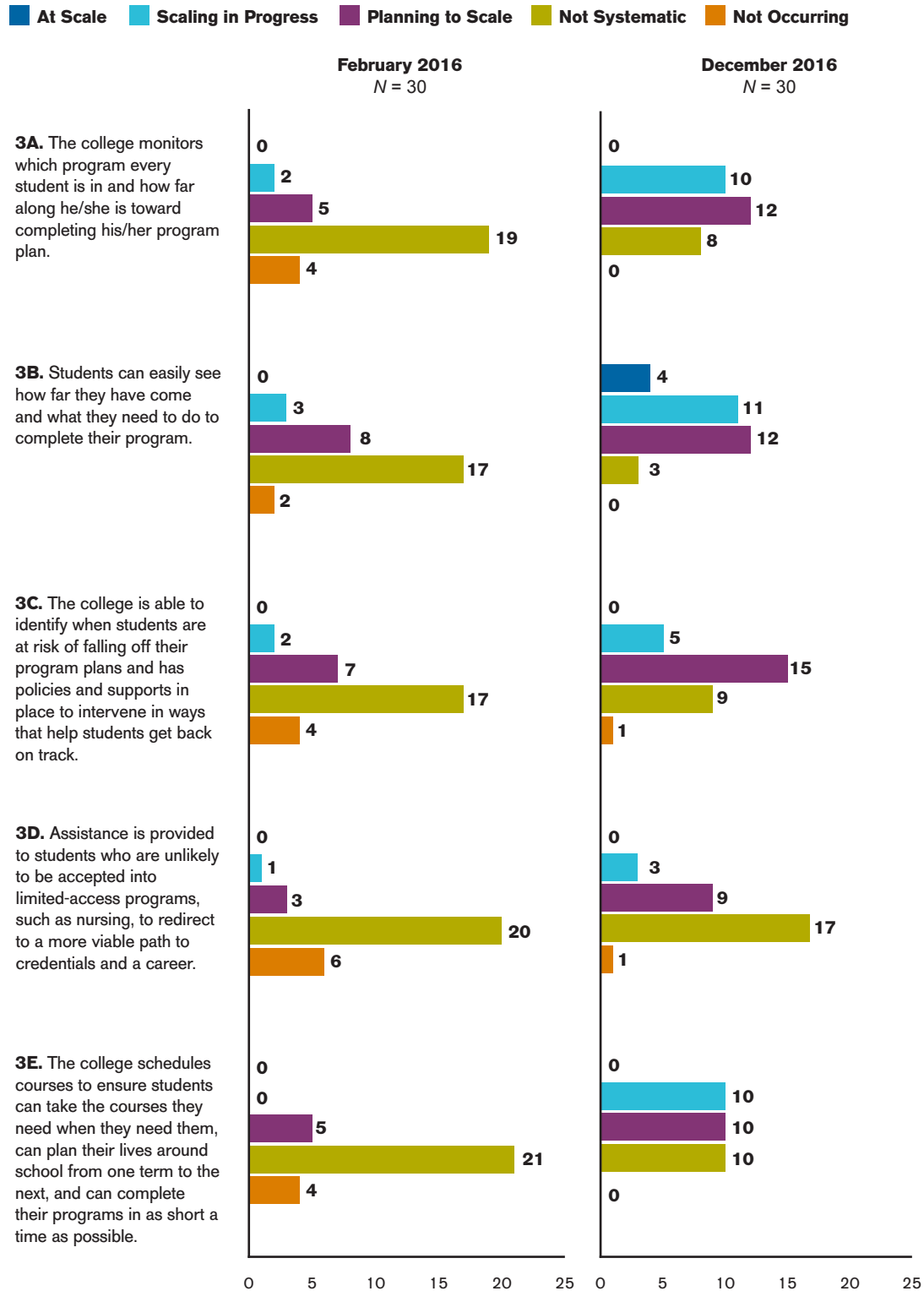
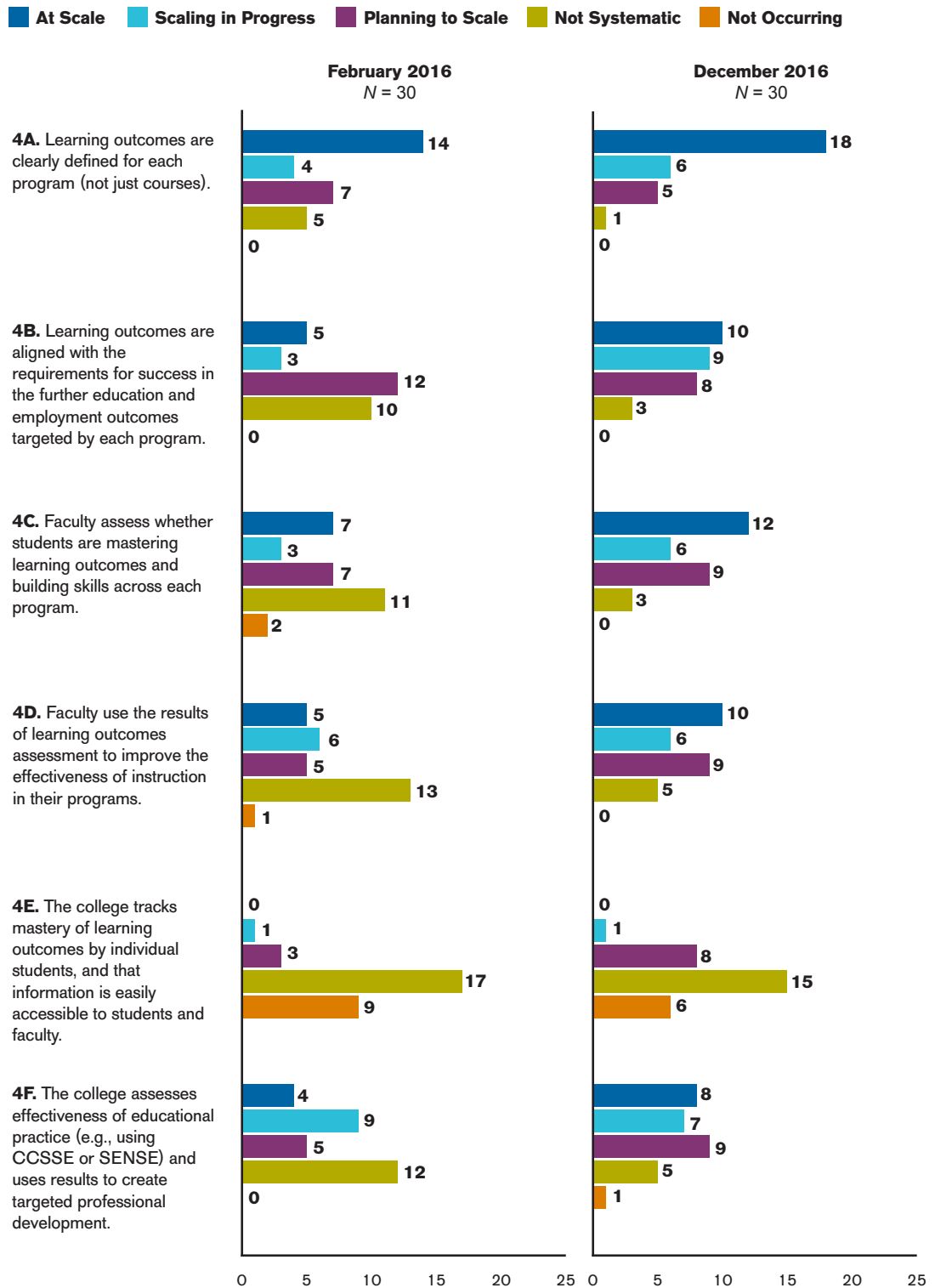


Figure 4. Ensuring That Students Are Learning



Note. CCSSE = Community College Survey of Student Engagement. SENSE = Survey of Entering Student Engagement.

Mapping Pathways to Student End Goals

Central to the guided pathways approach are efforts to clarify pathways to program completion, career advancement, and further education. In this subsection, we describe the progress the AACC Pathways colleges have made in mapping programs, and we explore in detail how they are approaching key aspects of this work.

Essential Pathways Mapping Practices

At community colleges, the paths into and through programs of study are often unclear and not well aligned with students' end goals. This problem is particularly acute for students seeking to transfer to four-year institutions. Information on transfer requirements is often complicated, hard to find, and unreliable. Prospective transfer students are typically encouraged to take general education courses on the premise that doing so will give them the most flexibility when they transfer. However, since general education requirements often vary by major, students who are not directed to the appropriate general education courses for their desired major may have to take additional lower division courses when they arrive at the four-year college to satisfy bachelor's degree requirements. While career-oriented programs tend to be more clearly structured, information on college websites on career options and job opportunities open to program graduates is often hard to access and difficult to interpret. Moreover, many students in career programs who earn certificates do not go on to earn degrees, despite the increasing need for bachelor's degrees for career advancement in many fields. For these students too, the paths to bachelor's degrees are often not well defined.

In the guided pathways model, colleges clearly map out every 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. For each program, colleges provide detailed information on the employment opportunities targeted by the program and the transfer requirements for bachelor's programs in related fields. All of this information is readily accessible on colleges' websites.

Progress With Program Mapping in Year 1

During the first year of the project, the AACC Pathways colleges made substantial progress in mapping programs of study. Almost all of the colleges began to map programs, or planned to do so. Most were using broad career fields, or *meta-majors*, as a framework for organizing their programs and the mapping process. Some were struggling with mapping pathways to four-year transfer destinations, given the multiplicity of options and requirements. Many, but not all, involved employers and colleagues from universities in reviewing their program maps. About a third were in the process of sequencing program courses and identifying critical courses and milestones for every program, but most were still planning to do so.

Several colleges were redesigning their websites around their program maps and meta-majors in order to show how each program connects to employment and further education opportunities. The other colleges were planning to do this, pending completion of the initial mapping process.

Insights on Program Mapping

Below, we describe how the AACC Pathways colleges are approaching key features of program mapping. To reiterate, we do not claim that these are the only or the best ways to map programs—but these examples may provide insights to other colleges on how they might go about implementing pathways reforms in their own contexts.

Colleges are using career-focused meta-majors as the framework for program mapping.

Most of the colleges are using broad career-focused fields, or meta-majors, as the framework for their program mapping efforts. For example, **San Jacinto College** organized its 144 degree and certificate programs into eight meta-majors (tentatively called “career pathways”) that are aligned with the 16 career clusters established by the State of Texas for postsecondary education and the five “endorsement” career fields that the Texas legislature has established to guide career and college planning by high school students.

Program mapping teams at the college, composed of faculty and staff and organized by meta-major, were asked by college leaders to create maps for every program that connected to students’ post-graduation opportunities. For career-technical programs, teams had to document that there are jobs connected with each program in the college’s service area—and that the jobs identified pay a living wage. Program chairs were required to verify demand for the certificates and degrees the college offers, and to obtain wage information. Departments eliminated programs when faculty became convinced that they did not lead to family-supporting jobs in demand. Maps for transfer programs had to align with the requirements for bachelor’s degree programs in related majors offered by the college’s five most common transfer destination institutions. This standard was motivated by the recognition by college personnel that most students graduate with an associate of general studies degree, which does not guarantee that they will be able to apply all of their credits toward a specific major upon transfer. San Jacinto is working on increasing the number of students who graduate with an associate degree related to a program area.

As part of the process of reviewing courses to include in program maps, the college interviewed students in low-enrollment courses to see why they were taking them. In one such course, a genetics course, students said they were taking the course because of increased popular attention to genetics, such as has been generated by the television show *CSI*. When the students were told that the course did not transfer or meet general education science requirements, they asked why San Jacinto was offering it. As a result of this feedback, the college decided to drop the course. The college is in the process of updating its website to more clearly show its meta-majors and program maps, and their connection to jobs and transfer opportunities.

The **Alamo Colleges** have organized their programs into six “Alamo Institutes” that are aligned with growth areas in the San Antonio region: creative and communication arts, business and entrepreneurship, health and biosciences, advanced manufacturing and logistics, public service, and science and technology. (The colleges have created a webpage with a video to explain the institutes and provide answers to frequently asked questions; see [Alamo Colleges District, n.d.](#)) At least one faculty member and one advisor serve as leads for each institute, and have been working

with program chairs in their institute to create program maps. For transfer programs, the colleges began by “backward mapping” from popular university transfer programs to determine which of the 120 hours of instruction in a bachelor’s program in a particular major could be taken at Alamo, and which need to be taken at a university. As of fall 2016, the Alamo Colleges have created advising guides with specific program requirements for the top 12 baccalaureate majors at each of eight local transfer institutions. The colleges are also working with employers to design career-technical programs so that they include embedded or “stacked” credentials and certifications that students can use to advance in the workplace while they are continuing their education.

In summer 2016, the **Community College of Philadelphia** held an institute that included 50 faculty leaders, department heads, and curriculum leaders with the goal of developing a framework for program mapping. Participants recommended organizing the college’s programs into seven “academic pathways.” Faculty-led mapping teams started to create sequenced, four-semester degree maps for two of the college’s largest programs: liberal arts and health care studies. Faculty are completing maps for all other programs to go into effect in fall 2017. All maps include critical courses and milestones.

Note that while we use the term *meta-majors* in this report to describe the groupings colleges are using to organize their programs and associated program maps, in practice, colleges are using terms that are more intelligible to their students and other key audiences. The terms they are using tend to convey a connection to careers and a sense of academic community. For example, **Monroe Community College** has created six “schools,” and **St. Petersburg College** has organized its programs into 10 “career and academic communities.”

Colleges are redesigning their websites to show how program maps connect to career and transfer opportunities.

AACC Pathways colleges are taking steps to demonstrate how their programs connect to opportunities for employment and further education, and they are redesigning their websites accordingly. To ensure that their programs prepare students to advance in the labor market and pursue further education, many colleges are involving employers and university partners in the program mapping process.

Northeast Wisconsin Technical College has organized its programs into 13 “fields of interest,” each of which has been mapped out with the help of employer advisory committees. The college has also recently entered into a chartered partnership with the University of Wisconsin–Green Bay to create stronger 2 + 2 and 1 + 3 transfer programs. On the “Fields of Interest” page on the college’s website ([Northeast Wisconsin Technical College, n.d.](#)), students can click on a field and see all of the programs offered by the college in that area. Each program is labeled with a symbol indicating whether it leads to an associate degree, a technical diploma, or a certificate, and information is provided on how students can “stack” credentials in a given field. Sixty percent of the college’s programs have stackable credentials, with credentials at each level designed to enable students to both advance in the labor market and move seamlessly to further education in the field.

Each program webpage also has a short description of the program and answers to the following questions:

- **What careers are in my future?** This section describes specific jobs that program graduates can secure in the Green Bay area, along with salary information based on six-month follow-up surveys of graduates by the college.
- **How do I get started in this program?** This section outlines admissions requirements, campuses where the program is available, and an application checklist.
- **What will I learn?** In this section, the college presents a curriculum map for the program (mapping teams are now working to ensure that courses are sequenced in the proper order).
- **What's next after graduation?** This section links to information on transfer programs offered in conjunction with university partners in related major fields.
- **What else do I need to know about the program?** Finally, the college describes industry credentials, internship opportunities, and other distinctive program features.

Program webpages also have detailed information on program costs and financial aid availability, and on how to contact a program admissions specialist at the college.

Pierce College in Washington State has created “roadmaps” for all of its programs, which it has organized into “career pathways.” On the college’s website, each roadmap has a schematic showing how the various credentials offered in that area connect with one another and with specific jobs and transfer opportunities in a given field (see [Pierce College, n.d.a](#)). Next to the roadmap schematics are links to resources that will help students answer the following questions:

- **What can I do in this career field?** A link to O*NET OnLine points students toward detailed information on relevant jobs.
- **Is this a growing career field in WA?** A link to data from the Washington State Employment Security Department helps students find information on wages, number of jobs, and growth projections for particular occupations.
- **Is this career field right for me?** A link to the Washington Career Bridge website guides students toward resources for exploring careers, learning about job trends, and finding program information.
- **Will this career field meet the needs of my family?** A link to the Washington State Self-Sufficiency Calculator helps students assess what level of income is needed to support a household of a given size and composition.

St. Petersburg College’s website lists all credential options for each of its 10 “career and academic communities.” All programs have maps, or what the college calls “pathways,” which include transfer plans for bachelor’s programs offered by partner universities, such as the University of South Florida (USF), and by St. Petersburg College itself. For the USF transfer programs, the pathways include both the associate-level courses students should take at St. Petersburg College so they can transfer to USF with junior standing in a particular major (and without excess credits) and the baccalaureate-level courses they will take at the university. Students who follow the pathways and meet other requirements are guaranteed admission to their desired major program at USF.

St. Petersburg College developed a college-wide communication plan to let students know where to access the pathways. In spring 2017, the college launched a website that provides information on its 10 career and academic communities; the programs under the communities; employment options and wages for related occupations; and testimonials from employers, alumni, faculty, and students (see [St. Petersburg College, n.d.](#), for an example of the webpage for the college’s business programs).

It is noteworthy that colleges are organizing career-technical and transfer programs together under the same meta-majors and, in some cases, showing how particular programs connect to both career advancement and further education. This approach represents a departure from the conventional community college practice of segregating the two types of programs. Separating career-technical and transfer programs is potentially problematic, since it makes it more difficult for transfer students to see how their programs connect to careers, and for career program students to learn about further education opportunities, particularly at the bachelor’s level and beyond.

Pathways Challenge: Finding Accurate Information on Local Job Opportunities

According to department chairs at **San Jacinto College**, one challenge in trying to connect programs to jobs is the lack of readily available data on the value of a degree in the local labor market. Program leads have reviewed online job postings, but “those are all over the place” in terms of the information they provide. In addition, small mom-and-pop businesses, medium-sized businesses, and large employers have different hiring criteria. **Cleveland State Community College** experienced similar challenges finding up-to-date career information for its region. For example, some of the salaries indicated on O*NET for human resources jobs were not realistic for Cleveland State’s region. Some faculty expressed concerns that by providing information on jobs, the college risks that information being perceived as a guarantee that program graduates will be able to get jobs that pay the salaries indicated on the website.

Colleges are indicating the math courses appropriate for a student’s meta-major or program on their program maps.

At several colleges, we heard that meta-majors and program maps potentially take the guesswork out of which math courses are appropriate for a given field of study. At least six of the colleges had fully developed and scaled sequences of math courses aligned with particular fields of study. Most of the others were developing such “math pathway” options, which they plan to recommend students take based on their initial field of interest.

For example, math faculty at **Lansing Community College** have established three math pathways: quantitative reasoning, STEM (science, technology, engineering, and mathematics), and statistics. To help with the program mapping process, the college’s math faculty outlined the content of each math pathway and how it aligns with particular career- and transfer-oriented fields. Based on this information, several of the college’s mapping teams changed the math requirement for their programs from algebra to quantitative reasoning. The college now must offer many more

sections of quantitative reasoning than it did in the past. Math faculty also created a “corequisite” support course to enable underprepared students to complete the quantitative reasoning course in one term. Students at the **Alamo Colleges** who intend to transfer are now advised to take one of three math pathways—statistics, contemporary math, or algebra—depending on which transfer plan they plan to pursue.

Pathways Challenge: Capturing Varying Transfer Requirements

Many of the AACC Pathways colleges are struggling with how to indicate to students where transfer requirements differ among four-year destination institutions—even in some cases in the same type of program. The **Alamo Colleges**, for example, found eight somewhat different sets of lower division course requirements for biology majors among the eight most common transfer destinations for their students.

Colleges are trying to find a balance between providing too much and too little choice.

In more clearly mapping out their programs, the AACC Pathways colleges are seeking to move away from the “cafeteria” model of education, in which students are given wide latitude to choose courses and thus risk cobbling together programs of study that are not coherent and that include credits that do not apply toward their desired major. But colleges are also concerned about being too prescriptive and limiting students’ ability to explore their interests. The guided pathways ideal is to help guide the exploration process without limiting students’ options.

Most of the colleges are seeking to limit the number of general education electives they offer to simplify students’ decisions and create more curricular coherence, but the approach varies by college. At **Jackson College**, faculty leading an ongoing effort to better define and assess general education learning outcomes decided to connect their work with the college’s efforts to map academic programs through the AACC Pathways Project. To ensure that general education courses were aligned with programs, faculty organized a speed-dating-style event in summer 2016. General education faculty sat at tables organized by the college’s general education learning outcomes. Program faculty circulated among these tables, and general education faculty described how their courses would fit with particular programs. As a result of these discussions, each of the college’s program maps includes a set of highly recommended general education courses. To be highly recommended, a course needs to: (a) cover one or more of the college’s general education learning outcomes, (b) align with the learning outcomes of a given program, and (c) be transferable as an elective in the given field. College leaders said that they would like to have ongoing discussions on the connections between general education courses and programs.

Cleveland State Community College allows students to choose two to three options on its maps to fulfill general education distribution requirements. In response to concerns from faculty that narrowing electives could threaten their jobs, the college created a large spreadsheet to make sure that elective options included a sufficient number of courses from each department. Faculty advisors at the college said that winnowing electives has helped them with advising, since in the

past many students had trouble deciding among the options. At the same time, the college is grappling with how to make clear to students that in many cases they can choose electives not on the maps if the default options do not suit their interests.

Pathways leaders are learning to stress with faculty, advisors, and students that the maps represent *recommended* paths. In reality, the academic plans that students develop will reflect the program maps, but they will be customized based on where students start (including what previous post-secondary education students bring with them) as well as on their particular interests and goals.

Some colleges are including cocurricular requirements on their program maps.

St. Petersburg College has added cocurricular activities to the pathways it has created for each program. In addition to the recommended sequence of courses, each map includes recommended cocurricular activities, such as completing an internship and applying for admission to a four-year institution, that students should do at particular stages of the program. **Lansing Community College** is working to incorporate required internships starting in the first semester into the maps for all occupational education programs. The college is also planning to require service learning or other active learning activities as part of its maps for students seeking to transfer to a four-year institution. **Broward College's** program maps display internship and job shadowing opportunities associated with specific courses. Its program maps include other important information as well. For example, the college's education program map offers guidance on the optimal times to take exams required for teacher certification, as specific courses are directly aligned to competencies tested by these exams.

Colleges are continuing to revise their maps after they have drafted them.

Reflecting on their experiences with program mapping, several AACC Pathways colleges have advised that once they have completed initial drafts, program mappers should revisit them.

St. Petersburg College recommends that colleges reflect on the initial drafts using questions such as the following (adapted from Crawford, 2016):

- Are all prerequisites identified and sequenced before the courses for which they are required?
- Is there a balance between theory and application courses each term?
- Are there any terms in which there is a heavy concentration of writing, math, critical thinking courses, or laboratory science courses?
- Which courses offer opportunities for students to satisfy particular general education or learning outcomes requirements?

Most of the AACC Pathways colleges recognize that maps are dynamic. Program curricula and requirements will change—and in some fields, such as technology, these changes will be frequent—so colleges are defining processes for updating maps.

Furthermore, colleges are finding that maps are a powerful heuristic that can be used as the basis for ongoing discussions between stakeholder groups inside and outside of the institu-

tion, including between faculty in career-technical education, general education, and academic support; between faculty and professional advisors; and between stakeholders from the college, employers, universities, and K-12 partners.

Pathways Challenge: Developing Program Maps for Underprepared Students

Many of the AACC Pathways colleges initially developed program maps for college-ready students, even though the majority of entering students are deemed not prepared for college-level coursework. As one college indicated, “We should have developed our maps not based on the mythical college-ready student, but on the students we have.” This college now recognizes that it needs to review the prerequisites for its 100-level courses—which can be numerous. (As the college’s provost remarked, “We joke that students have to get a bachelor’s degree before they can take 100-level courses.”) The college has found that many students who failed prerequisites but somehow slipped through the cracks and took a college-level course ended up passing the course. And respondents at the college indicated that they want students to be able to take courses in their field of interest right away. Colleges are grappling with this problem as part of larger efforts to connect ongoing developmental education reforms with guided pathways, as discussed in the next subsection.

Helping Students Choose and Enter a Program Pathway

Implementing pathways requires that colleges rethink the student intake experience with the goal of helping new students explore, choose, and successfully enter a program of study that is a good fit for their interests and talents. In this subsection, we describe the progress of the AACC Pathways colleges during the first year of the project in building program on-ramps for new students, and examine how they are approaching key aspects of this work.

Essential Pathways On-Ramp Practices

Community colleges often do little to help entering students explore options for college and careers and choose a program of study. This is the case even though many students arrive without clear goals for college and careers. New students are generally asked to identify a program of study when they apply so they can receive financial aid. They can, if they choose, visit a career center for more in-depth assessment and advising. However, most students do not make use of the career center until they near graduation, if they do so at all. What advising new students do receive is typically focused on selecting courses for the upcoming semester rather than on exploring student interests and goals and developing a plan to realize them. A substantial proportion of community college students drop out within a term or two, many discouraged by the lengthy conventional sequence of developmental English and math courses they must take before enrolling in college-level courses in their program of interest. Research by CCRC and others suggests that prerequisite developmental education often diverts students onto a remedial track rather than building their skills and motivation to enter a college-level program. CCRC research also indicates that college-level gateway courses in other subjects are often just

as important as those in math and English, although most remediation and academic support are focused on the latter two subjects.

Under the pathways model, colleges redesign their new student experience to help students explore career and college options and choose a program or meta-major and develop a full-program plan early on. Special supports are provided to help students take and pass college-level courses in pathway-appropriate math and English and other foundational subjects in their field of interest—ideally so that students can complete most of their core introductory courses in their first year. Intensive support is provided to help severely underprepared students succeed in college-level courses as soon as possible. Colleges work with high schools to help students explore career and college interests and prepare them to enroll in college and enter a college-level program of study directly after they complete high school.

Progress Building Program On-Ramps in Year 1

In the first project year, the AACC Pathways colleges made significant progress toward creating opportunities for new students to explore career and college options and to develop academic plans. Two thirds of the colleges had implemented or were in the process of finalizing procedures for using meta-majors to help students choose a field of study upon entry. As part of the onboarding experience, colleges were moving toward requiring students to develop at least a preliminary full-program academic plan by the end of their first term. Most colleges are now requiring students to enroll in first-year experience courses. These courses typically expose students to the college's meta-majors; enable students to take career, interest, and personality assessments; and help students create an educational plan in a program suited to their interests and goals.

Almost all of the AACC Pathways colleges had implemented reforms to help students accelerate through developmental requirements in math and English, but most colleges were not yet offering these at scale. Common reforms included the creation of integrated reading and writing developmental courses; corequisite English courses modeled after the Community College of Baltimore County's Accelerated Learning Program; and modularized, emporium, or corequisite math courses. In the colleges that were creating math pathways for different fields of study, most had created developmental courses for each path, or were planning to do so. Several colleges were also in the process of creating developmental English courses that were contextualized to fields of study. However, with a couple of notable exceptions, most of the AACC Pathways colleges had not connected their developmental education reforms to their efforts to map clearer program pathways and provide supports to help students complete programs.

Similarly, all AACC Pathways colleges offer programs to support students who are severely underprepared, such as adult basic education programs and summer bridge programs. However, these programs need to be connected with college-level programs of study and offered at a scale sufficient to address the need.

A handful of colleges were beginning to integrate academic supports with program-area gateway courses (in addition to college-level math and English). All of the colleges offer tutoring, supplemental instruction, and other academic supports, but these typically remained optional for students and were not necessarily closely tied to the learning needs of students in college-level gateway courses.

At least half of the colleges were planning to extend pathways down into high schools by helping high school students explore options for careers and preparing them to enter a college-level field of study when they enroll in college (ideally directly after they graduate from high school). Some were already moving in this direction.

Insights on Building Program On-Ramps

Below, we describe how the AACC Pathways colleges are approaching key features of this practice area.

Colleges are finding that organizing programs by meta-major can help students and others make sense of colleges' many offerings.

Interviewees at some colleges told us that organizing their programs around a relatively small number of fields can help students make sense of and begin to explore the many programs their college offers. As we heard from an advisor at **Cleveland State Community College**, which has organized its programs into seven “career communities,” “It’s nice for students to be able to see seven program area options when they walk in the door. [We ask them:] ‘Can you identify with any of these seven?’ . . . This begins the process of exploration.”

Recruiters at **Indian River State College**, which has organized its programs into eight “interest areas,” said that they have found these meta-majors and the associated program maps (see [Indian River State College, n.d.](#)) to be extremely valuable in introducing the college’s programs to prospective students. Douglas Doran, Indian River’s director of enrollment management, said that he tells recruiters: “It is important to inspire [prospective students] with something they are interested in doing.” Recruiters often show prospective students a video the college has developed on its meta-majors (the video is available at [Reis, 2015](#)).⁶ Doran said that he and other recruiters have found the program maps, or “guided pathway templates,” that faculty and staff have developed for every program under each meta-major to be useful in explaining to students what particular programs entail: “You can point to the guided pathway template and say, ‘If you are interested in business, this is what you need to take.’”

Colleges are helping students explore careers and programs from the time they enter college, choose at least a meta-major, and develop a full-program plan in the first term.

One of the most dramatic changes in practice we saw among the AACC Pathways colleges is that most are moving to a model in which students are helped to explore college and career options, choose a program, and develop at least a preliminary full-program plan by the end of the first term. Most colleges intend to use these plans to schedule classes and to enable students and advisors to monitor students’ progress throughout their experience at the college so that students stay on-plan and complete their programs in the intended time frame.

San Jacinto College is redesigning its new student orientation to focus on helping students choose a program. Orientation, which is now required for all new students, is shorter than it was in the past. All students are required to take the Focus 2, a career assessment and planning tool. Based on the results of the assessment, students are coded as having low, medium, or high confidence

about the field they want to pursue. This rating is stored in Banner for advisors to see when they meet with students. Students are also required to take a student success course in their first term, in which they complete career exploration exercises and develop a full-program plan. The college's career and employment team visits each class three times to work with students on first-semester activities, including exploring career options, developing an educational plan, and registering for the next semester.

At **Indian River State College**, meta-majors are used to assist new students who are undecided about their program goals. All degree- and certificate-seeking students are required to meet with an advisor in a meeting called "Getting to Know You," ideally before the first day of classes. Advisors have developed a series of scripts and checklists for students and advisors in these meetings. Questions include "What are your interests and strengths?" and "Based on your high school transcript, does your area of interest align with your skills?"

To help students choose a major, as of spring 2016, all new associate of arts degree-seeking and dual enrollment students at Indian River are required to take a student success course. This course includes a career exploration module to help students decide whether the program they have selected is a good fit based on their career, academic, and personal interests and goals. Advisors have students who are not firmly decided on a career take the Career Coach, which assesses students' career interests and guides them to career opportunities that might be a good fit. All college advising staff were trained on Career Coach prior to its launch in June 2016. Later in the first term, every student meets with his or her advisor to develop a full-program plan and prepare to register for second-term courses. Associate of arts degree-seeking students who are completely undecided when they arrive still must choose a major in their first term. Advisors will create a first-semester plan for these students; require them to participate in career-search activities, such as interest assessments, the Career Coach assessment, and O*NET research; and schedule another appointment before their second semester to finalize their major decision and complete their pathway plan.

Students applying to selective admissions programs at Indian River are required to attend an extensive information session to make sure the area they have chosen is right for them. Sessions include information about the program and careers in the field, as well as activities to give students a sense of what working in the field is really like.

Students entering **St. Petersburg College** are introduced to the college's "career and academic communities" and the programs or "pathways" within them at orientation. All new students are required to take a series of noncredit "Smart Start" workshop modules, in which they build their degree plans. The college's advisors, who have been cross-trained do to both career and academic advising, teach these modules, which involve 1.5 hours per week of class time and a similar amount of homework. Topics include "What are your career goals?"; "How do you decide on a pathway plan?"; and "How can you make best use of the college's career and academic advisors and other student supports?" The plans students develop are stored in students' portals on the college's PeopleSoft system and are accessible to advisors. Students work with their advisor over the first term or two to refine their pathway plan. Students can change their pathway, but they need to consult with an advisor to do so.

Lansing Community College now requires all students to attend a new student orientation (parents are invited too) where students are exposed to the college's "career community" meta-majors. Students take an Interest Profiler inventory to help them understand how their interests fit with the college's various programs of study. Students are given a first-semester map associated with the career community closest to their interests. During the orientation, students identify their professional advisor and faculty advisor and use the map to make a first-semester schedule. Students at Lansing are allowed to be undecided about their career community for one semester, but they are required to meet with an advisor before the end of the first semester to choose a career community and register for the second semester. Faculty, advisors, and success coaches are collaborating on developing "Career Experiences" orientation sessions for the career communities to help students learn about the career and educational opportunities and requirements in each field.

Northeast Wisconsin Technical College conducts an intake survey of new students at registration that includes a question about how certain they are about their career and program plans. The system flags students who are not sure, and career advisors reach out to them and help them decide.

All new students at **Paris Junior College** are required to take a student success course called Learning Frameworks. As part of this course, students are helped to choose a major and are required to meet with an advisor to develop a plan with three components: career, program, and financial. Student plans will be accessible through the college's student information system by summer 2017 so that students and advisors will be able to monitor students' progress. The system will issue alerts when students fall off their plans.

To help students enter an academic and career pathway, the **Community College of Philadelphia** has created a first-year experience course that introduces students to their area of study and requires that students make education, career, and financial plans. Students in the course are assigned to full-time advisors who work with them to develop their plans. Currently, the college offers first-year experience courses tailored to its health care studies and liberal arts meta-majors; a contextualized first-year experience course for students in business programs has been developed and is slated for implementation in the fall of 2017. The college is considering offering contextualized first-year experience courses for other meta-majors and will require students to take these courses within their first 12 credits.

Other AACC Pathways colleges that are using meta-majors to reorganize their intake processes and that have redesigned first-year experience courses to help students explore careers and develop at least a preliminary a full-program plan in the first term include **Broward College, Cleveland State Community College, Jackson College, and Monroe Community College.**

Colleges are ensuring that students get a taste of a field of interest in their first semester.

Interviewees at several institutions emphasized how important it is for students to get exposure to a field of interest from the start of their college experience. As a dean from one college said, "If a student gets a taste of something that interests them, it is going to help them choose a direction and motivate them to persist."

Several colleges, including **Cleveland State Community College**, **the Community College of Philadelphia**, and **Jackson College**, are helping to make this happen by customizing student success courses to students' meta-majors. However, these colleges said that it is not always feasible to have every student in a success course customized to their field of interest.

Many interviewees mentioned the value of students' taking at least one content course in their field of interest in the first term. This goes against the commonly held idea that students should explore their interests by taking general education courses. For example, in creating maps for their programs, faculty at **Lansing Community College** included at least two courses in the major or "career community" meta-major in the first semester. Whereas colleges typically want students to take math and English in the first semester, it is notable that all of Lansing's program maps have students taking a writing course in the first semester and math in the second, except for programs where math needs to be taken in the first semester. This creates space for at least one course in the student's field of interest in the first semester.

Several other colleges have also created first-semester maps for undecided students that include at least one course (in addition to a required student success course) in an initial meta-major the student has indicated interest in. These include the **Alamo Colleges**, **Jackson College**, **San Jacinto College**, and **St. Petersburg College**. These colleges are designing maps to give students a taste of a field of interest, but without "locking them in" such that students would lose credits if they changed their mind in the first two to three terms.

For some programs, such as nursing or engineering, it may not be appropriate to take a content course from the start. In those cases, it is still important to give students an introduction to their field in their first term—through a student success course, extracurricular activities, or some other means.

As part of its student success seminar, now required of all new students, **Jackson College** holds "showcases" for each of the college's six "pathways" meta-majors. In fall 2016, the showcases for liberal arts and for business and computer technology each had 300 students attend. All faculty members from each program attended. One faculty member served as master of ceremonies, other faculty members introduced themselves and their areas of interest, and students were offered handouts and snacks. After the presentation and discussion, faculty gave students a tour of their facilities and labs. Faculty at the college said that they are beginning to realize that they can recruit students into their programs by getting more involved in new student orientations, advising sessions, and student success courses organized for their meta-majors.

Colleges are experimenting with promising approaches to developmental education—but most have not yet connected these efforts to their guided pathways reforms.

Virtually all of the AACC Pathways colleges, like many others across the country, are experimenting with new approaches to developmental education and assessment. Most report that they are achieving good results in pilots of these strategies, yet very few of the AACC Pathways colleges (and few community colleges across the country) have implemented developmental education reforms at scale. Most rely primarily on standardized tests to place students into prerequisite reme-

dial sequences—which in some cases have been shortened, but which still prevent students from entering college-level courses right away.

If new students have a first-term schedule consisting mainly of developmental courses, they may not be able to take a course in their field of interest. Unless colleges can connect developmental reforms with pathways redesigns, too many students will continue to be sorted out in the intake process, unable to explore and choose a program of study from the start. For colleges to enable the majority of their students to enter a college-level program as quickly as possible—ideally in the first year—they are going to have to rethink how they approach placement testing and provide academic support, and to better connect efforts in those areas to their pathways reforms.

One of the AACC Pathways colleges that has linked its reforms in development education with its guided pathways work, with very positive results, is **Cleveland State Community College**. Starting in fall 2015, the college began placing all new students with an ACT subscore for English of less than 18 into corequisite English Composition, and all those with an ACT math subscore of less than 19 into corequisite math. Under the corequisite model, these students take college-level math and English courses as well as a companion course in which they are provided additional academic support to help them pass the college-level course. In math, while in the past most students were placed into an algebra track by default, now only about a quarter of students take algebra; the majority take statistics based on the maps for their “career community” meta-major.

The results of the corequisite reforms at Cleveland State have been impressive. The percentage of first-time-in-college students completing college-level math in their first year nearly doubled from 16 percent in 2012–13 to 30 percent in 2015–16. College faculty and administrators believe that one reason for the increased rate of success in math is that students are now taking math courses relevant to their career community field of interest. The percentage of students completing college-level English in their first year increased from 48 percent in 2012–13 to 57 percent in 2015–16. Thus, Cleveland State has enabled students who in the past would have taken only developmental education in their first term to instead take corequisite writing and math, a student success course, and an introductory course in their field of interest.

Cleveland State has been a pioneer in corequisite education. Its efforts have helped to inform a statewide effort, led by the Tennessee Board of Regents, to implement corequisite education connected with guided pathways among all 13 community colleges in the state. This work has produced dramatic increases in the rates at which students pass college-level math and English in their first year ([Denley, 2016](#)).

A couple of other colleges are making progress connecting their developmental reforms with their pathways redesigns. At **Stanly Community College**, developmental education redesign started at the state level in 2013, with a dual focus on using multiple measures for student placement and offering modularized or accelerated courses for students who do not meet the requirements for college-level courses. The state requirements for college readiness are threefold: Students must have graduated from high school within the last five years, have earned at least a 2.6 high school grade point average (GPA), and have taken at least four math courses (for college-level math) or

four English courses (for college-level English) in high school. Students who do not meet all three requirements for each subject take a placement test. In math, this test identifies which (if any) of eight developmental modules they need to complete. Students can complete the modules online at home or at an on-campus computer lab. Additionally, Stanly now offers four math sequences, which are built into every academic program: quantitative reasoning, statistics, precalculus, and a vocational math course. The modules students take are tailored to their math pathway. In English, the results of the placement test determine how many (up to three) levels of developmental education students must take. Each developmental English course is eight weeks long and is available in person, online, or as a hybrid course. The college's gateway English course is also offered in an eight-week session so that even students who receive the lowest developmental placement might complete the gateway course within their first year.

After implementing multiple measures for placement, modularized developmental math, math pathways, and accelerated English courses, Stanly Community College noticed that students with a high school GPA between 2.6 and 3.0 were struggling to pass gateway math and English courses. As a result, the college built a remedial module that students complete within the first two weeks of their gateway math and English courses. The module is contained inside the gateway course, and all enrolled students are required to complete the module.

Together, these changes in Stanly's placement process, developmental course structure, and math course content have resulted in an increase in success rates in gateway courses. Among first-time-in-college students, the percentage of students completing college-level math and English within their first year has increased from 7 percent in 2010–11 to 16 percent in 2015–16.

Wallace State Community College in Alabama has implemented multiple acceleration initiatives to move underprepared students more quickly into academic programs of study and propel them toward transfer to a university or entry into the workforce. First, the college received a waiver from the state system chancellor's office that allowed the college to lower the placement test score cutoffs for college-level courses. With the help of an innovation grant from the state, the college also moved to an emporium instructional model in developmental math (as well as in many college-level math courses). This accelerated approach has been taken to scale: All students placed into developmental math courses can now take two sequential courses in a single semester. The other math option for students who are not yet college-ready is the Accelerated Math Program, which pairs developmental math and college algebra courses. The paired courses are taught by the same instructor. In fall 2016, 86 percent of students who enrolled in the Accelerated Math Program successfully completed both the developmental course and the entry-level algebra course. In English, courses are also offered as corequisites, following the Community College of Baltimore County's Accelerated Learning Program model. Early results show that students in Wallace State's Accelerated Learning Program courses are outperforming students who test directly into the gateway English course. In both math and English, students in accelerated courses are offered additional support, including access to a new, centralized academic resource center and success coaching.

Some colleges are strengthening academic support in critical program courses other than math and English, but these efforts need to be expanded.

At most community colleges, developmental education and academic support are largely focused on math and English. As the AACC Pathways colleges work to identify critical courses for program areas as part of the mapping process, they are seeing the need to strengthen academic support for students in other subject areas as well.

A handful of the colleges are beginning to explore ways to strengthen academic supports for gateway courses in subjects other than math and English. Starting about two years ago, faculty teaching general education gateway courses at **Northeast Wisconsin Technical College** began conducting assessments in the first two weeks of class to identify areas where students' skills are weak. Faculty use the assessment results to refer struggling students to academic coaching and other support services.

Indian River State College is extending innovations in academic support that were developed for students in math and English to other subject areas. Starting in fall 2016, the college began providing tutoring for students in all sections of selected gateway courses, including Biology 101 and Chemistry 101. During the first week of class, faculty members give students a diagnostic test to identify their areas of weakness. In the second week, a tutor visits the class to introduce himself or herself and discuss availability. Faculty may suggest to certain students that they seek tutoring support. Thus far, it is up to students to decide if they want to use tutors, but the college is considering making participation mandatory for students who enter gateway courses with very weak skills.

Other colleges provide support for students in high-enrollment, high-failure courses in an effort to turn these "gatekeeper" courses into "gateways." As colleges pay more attention to courses that are critical to success in particular fields, they will need to step up these efforts.

Colleges are beginning to build pathways down into high schools, often starting with dual enrollment students.

A handful of colleges that are further along with pathways reforms are beginning to extend pathways down into high schools, with the aim of helping students to begin exploring career and college options and to prepare to enter a program of study when they enroll in college. Some colleges are doing this by taking a more strategic approach to the courses they offer high school students through dual enrollment arrangements.

High school students enrolled in courses at **Indian River State College** are required to take the same student success course that the college requires of its associate of arts students. This course includes assignments in which students explore careers and related programs at the college. As part of the course, students are required to work with college advisors to create a customized full-program academic plan.

Other high school students learn about Indian River's meta-majors and programs during its annual Great Explorations event, where students from all local high schools are invited to campus

to explore programs and tour the college. In 2016, Great Explorations activities were organized around the college's meta-majors. Participating high school students were asked to choose a meta-major of interest to explore on campus. Students visited with faculty and completed exercises associated with their chosen meta-majors. Employers were also invited to talk about careers in their fields. Over the next year, Indian River plans to collaborate with local high schools to construct a "pre-guided pathways" curriculum that shows students and counselors which courses students should take in high school to prepare to enter one of the college's programs in a particular meta-major.

Enrollment of high school students in college courses at **Columbus State Community College** has more than doubled to around 3,500 since 2015, when Ohio enacted a dual enrollment policy called College Credit Plus. College Credit Plus students take the same student success course that is required of all students who enter Columbus State with fewer than 15 transfer credits. The course helps students develop a career and academic plan. Moving forward, the course will expose students to programs in the college's eight "career and academic pathways" meta-majors.

Similarly, **Pierce College** requires high school students in its dual enrollment courses to take a first-year experience course, which includes career exploration and requires students to complete a full education plan. In addition, the college has been working with its feeder school districts to map paths from local high schools into the college's programs and beyond to bachelor's programs at partner universities. Pierce utilizes a tool called Washington Career Pathways to build program maps that show wage and skill progression as students continue their education. The maps show how students' high school course-taking connects to career pathways at Pierce, as well as other local postsecondary institutions students might attend. Clover Park School District served as the pilot district for these maps and has worked with Pierce College to improve its messaging about career pathways (see [Clover Park School District, n.d.](#)). Pierce continues to develop maps with other districts as the web tool allows for templates to be developed, replicated, and customized (see [Pierce College, n.d.b.](#)).

Students in local districts can also use Career Cruising software to see how high school courses connect to college-level program maps at Pierce. Career Cruising provides transition planning for students in the K-12 system, who utilize the software to build their "high school and beyond" plans by exploring programs of study at Pierce and mapping out the high school and college courses needed to reach their employment and educational goals. Students can continue to access that same resource when they transition to Pierce. Using these maps, students, parents, and advisors can visualize the pathways that lead from completing a high school program to completing a marketable degree or credential at Pierce, including Pierce's own bachelor of applied science degrees, or a bachelor's degree with partner universities.

El Paso Community College is another college that is considering restructuring its dual enrollment offerings around the program pathways it has created. Such efforts hold potential for increasing the number of students who leave high school not only prepared to enter college directly but also *motivated* to enroll in a college program of study—and in some cases, having already gained early momentum from dual enrollment courses they took in high school.

Keeping Students on Path

Colleges implementing pathways need to redesign their advising systems so they can help students make steady progress on their program plans, intervene when students are struggling, and help students consider a new direction when they change their minds or fail to make progress on their initial plans. In this subsection, we describe the progress the AACC Pathways colleges have made in redesigning advising to support student progression into and through programs, and we explore how they are approaching key aspects of this work.

Essential Pathways Advising Practices

Except for students in selective entry or other special programs, community colleges generally do not monitor students' progress toward program completion. Advising is available, but mainly for those who seek it out. Many students, if not most, self-advise. As a result, too many meander and take credits that do not add up to a degree, while many others quit in frustration. Students who are unable to qualify for selective programs are often not helped to find an alternate path to a credential. Most students who transfer to a four-year institution do so without first earning a community college credential. Too many who earn an associate degree end up taking substantially more credits than are required for their degree.

Under the guided pathways model, advisors monitor which program every student is in and how far along the student is toward completing his or her program plan. Students too can easily see their progress and what they need to do to complete their program. Advisors and students are alerted when students deviate from their plans, and policies and supports are in place to help students get back on track. Assistance 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 students can take the courses they need when they need them, can plan their lives around school from one term to the next, and can complete their programs in as short a time as possible.

Progress Redesigning Advising in Year 1

All of the AACC Pathways colleges are strengthening advising to help students make timely progress on their program plans and to enable appropriate interventions when students are floundering.

Compared with where they were at the start of the project, by the end of the first project year, many more of the AACC Pathways colleges were in the process of implementing procedures and systems to monitor every student's progress on his or her program plan and to enable students to see what they have accomplished and how far they have to go. However, many colleges were still trying to figure out how to monitor individual students' progress given their high student-to-advisor ratios. Many were also grappling with how to ensure that students' program plans are accessible to students and advisors in the student information system, and how to provide advisors, faculty, and students with easy access to data on students' progress. Most of the colleges were upgrading or otherwise enhancing their student information systems to help monitor students' progress on their plans. A handful of colleges were also implementing policies and processes for helping students who are unlikely to be accepted into limited-access programs to choose a more viable path.

Most of the AACC Pathways colleges were working on creating more predictable schedules for students. Several were developing two-year schedules and were offering “course guarantees” to ensure that courses would not be cancelled. A handful of colleges were beginning to schedule classes based on students’ plans so that students could take the courses they needed to complete their degree on schedule. For other colleges to do this, they first must ensure that every student is on a full-program plan.

Insights on Redesigning Advising

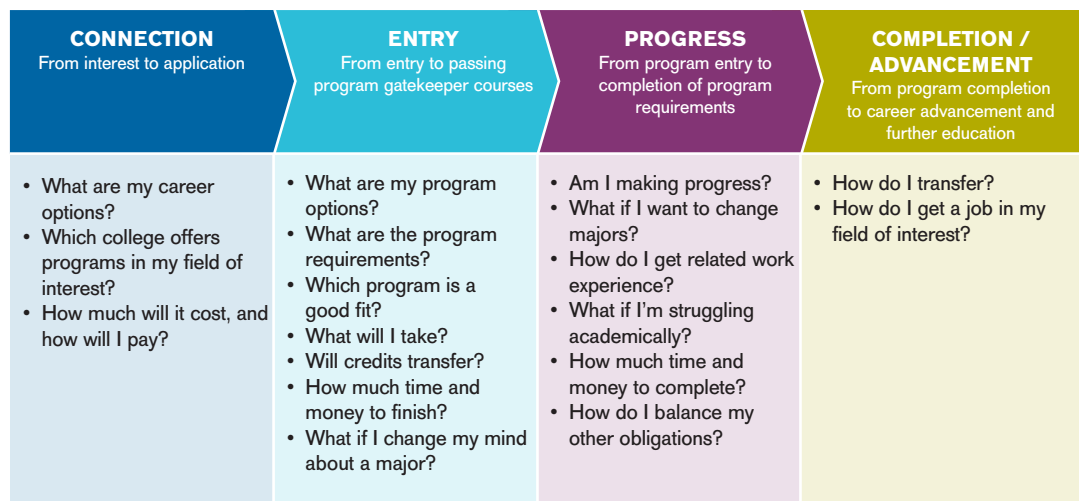
Here we provide details on how colleges are approaching key aspects of advising redesign in support of their pathways work.

Colleges are redefining advising roles—and in some cases hiring new advisors—to support a more proactive model of advising, with check-ins at key decision points along students’ paths.

All of the AACC Pathways colleges are taking steps to redesign advising to better support progression by students into and through programs, and beyond to jobs and further education. Colleges are finding this to be one of the most challenging aspects of guided pathways. This may be because it requires a fundamental redesign of advising—one that entails new roles not only for staff and faculty with formal advising roles but also for everyone else, since under pathways, everyone at the college is responsible for helping to advise students along their paths.

Advising is organized in different ways at different colleges: Some have professional advisors, some have faculty advisors, and others have a combination. Whatever their existing organization and roles for advisors, the AACC Pathways colleges are stepping back and considering what types of information and advising are needed by students at key decision points along their pathways. Some of these decision points are illustrated in Figure 5, along with questions students ask at each point.

Figure 5. Key Decision Points on the Path



Note. This diagram is adapted from the Completion by Design Loss/Momentum Framework (Completion by Design, n.d.).

After identifying important questions that arise at key decision points, the colleges are clarifying the roles and responsibilities of recruiters and admissions staff, professional advisors, counselors, faculty, and other staff to help students answer these questions. Different colleges are approaching this in different ways.

Some of the AACC Pathways colleges are embedding professional advisors into their meta-majors, so that advisors can serve as specialists for one field rather than having to know the options and requirements for every field in which the college offers programs. Career-technical program chairs and faculty in particular like this arrangement; they want specialist advisors who know their programs. Students also want to talk to someone with experience in their field of interest. But who should advise students upon entry, before they have selected a major? And what if students decide to change their major? In colleges with multiple campuses, there may not be enough advisors to have one in every field on every satellite campus. When we interviewed students at the colleges we visited, some said they wanted both an advisor who could guide them throughout their time at the college and someone in their field of study whom they could turn to for career advice and connections.

Many of the colleges are trying to provide students with both a case manager and a field expert advisor. Some colleges are both embedding professional advisors in programs of study and assigning separate generalist advisors to help students get into a program of study and to monitor their progress to completion. For example, **Lansing Community College** is embedding its professional advisors into each of its five “career communities” (arts and communication; business, economics, and management; computer/industrial technology; health and public services; and liberal arts). The college is hiring 20 “academic success coaches,” whose job will be to keep all students, regardless of their field, on their plans. This will free up advisors in the career communities to focus on higher level work designing activities for students and working with faculty to improve programs in their respective career communities. The plan is for every student to have an academic advisor and a faculty advisor in a career community, as well as an academic success coach.

St. Petersburg College has also assigned at least one professional advisor to each of its 10 career and academic communities. The college provided training so that all advisors—now called “career and academic advisors”—are certified as career development facilitators. At **Tulsa Community College**, the career services personnel are different from the academic advisors. The former are helped to become certified global career development facilitators.

Other colleges are assigning generalist advisors to monitor a caseload of students throughout their time at the college, and also appointing faculty or staff within an area of study to serve as mentors or coaches who advise students about careers and further education and help them make connections in their field. These colleges are also assigning generalist advisors to serve as liaisons with specific meta-majors and programs, so that they can help other advisors stay up-to-date with changes in particular program areas. Colleges moving in this direction include **Cleveland State Community College**, which has faculty advisors and generalist “success coaches,” and **Indian River State College**, which has “faculty counselors” as liaisons for every meta-major. All advising staff at Indian River (including the faculty counselors) have a caseload of assigned students across all majors.

Several AACC Pathways colleges have hired additional advisors to handle the increased amount of case management and time spent planning with students that guided pathways requires. Over the past year, **Indian River State College** has hired seven new advisors, reducing the average student-to-advisor ratio from 800:1 to approximately 410:1. The college assigned faculty counselors to one of the college's eight meta-majors with broader responsibilities, including developing strategies for communicating with students and supporting the professional development of advisors and faculty in their meta-major. The college has provided intensive training for advisors and developed scripts and checklists for key advising functions. Advisors at the college are trying to automate as many bureaucratic and logistical tasks as possible to create more time for discussing plans with students and providing intrusive advising for those who are struggling. Returning students are required to meet with advisors for "milestone checkups" at 25 percent, 50 percent, and 75 percent program completion checkpoints.

Previously, **Jackson College** had four advisors—one attached to each of its four main program areas—for over 5,000 students. There were long lines and wait times to see these advisors, so most students registered for courses without seeing an advisor. Over the past two years, the college has hired 12 new advisors and changed job descriptions and reassigned other staff members who had advising duties for a total of 18 advisors, whom the college calls "student success navigators." (As discussed later, the governing board approved a CEO-recommended tuition increase to support hiring these new advisors.) Navigators are assigned caseloads of students alphabetically based on their last names. They are required to reach out to new students *before* they enroll; see them at least three times in person during their first term; and contact them at least three times by email, phone, or text during their first term. Navigators stay with their students throughout their time at the college. The college aims to hire enough navigators to reduce the student-to-advisor ratio to 200:1. The college's financial aid director said that he works closely with the navigators. He told us that his office has trained them and that they have a good grasp of financial aid issues, such as the Satisfactory Academic Progress requirements for maintaining federal student aid eligibility. The navigators are working with the college's information technology (IT) department so that they receive consistent and accurate reports on issues such as their students' financial aid status and program progress.

While the AACC Pathways colleges are taking different approaches to redesigning their advising to support student progress on a program plan, the solutions they are coming up with share some common design features or objectives. First, colleges are trying to ensure that students have personal contacts early on, so they feel welcomed and valued. Second, most colleges are trying to implement a case management approach, so that every student ideally has one advisor who is overseeing his or her progress throughout the college experience, although in some cases the advisor changes when the student enters a program. Third—and very important for pathways—colleges are trying to ensure that students have contact with faculty members and others in their field of interest to provide guidance and networking support.

Finally, all colleges are trying to build a culture where responsibility for guiding students into and through program paths is shared by all faculty and staff, regardless of whether they have formal roles as advisors. An occupational dean at **Jackson College** said that the new advisors or "navigators" the college has hired will almost certainly improve student advising, especially compared

with the past, when advising resources were minimal. However, he emphasized that even with the additional navigators, responsibility for advising students must be “distributed”—that is, it needs to be shared by faculty and other staff. This theme was echoed in our interviews at other colleges. We also heard repeatedly that, just as program mapping should be a collaborative effort between academics and student services, so too is it critically important for academics and student services to work together to design an advising system to help students navigate pathways.

Colleges are enhancing their information systems so that students and advisors can easily monitor students’ progress toward program completion.

The AACC Pathways colleges’ efforts to improve systems for monitoring students’ progress represent another major departure from conventional practice in community colleges, where neither students nor colleges generally have a clear sense of how far along students are in their programs and what more they need to do to complete them. Most of the AACC Pathways colleges are upgrading and enhancing their information systems to help advisors and students with progress monitoring.

Northeast Wisconsin Technical College is implementing a new academic planning tool that will allow students to see the full sequence of courses on their program maps, including critical program courses. The tool will enable students to carry out career exploration, education planning, and registration from their mobile phones.

At **Jackson College**, all students have a plan that they develop with their student success navigator (advisor) based on the program maps created by faculty and student services staff. Every student’s plan is customized to his or her situation and goals. Maps are created and stored on the college’s enterprise resource planning system using a tool the college’s IT department adapted from the web-based tool Colleague Student Planning. If a student wants to take a full load of 15 credits, the navigator will select five courses in the student’s plan. Once the student and advisor decide which courses the student will take, the list is locked into the system. It is then up to the student to pick the course sections. The student can see the entire plan at any time and how much of it remains to be completed. The student and his or her advisor can also consider “what-if” scenarios to explore different pathway options.

At **Indian River State College**, students have a dashboard on their MyIRSC webpage with a pie chart showing how much progress they have made toward completion of their program. Students we interviewed said they like the pie chart, and that students talk with one another about “How are you coming along with your pie?” Students can also conduct a degree audit to show which courses they need to take to complete their program (or other programs they might be interested in). The webpage includes a picture of their advisor and the advisor’s contact information. The college also implemented My Academic Plan, an online tool that stores templates for all guided pathways program maps and allows for alternative course options to be inserted into students’ customized guided pathway plans. Students can access this information from their mobile devices. The college believes that these tools for visualizing and monitoring progress are helping to motivate students. The college is adding the “My Degree Progress” pie chart to faculty members’ view

of each student's academic profile, so faculty can see which program students are in and how far along they are. Advisors already have this capability.

At the **Community College of Philadelphia**, a task force with representatives from registration, IT, academic scheduling, advising, counseling, and faculty designed a system for implementing student education plans that can be viewed online. Starting in fall 2016, first-time students entering the largest areas of study (enrolling approximately 70 percent of incoming students) work with an advisor to create an education plan based on the program maps created as part of the college's work as part of the Pathways Project. The plan will show students at every point what courses they need to take to complete their programs. Advisors will be able to run reports through the DegreeWorks software program to show when students register for a course that is not on their plan. Once students have created their plans, they will not be able to change them without seeing an advisor.

In fall 2016, the **Community College of Philadelphia** launched an online portal for students called MyCCP, in which they can view their education plan, early alerts about their academic performance, and financial aid information. Behind this student interface, the college uses DegreeWorks to provide a central repository for all student education plans, which enables advisors to check students' progress along their plans and provide appropriate guidance. The college uses Starfish software to allow faculty members and advisors to keep students apprised of their progress within a course by sending them kudos and alerts. Once alerts are opened, they must be closed, thus creating more accountability for advisors and faculty to follow up with each other about actions taken to support students who receive alerts.

St. Petersburg College has implemented software as part of its PeopleSoft system that allows students and advisors to see how far along they are on their pathway plan. Students seeking to transfer can also see which courses they need to take at St. Petersburg College and then at the transfer institution to complete a bachelor's degree. When students try to register for a course that is not on their plan, they get a message warning them to that effect and cautioning that financial aid may not pay for off-plan courses. The college plans to add tools to the system that will prepopulate each student's plan based on his or her pathway or program of interest and indicate how long it should take to finish the program. Students can see in their online portal how close they are to graduation with the "My Graduation Status" degree-audit tool. The college plans to personalize communications with students based on where they are on their pathway and what more they have to complete. The college is developing an advisor dashboard that will enable advisors to see where students are on their pathway and to communicate with them as they complete milestones. The college is also developing analytics and dashboards (using Civitas software and its locally developed business intelligence tool, Pulse BI) to help advisors monitor the progress of students in their caseloads and identify students who are struggling.

Pathways Challenge: Managing Off-Plan Course Registrations

Many colleges are wondering what to do when students try to register for courses that are not on their program plans. **Indian River State College** has been issuing off-plan alerts to students and advisors for almost three years. Initially, the college put a hold on students' registrations when they registered for a course not on their guided pathway program plan. The college found that most of the time the holds were for relatively minor issues that could be easily fixed, and that it was not worth preventing students from registering. Now, instead of issuing a hold, the college sends an alert to the student and his or her advisor. The college does not rely on students to respond, however. The advisor gets a report and will check on the student, following up as appropriate.

Colleges are developing policies to help students “redirect” when their interests change or when they are not likely to be admitted to selective programs.

Some of the AACC Pathways colleges are beginning to grapple with the fact that in nursing and other selective admissions programs, there are usually many more applicants than available spaces. Students will often persist in trying to get into such programs even when they are clearly not meeting the program requirements.

At **Jackson College**, one challenge was to convince faculty in nursing and other limited-access programs that they needed to take steps to ensure that students who are not likely to be admitted are not left to flounder. Administrators wanted to ensure that students who would likely not get into limited-access programs received help to choose a more viable path before they racked up too many credits they could not apply to a degree. Program directors from allied health and nursing said that the attention to pre-nursing students has created an opportunity to expose students to career options in allied health. According to the allied health director, in the past, the perception was that allied health would “get the rejects from the nursing program. . . . Students would come in thinking nursing was the only career option in healthcare. When they did not get into nursing programs, they felt like failures, and those that ended up in allied health felt like they were getting a consolation prize.” The allied health and nursing program chairs at Jackson agreed that creating clearer alternatives to the nursing pathway would help to retain students who come in wanting to study nursing but do not get into the program.

Most colleges are trying to create more predictable schedules and taking other steps to enable students to complete their programs more quickly.

Most of the AACC Pathways colleges are taking steps to create more predictable schedules for students. Several colleges are developing two-year schedules and offering “course guarantees” to ensure that the courses students need will not be cancelled. Several have purchased software to help optimize the scheduling process. Colleges will be best able to use these tools when every student has an up-to-date full-program plan.

A handful of the AACC Pathways colleges are beginning to schedule classes based on students' plans so that students can take the courses they need to complete their degree on schedule. A couple of these colleges are considering ways to preregister students each semester for the next term based on their program plans.

Every student at **Cleveland State Community College** can see his or her full educational plan using DegreeWorks. During our focus groups, students indicated that it was very helpful to see their program plans laid out in full. One college advisor said that he frequently uses the tool to show students who want to take 12 credits that they will not be able to complete their programs in two years; as a result, many of these students change their mind and enroll in 15 credits. The college also recently implemented scheduling software that allows students and advisors to create optimal schedules based on the courses in the student's academic plan, while allowing students to block off times when they have outside obligations. According to college advisors, whereas in the past, they spent a lot of time trying to figure out schedules for students, now they have more time to discuss students' interests and goals.

Since 2014, Cleveland State has led a communications campaign to encourage students to take 15 credits per semester as opposed to 12. This message begins at new student orientation, where the director of academic advising talks about the benefits of taking 15 credits each semester and shows a short video about the "15 to Finish" campaign. Although the college had been stressing the "15 to Finish" message for a couple of years, the message has gained traction since the college incorporated it into new student registration and into training sessions for faculty advisors. The college has seen an increase in the number of credits attempted by new students. In 2012, 29 percent of students attempted at least 30 credits in their first year. This number rose to 39 percent in the 2014–15 academic year, and most recently, in 2015–16, 47 percent of students attempted at least 30 credits in their first year.

Students registering for courses at **Indian River State College** can see what courses will be offered in which term for the entire year (when fall registration opens, they can see what courses will be offered in the spring and summer terms). The availability of the full year's schedule is designed to help students plan beyond the current term. Starting with the "Week of Welcome" for incoming freshmen, the college reinforces identification of students by class (e.g., class of 2018) as well as by class standing (freshman, sophomore, etc.) to increase the sense of community and motivate students to complete on time. The college developed an annual schedule that shows fall, spring, and summer courses, and that rotates which terms less frequently offered courses are offered to help ensure students can take the courses they need to finish their program. Indian River opened fall 2016 registration at the same time as summer 2016 registration to increase the likelihood of year-to-year retention and program progression. **Cuyahoga Community College** has also moved to an annual course schedule and is working to ensure that the schedule reflects the courses students need based on their academic plans.

Ensuring That Students Are Learning

A key goal of pathways reforms is to ensure that students are building essential skills and knowledge across programs, not just in individual courses. In this subsection, we summarize the progress the AACC Pathways colleges are making in measuring and improving learning across programs, and we describe how they are approaching key aspects of this work.

Essential Pathways Learning Practices

Research on effective teaching and learning in college stresses the importance of setting clear learning goals and giving students feedback on their progress toward those goals. Research on the elements of effective teaching in higher education also suggests that providing students with a big-picture understanding of the key topics within a specific course, and how they fit together, helps to improve learning. If students are to achieve meaningful learning outcomes for their programs of study, then they need to develop knowledge and skills systematically and cumulatively over time. If students cobble together a set of disconnected courses to meet degree requirements, it is difficult to see how college programs could help students learn effectively and build skills across the curriculum.

In the pathways model, faculty assess whether students are mastering learning outcomes and building skills as they progress through a program. Program learning outcomes are aligned with the requirements for success in further education and employment in a related field. Faculty use the results of learning outcomes assessments to improve the effectiveness of instruction in their programs. Colleges track mastery of learning outcomes by individual students, and the information is easily accessible to students and faculty. To ensure that students are learning, colleges work to ensure that teaching is effective. A key focus of teaching in the pathways model is attention to collaborative, active learning that is relevant to students' field of interest. This includes teaching and learning in the classroom as well as learning that takes place outside the classroom, such as through internships or service learning.

Progress on Learning in Year 1

Nearly all of the AACC Pathways colleges have advisory boards that advise on field-appropriate learning outcomes for career-technical programs. Fewer involve faculty from universities in reviewing curricula.

Most of the AACC Pathways colleges have established learning outcomes for career programs and for general education, but they are recognizing that they need to revisit these learning outcomes based on the program maps they have created. As we discuss below, a handful of colleges are customizing general education learning outcomes for particular meta-majors.

In many colleges, faculty assess whether students have achieved learning outcomes through capstone projects, internship evaluations, and portfolios, and the results are often used as part of periodic program reviews. Colleges will need to revisit this assessment process in light of their newly developed meta-majors and program maps. No college is yet tracking mastery of learning outcomes or competencies by individual students.

To ensure students are learning across programs, colleges need to ensure that there is effective teaching. While there is experimentation and innovation around teaching at all of the colleges, in general, these efforts are not yet linked to pathways reforms.

Insights on Strengthening Program Learning

Here, we describe how the AACC Pathways colleges are approaching key features of this practice area.

A handful of colleges are considering how to customize general education learning outcomes for meta-majors.

All the AACC Pathways colleges have established general education learning outcomes, but as colleges organize their programs into meta-majors, some are considering how to define learning outcomes for programs in these broad fields.

As Bruce Fraser, an associate dean at **Indian River State College**, told us: “Pathways can’t just be sequences of courses. They have to fit together to create an educationally coherent program. . . . [Therefore] you need program learning outcomes for pathways in particular fields.” Fraser is managing an effort by Indian River faculty work groups to determine whether the college’s general education learning outcomes should be revised or augmented for each of the college’s eight meta-majors. While faculty in the college’s career-technical programs have long defined learning outcomes for their programs, transfer program faculty are new to the idea of defining learning outcomes for their programs that are more field-specific than the typical general education outcomes. Fraser said he and other administrators have emphasized to faculty that they do not have to start from scratch but can customize the existing general education learning outcomes for their meta-majors.

Fraser and his colleagues also pointed out that the college’s education programs already follow the extensive list of competencies that the Florida Department of Education has established for all teacher education programs in the state ([Florida Department of Education, n.d.](#)). According to Marta Cronin, the college’s vice president of academic affairs, general education faculty can relate more to the teacher education standards than they can to the skill standards typical of career-technical programs.

Indian River has also created a learning outcomes communication task force to identify opportunities to increase awareness about learning outcomes among all stakeholders on campus. The efforts focused on students will seek to help them understand the connections between mastering learning outcomes and achieving their career goals.

Once **San Jacinto College** develops program maps for all programs of study (by spring 2017), teams of faculty teaching courses in each “career pathway” meta-major will determine in which courses concepts and skills critical to that field will be introduced and in which courses activities will be embedded to reinforce and encourage students to practice these skills. According to a college planning document, “This sequenced introduction and reinforcement of knowledge and practices will better prepare students for upper-level class work and future career experiences.” In the past, according to college deans, the college built program learning outcomes from course-

level outcomes; now, they are thinking about what the program outcomes should be first, and then planning to revise courses to reflect those outcomes. The college is just beginning to consider how to assess program outcomes. Right now, as one dean shared, they are focusing on clarifying program outcomes “so they aren’t just an amalgamation of our course-level outcomes.”

San Jacinto has already begun to contextualize math course content for its career pathway meta-majors. Members of the college’s math research and development team “deconstructed” their math courses into lists of competencies and surveyed all program leads about which competencies are critical for their fields. They plan to use the results to revise existing courses in the college’s four math pathways (college algebra, statistics, quantitative reasoning, and finite math) to ensure that the courses are aligned with the major program pathways offered by the college. According to college leaders, the math faculty purposefully identified student learning outcomes for department heads rather than giving them a list of courses to avoid preconceived notions about what particular courses cover. The college plans to replicate the process with other critical program courses—defining their content and placing them on maps based on learning outcomes rather than course titles.

Faculty at **St. Petersburg College** are beginning to consider how they might contextualize general education courses for specific career and academic communities. For example, how might humanities be taught differently for students in health care, criminal justice, and information technology? To what extent can faculty tailor students’ classwork and assignments to particular career and academic communities? Applied ethics courses, a general education requirement at St. Petersburg College, have been contextualized for the last few years.

The **Community College of Philadelphia** is also moving in this direction. We expect similar conversations to blossom at other colleges, since efforts to improve student learning are crucial to the overall success of guided pathways reforms: If guided pathways reforms result in better laid-out courses but curriculum and instruction have not also been enriched, then these reforms will not produce the desired benefits for students.

Pathways Challenge: Measuring and Documenting Learning Outcomes Mastery by Individual Students

All of the colleges assess learning outcomes by groups of students, as is required for accreditation. But outside of career-technical programs, where this is sometimes required, no colleges are able to assess and document learning mastery by individual students.

Managing the Change Process

In this section, we describe the strategies that the AACC Pathways colleges are using to manage the change process involved in implementing guided pathways. We discuss these strategies under the three main dimensions of Kotter’s eight-step change leadership process (Kotter International, n.d.): creating a climate for change, engaging and enabling the whole organization, and implementing and sustaining change. The examples reported here are based primarily on our interviews at the six colleges where we conducted fieldwork, since we were able to explore the change process in depth at those institutions.

Creating a Climate for Change

AACC selected colleges to participate in the Pathways Project based not on whether they had begun to implement guided pathways but on their demonstrated commitment and readiness to make the major changes necessary. Here, we describe steps some of the AACC Pathways colleges had taken prior to joining the project to create a climate of openness to change on their campuses.

All of the AACC Pathways colleges had previously taken steps to cultivate cultures of openness to change and innovation.

When we asked colleges to describe guided pathways reforms, a phrase we often heard was “it’s a heavy lift.” Indeed, implementing pathways requires substantial changes to many aspects of a college’s programs, services, business processes, and policies. As the AACC Pathways colleges will attest, it also requires changes in mindsets and organizational culture.

To prepare to undertake such big changes, a college’s stakeholders must become accustomed to experiencing change and contributing to it. Cultivating a culture of openness to change takes time. The colleges selected to participate in the AACC Pathways Project had all been working toward this type of change for several years—and in some cases even longer.

For example, in the early 2000s, Edwin Massey, the president of **Indian River State College**, felt the college was losing touch with its people. An organizational psychologist conducted interviews with more than 240 faculty and staff summarizing their feedback into what became a climate survey about the institution. That survey became the underpinning of a multiyear effort focused on a single idea—that “student success is what matters most” at Indian River State College. This work also resulted in the creation of a college culture that embraced change to remain relevant.

According to Massey, “the cultural shift went from top-down to bottom-up.” Massey said that he sees the role of the executive team as setting the vision and supporting ideas generated by the people working directly with students. According to leaders at the college, it was amazing what happened when “we turned people loose.” Since the early 2000s, Indian River has implemented significant changes, including a major facilities expansion and a series of reforms to its academic programs and student support services, of which guided pathways is the current evolution. As a result, the college has achieved substantial improvements in the number of credentials awarded and in completion rates. According to vice president of enrollment and student services Christina

Hart, the work of cultivating a culture of openness to change is ongoing: “We will never graduate from our culture work.”

Daniel Phelan, who has been president of **Jackson College** for 16 years, believes that the sort of change the college is undertaking with pathways cannot take place without a supportive culture. The college calls its effort to create a culture supportive of student success “TCS-squared”—total commitment to student success. The college has established a set of 13 guiding beliefs related to student success, in addition to its mission and values. The college has redesigned its hiring process to ensure that new hires not only subscribe to those beliefs but also can act in ways that support them. The college awards small merit bonuses for employees who exemplify the 13 beliefs in their work at the college.

Before joining the Pathways Project, all of the colleges had implemented at least one major change in practice at scale (that is, for all students). For example, in 2015, **San Jacinto College** changed the role of its department chairs so that they now serve as full-time instructional leaders for their colleagues rather than as faculty with part-time administrative responsibilities. Aside from a course in the summer, department chairs no longer teach; instead, they focus on program improvement and faculty development. They also conduct frequent classroom observations with faculty and, with every faculty member every semester, review course outcomes data that compare each instructor’s course outcomes with others’ college-wide. The college organizes a three-day dean and chair academy during the summer focused on strategies for assessing and improving instruction.

Leaders at **Front Range Community College** said that the college’s work on guided pathways was helped by a college-wide, multicampus developmental education initiative it had undertaken four years prior, when the Colorado Community College system required that colleges combine English and reading instruction, limit the number of developmental education levels to one, and establish STEM and non-STEM mathematics pathways. As a result of these reforms, the college has found that students are completing college-level English and math sooner. Although implementing guided pathways involves even more comprehensive reform, undertaking these developmental education reforms showed the college that it was possible to change practice at scale across three very different campuses.

Most of the colleges had a strategic plan with clear, measurable goals for improving student outcomes.

In 2010, under the leadership of Andy Dorsey, who had become president the year before, **Front Range Community College** developed its first strategic plan in years. Under that plan, the college hired more full-time faculty and worked to improve its assessment of student learning outcomes. The college also supported student success activities on each of its three campuses, but according to those we interviewed, these reforms were generally not implemented at scale on any campus or shared across the campuses.

In 2014, Dorsey initiated an effort to implement student success reforms college-wide. He convened a task force to look at best practices in student success nationally and make recommendations for the college. He asked that the task force use the Completion by Design “Loss/Momentum Framework” ([Completion by Design, n.d.](#)), which he considered a good framework for examining

the phases of students' involvement with the college. Members of the task force visited a dozen colleges to find out what they were doing to improve student success. We heard from interviews with several task force members that these study tours were the most powerful professional development experiences of their careers. According to one college leader, "Every time we've made a huge leap, it is because we have gone to other campuses."

The task force published a report recommending improvements in five areas: clearer program maps, on-time registration, mandatory orientation, a student success course (first-year experience), and proactive student support. The task force maintained that improving student outcomes would require not only changes in practice but also a supportive organizational culture. The college adopted a new strategic plan, which included goals related to each of the five recommendations. According to college leaders, when AACC put out an invitation for the Pathways Project, it seemed that participation could help focus and energize the work proposed by the task force. College leaders said they see the Pathways Project as a means of aligning and supporting the various strands of student success work at the college.

Pathways colleges had laid the groundwork for change by building their capacity to analyze, report, and use data.

When **San Jacinto College** initially got involved with Achieving the Dream in 2006, the college had limited capacity to use data to understand student outcomes. San Jacinto's board members attended the University of Texas at Austin's Board of Trustees Institute, where they were exposed to student success data, and came back to San Jacinto asking for more data. Having the board ask for student outcomes data and support the college as it built its capacity to fulfill those requests helped move the college toward a more data-informed culture. When San Jacinto hired a research director in 2007, the college did not warehouse student data and could not measure student success against historical baselines. Since then, the research director has worked with the college's leadership and board to build institutional research capacity and to use data to promote reflection and discussion about student success throughout the college. Now, in addition to regularly reporting and presenting on student outcomes data to departments and at college-wide meetings, institutional research staff sit on the committees that are planning and implementing the pathways reform in order to supply data and evidence to support decision making.

Twenty-one of the 30 AACC Pathways colleges have participated in Achieving the Dream. Several of these colleges said that the experience helped them lay the groundwork for taking on pathways in several ways, including building their capacity to collect, analyze, and use data for improvement.

Engaging and Enabling the Whole Organization

Research on organizational improvement emphasizes the importance of engaging stakeholders from all parts of the organization, so that staff throughout the college take ownership of major changes and actively participate in them.

Pathways colleges are using data to create a sense of urgency.

Leaders at all of the AACC Pathways colleges have sought to raise awareness and urgency regarding the need for more clearly defined program pathways and integrated supports. Data on the student experience have been particularly effective for this purpose, as have exercises to help faculty and staff see the college experience from the student perspective.

Since starting with the AACC Pathways Project, leaders at **San Jacinto College** have sought to engage everyone at the college (including classified staff) in thinking about barriers to student success and how to eliminate them. In spring 2016, at San Jacinto's "College Community Day," college leaders presented data on how the college loses over 8,000 students per year. (Leaders helped employees visualize this figure by equating it to the population of a small Texas town.) Faculty members who had attended the first AACC Pathways Institute in February 2016 stood up and gave testimonials. College leaders bought copies of *Redesigning America's Community Colleges* (Bailey et al., 2015) for every faculty member, staff member, and administrator. Over 600 voluntarily participated in book discussions led by trained facilitators. More recently, they presented to the faculty leaders and department chairs the results of an exercise AACC required as preparation for its Pathways Institute on mapping pathways, in which colleges produced reports showing their enrollments by program and the number of credits taken by their associate degree graduates ([American Association of Community Colleges, n.d.a](#)). According to college leaders, faculty were surprised at how many students were not in clearly defined programs (and how few students were in some career programs). Many were shocked at the average number of credits students who had earned degrees had accumulated. (We heard similar reactions from other colleges.) Throughout this process, college leaders have tried to communicate the message that "no student should fail because of a barrier the college created or overlooked."

During spring 2016, the **Front Range Community College** pathways cochairs made more than 40 presentations to campus groups to build a sense of urgency to address low completion rates. Part of their presentation highlighted the fact that of 100 students who enter the college, after three years, 44 leave without a credential and do not transfer to another institution. Even after six years, fewer than 50 graduate or transfer. Faculty and others were struck by the data presented on the number of students who leave the college in good academic standing (having earned good grades and a substantial number of credits) without earning a credential.

Leaders at **Jackson College** looked at their data and saw that students were not being well advised—too many were meandering through courses, accumulating credits and debt without completing a program. This finding started a discussion about how to get rid of the undeclared major, since so many students who were not clearly in a program area did not complete a credential.

In addition, nursing and allied health faculty formed a working group to address data showing that many aspiring nursing students did not have the grades to be admitted into the nursing program but nevertheless kept trying to gain admission, accumulating credits without earning a degree.

College leaders are seeking to communicate a compelling vision for the pathways work on their campuses.

To oversee its work on pathways, **San Jacinto College** established a Pathways Leadership Council, which includes leaders from across the college. According to council members, their first few meetings were long and difficult because they were developing a vision and guiding principles for the work. A key focus of the vision they established is to remove barriers to student success created by the college. According to college leaders, this focus has helped to increase awareness and problem solving around places where students are “sticking.”

Borrowing a theme from one of the AACC Pathways Institutes, leaders at **Front Range Community College** have been asserting that the college needs to adopt the mindset of “working to make the college student-ready, as opposed to assuming that students are college-ready.” To reinforce the idea that pathways is not another flavor-of-the-month initiative, college leaders are saying that “we are becoming a pathways college,” emphasizing that pathways is a strategy for aligning innovations the college has been working on around the central goal of helping students choose, enter, and complete programs that enable them to achieve their goals for careers and further education.

Leaders at other colleges have also been emphasizing that the pathways model builds on and helps to integrate existing reforms that their institutions have been working on in a piecemeal fashion. Rebekah Woods, provost at **Jackson College**, said: “Pathways is the skeleton on which you hang the various components of student success.”

Pathways Challenge: The Proliferation of “Pathways” Reforms

We heard from at least one college that there are many initiatives called “pathways”—such as high school pathways, career-technical education pathways, and transfer pathways. One challenge for pathways leaders is to communicate how “guided pathways” is different.

Pathways colleges are taking steps to address the fear and anxiety that inevitably come with big changes generally, and with pathways specifically.

According to leaders at several colleges, because pathways reforms involve major changes to practice, and because they are still relatively new in community colleges and in higher education more generally, a persistent concern among faculty and staff is “what does this mean for me and my job?” **Indian River State College’s** vice president of enrollment and student services, Christina Hart, said: “If you are trying to make change, the biggest barrier is people’s concerns and fears about how it will affect them personally and professionally. So you want to know, ‘what is the heartburn that people carry around them?’ . . . You want to get that out. . . . [The way to do that is to] [g]et folks around the table. Let them voice their concerns. . . . Let them know someone cares.”

We heard from several colleges that some faculty in programs such as music, which survive primarily on elective courses taken by students in other majors, are concerned that they may lose enrollment and face being closed. Other concerns about guided pathways that were voiced during our interviews include:

- What is going to get cut as a result of these pathways reforms?
- How will these changes be rolled out, and how will they affect my workload?
- Are these changes happening too fast?
- How are we going to accomplish this reform work on top of everything else we have to do?
- Is this reform going to fizzle out like some other reforms we have tried on campus?

At **San Jacinto College**, leaders indicated that it is important to communicate that the work on pathways is exploratory, and that “we’re figuring this out as we go.” When the college’s math research and development team created a new curriculum for non-algebra math, the college developed a binder with resources to help faculty learn to teach the course. The message from the chair was, “Don’t worry—it will be a first draft.” The college established its Pathways Leadership Council as a standing committee to send the message that the focus on pathways will persist.

The Pathways Project coleads at **Front Range Community College** said that they pay careful attention to the concerns they encounter and are careful to consider when they do get pushback why it is happening, asking, “Is it because we haven’t communicated about particular issues with particular segments of the campus, because people’s jobs are starting to change, or because we have not thought through our initiatives completely?” Some faculty were concerned that the college’s program mapping efforts were too prescriptive. Others feared that courses that were not part of program maps would lose enrollment, and thus faculty jobs would be threatened. In October 2016, the college held a special session on academic maps at its all-college meeting. The session was attended by over 100 faculty members. During the meeting, Andy Dorsey, the college’s president, addressed numerous questions about program maps. He asked the faculty to provide students with as much guidance as possible on what electives to take, but gave them flexibility when they could not easily recommend specific electives. One person who attended the meeting said, “The college heard the president say, ‘We’re in this, but I’m with you. I know there will be bumps along the way, but that is okay.’ This was a strong signal that the president would support the reforms and expected that there would be challenges along the way.”

In addressing faculty members’ concerns that their courses would be eliminated, leaders at **Jackson College** have tried to reframe the conversation, arguing that what matters is not courses but learning outcomes—and that learning outcomes can be taught in many different ways and in different courses. College leaders also believe that faculty tend to be concerned less about courses per se and more about their course loads, so there has been an effort to ensure that faculty will be able to maintain full course loads.

The AACC Pathways colleges are engaging all parts of the college in the pathways work—not just academic and student services staff, but also registrar, IT, finance, financial aid, human resources, and other functions.

While faculty in all of the AACC Pathways colleges are playing a lead role in developing program maps, we heard from multiple colleges that it is essential that maps also reflect the perspectives of student services staff. In trying to fill out the program mapping template provided by AACC (see [American Association of Community Colleges, n.d.b](#)), one college first gave it to faculty to fill out, but found that faculty often do not have a big-picture view of programs and may lack knowledge on issues such as prerequisites for programs other than their own and transfer requirements. As a result, the college asked its professional advisors to create first drafts of the maps and then gave them to faculty to review.

At **Indian River State College**, faculty and professional advisors said that the work of refining program maps, including identifying critical courses and progress milestones and agreeing on appropriate messages for students at each point, has greatly improved their communication with each other and has helped build a sense of mutual understanding and respect. After the implementation of guided pathways, the relationship between faculty and advisors has strengthened to such an extent that the college’s director of advising, Dale Hayes, who was once an academic department chair, remarked, “There was an us-versus-them mentality between faculty and advising previously, but in the development of guided pathways, it’s been more collaborative. Faculty see value in advising. Advisors have a clearer communication path to faculty. There’s now a different atmosphere, when student need is placed first.” A faculty member at the college indicated that this sentiment is mutual, commenting: “Guided pathways is much more on advising than on faculty. . . . They’re on the front line. The [college’s retention management] software has made communication between faculty and counselors much easier, where they can track students using two avenues of attack from faculty and advising.”

The mapping process at **St. Petersburg College** has been highly inclusive, involving faculty and student services as well as deans and other staff members. The college believes that each group brings unique perspectives to the mapping process, all of which are critical to improving student progression and success. A PowerPoint developed by the college to describe its mapping process (Crawford, 2016) outlines the knowledge and perspectives that colleagues in different roles bring to the mapping work:

- **Program administrators:** Accreditation, state requirements, institutional requirements, student success rates across sections/campuses.
- **Program faculty:** Industry requirements, student success rates by course, writing and math requirements, opportunities for field experience.
- **Advisors:** Gateway courses, student feedback on experience, general education requirements.
- **General education faculty/deans:** General education courses appropriate for particular programs.

Members of **San Jacinto College's** Pathways Leadership Council said they have had to work with colleagues from both the academic side and the business side of the college to plan and implement pathways reforms. Faculty and student services staff on the council said they have learned a lot about how the college works from an operational standpoint through these interactions. They have also discovered talent at the college that has proved invaluable to their pathways work, such as a human resources staff member who had experience in industry with change management projects and who could advise on that aspect of the reform.

Leaders at the **Community College of Philadelphia** involved the college's IT department early in the process. To aid communication, the chief information officer made a one-page information sheet for system developers about pathways. She believes that the developers need to understand practicalities, such as that when a student steps off his or her plan, an alert goes off, and what that means, and why they are building these alerts.

Because implementing pathways involves redesigning practices across the college, including not only academics and student affairs but also business office functions, the various planning and implementation groups need to reflect the cross-disciplinary nature of the work. This is especially challenging for multicampus institutions.

A few years back, **San Jacinto Community College** shifted from a campus focus to college-wide operating model. One key step in accomplishing this was assigning campus provosts to lead work on the college's three campuses, instead of having campus presidents. The campus provosts all report to the deputy chancellor; this reporting structure has helped to promote greater consistency in culture and practice across the campuses.

In contrast, at **Front Range Community College**, while there are some college-wide functions, such as IT and the registrar, each of the college's three campuses has its own academic and student affairs leadership. To some extent, each campus also has its own culture and identity. Because of these differences across campuses, leaders at Front Range Community College have taken a grass-roots, collaborative approach to implementing pathways reforms. They believe that this approach has helped to build a large base of individuals across the college who understand the purpose of the reforms. The trade-off of this bottom-up approach (as college leaders acknowledged) is that the work may sometimes seem uncoordinated. It also takes longer for decisions to be made, and thus extends the time before implementation can begin. College leaders at Front Range believe that this is a necessary trade-off. As Andy Dorsey, the president, said: "Sometimes you have to go slow to go fast. . . . You have to stop and let people speak their mind, and listen, before you can move forward."

Front Range has been purposeful in expanding involvement in pathways work beyond academics and student services. For example, in the fall of 2016, an all-college meeting engaged all employees, including adjunct faculty and those in support functions, in discussion about pathways and making the college "student-ready." All employees are invited periodically to hear from nationally recognized experts on student success. The college has also engaged key individuals outside of academics and student affairs in pathways leadership. The registrar serves as cochair of a college-wide student success subcommittee, and financial aid and fiscal staff serve on other subcommittees. Leaders of several such committees and subcommittees were selected strategically to widen the base of employee engagement.

Implementing and Sustaining Change

Here, we describe how the AACC Pathways colleges are beginning to implement their plans for guided pathways and take steps to sustain the changes over time.

Pathways colleges are finding it helpful to establish clear parameters for pathways work groups—requiring them to produce implementation plans with clear objectives, activities, roles, and timelines.

Leaders at **Front Range Community College** acknowledged that they could have provided clearer guidelines and reporting timelines up front for their guided pathways work groups. On the one hand, they wanted to give the work groups scope to explore and be creative. On the other hand, some of the groups developed ideas before considering their budget implications or the practicalities of how they would be implemented. For example, the group charged with designing a new student success course initially focused on the design of the course and later recognized the logistics of the course were challenging. A new work group needed to be established to consider the logistics, such as how many credits the course would carry, how to make sure there were enough course sections offered, and how to ensure that the course was eligible for financial aid. The college's leadership has since helped all work groups establish clear project goals, and the teams regularly present to the college's cabinet on their progress.

Pathways colleges are investing in professional development that directly supports pathways implementation.

Even in colleges that have developed cultures conducive to change and innovation, change is hard, and pathways reforms involve big changes. Faculty and other staff sometimes feel threatened by pathways reforms, and even if they agree with the concept of pathways in theory, the work of mapping programs and redesigning student supports is novel to many. It is critical, therefore, that college leaders support faculty and staff involved in this work with training and professional development to help them do it effectively.

While **Jackson College** has been conscientious about communicating about pathways broadly within the college, according to college leaders, nothing engenders understanding and ownership more effectively than actively engaging stakeholders in the work. The college's Pathways Steering Committee includes over 50 faculty members, staff members, and administrators from various departments across the college. To ensure that faculty and staff doing the work are supported, the college provides extensive professional development. In March 2016, the college hired Kate Thirolf as director of instructional innovation. Her job is to help provide professional development and support to faculty who are involved in guided pathways and other reforms the college is undertaking. A key focus in the college's pathways work has been getting faculty and student services staff connected and engaged in the work together. **Jackson College's** Pathways Steering Committee meetings are designed to foster cross-divisional discussion. The college's Faculty Learning Days and Adjunct Learning Days (which occur before the fall and winter semesters) always include updates and discussion about guided pathways. Recent topics have included an overview of the student planning and advising tool that student services staff now use to monitor students' progress on their plans. In addition, student services staff have visited faculty depart-

ment meetings, and faculty have connected with their student services colleagues when building program maps and reviewing programs.

College leaders need to provide faculty and staff with the time and space to conduct the planning, progress monitoring, and improvement of pathways reforms. **San Jacinto Community College** has established “Framework Fridays” every week, where few classes are offered and student services staff are freed up in the afternoon, so that the entire faculty and staff can focus on planning, learning, and professional development to support the implementation of pathways and related college-wide reforms. College leaders set aside this day every week because they found that, in the words of the college’s president, “otherwise folks are too busy to focus.”

Faculty and staff engaged in pathways work also need training in change management and implementation. Leaders at **Front Range Community College** have established a structure for planning and implementing pathways that encourages cross-functional collaboration and bottom-up thinking. At the same time, college leaders have learned that they need to invest in training and professional development for individuals whom they have chosen to lead—or, more accurately, colead—the teams planning and overseeing the reform work. For team coleads, managing the difficult conversations and tensions that necessarily arise in this work is not easy. They must learn to manage people’s concerns about change. They need to be cognizant of the importance of communicating with and supporting team members and college stakeholders before, during, and after changes. The college is aware of the importance of change management; its leaders have reviewed John Kotter’s work on issues that can arise during change initiatives at cabinet meetings and with deans and implementation team leads. Still, the college recognizes that it needs to offer further training and professional development on change management to staff who are directly managing key work groups.

Pathways colleges are recognizing that pathways reforms play out over several years; colleges need to be flexible and shift gears if things do not go according to plan.

Mapping programs, redesigning advising to support students’ progression along their paths, defining learning outcomes for particular program areas—all of these efforts take a substantial amount of time. Administrators are under pressure from boards, accreditation agencies, and others to make changes that lead to improved student outcomes. But leaders at multiple colleges emphasized that pathways work should not be rushed because it reflects a new way of doing things for faculty and staff. According to a dean at one college: “You have to have an administration [here at the college] that understands this is a deep cultural shift. You cannot just do this as an architectural or structural change because faculty will push back. This is a tectonic shift in higher education. They [faculty] are not trained for this shift, and it is a painful transition. You have to work at a pace that allows this to happen organically.” At **Jackson College** one leader told us: “Pathways is something you become. It is not linear. . . . There are meetings where we move forward, and others where I feel like we’ve gone back a couple steps.”

Pathways colleges are taking steps to ensure that initial communication and engagement efforts are sustained.

At more than one college we visited, college leaders communicated broadly within their institutions about the need for change, the larger vision for pathways, and how pathways would build on and help to integrate reforms their college was already undertaking. However, over time, communication lagged. It is difficult to do once the initial fervor for the reform subsides, but communication and engagement around pathways must be ongoing.

Cleveland State Community College started off with a concerted effort to communicate about its pathways reforms, with presentations at faculty in-service meetings and discussions at department meetings and monthly faculty meetings. But at one point, leaders of the college's pathways reforms admitted that the press of other matters caused them at times to neglect communicating about pathways. Even though Cleveland State is a relatively small college with a collegial culture (75 percent of faculty are full-time), rumors about what was happening with pathways started to spread, and pathways leaders had to reinitiate communications efforts. Robert Brandon, dean of humanities and social sciences at the college, said that having one faculty member from each division on the steering groups is not enough; it is necessary to provide ongoing outreach to the departments. He argued that open dialogue is key—that communication needs to involve give and take; it is not just about sharing information, but also about listening. As a faculty member at another college said, “When people aren’t talking to you, you think the worst. . . . Not just that you haven’t been included.” Faculty members at this college indicated that they feel there is much they could bring to the reform process that is being overlooked. They said that efforts to engage the faculty more broadly would be helped by appealing to their commitment to social justice and to supporting students’ upward mobility.

Pathways colleges are reallocating existing resources and budgeting for new costs that will be incurred implementing pathways.

AACC Pathways college leaders said that some of the costs involved in implementing pathways can be covered by reallocating existing resources. For example, colleges are incorporating the updating of program maps into existing program review processes. They are reassigning developmental instructors to teach corequisite courses and in some cases to teach college-level math and English courses. They are assigning the coordination of ongoing pathways reforms to new or rechartered standing student success committees. They are focusing recruitment and marketing more strategically than they did in the past, highlighting college programs and their associated job and further education outcomes rather than just emphasizing the college as a welcoming place to attend. They are exploring how they can schedule classes more efficiently to maximize the number of courses students can take on their academic plans in contiguous time blocks (thus increasing capacity utilization). And they are cultivating a culture where everyone—not just faculty and student services staff—sees it as their responsibility to help students develop clear goals for college and careers and to guide them into and through programs that will enable them to realize their aspirations.

Planning and managing pathways reforms requires some modest additional resources. This includes funding to provide:

- faculty and staff time to review and redesign programs, instruction, and support services;
- training and professional development on key topics, such as advising and using student information systems; and
- administration and support to coordinate, communicate, and engage college stakeholders in the reform process.

While a more precise accounting is still needed, our discussions with leaders at the AACC Pathways colleges indicate that other changes may also require more substantial additional resources. The two biggest new costs pathways colleges report they are confronting are in:

1. hiring additional advisors both to help students choose a path and to monitor and support their progress through to completion; and
2. upgrading student information systems and websites to improve program information, student progress tracking, and analytics.

Covering these costs in an era of declining state support and changing demographics and demand for higher education is challenging.

Andy Dorsey, the president at **Front Range Community College**, said that in fall 2016, about a year into planning for the college's pathways reforms, the college had spent between \$100,000 and \$150,000, mainly on 20 course reassignments for implementation team leaders and members (at around \$3,000 each) and on convening and other coordination costs. The real costs will come, he said, when the college changes its advising model, which will require hiring new advisors and making some targeted investments in faculty members who will mentor students in their disciplines. The college also may need to add staff positions for orientation, embedded classroom support, and the registrar's office. Since 2015, when the college adopted its latest strategic plan based on the recommendations of a task force that called for pathways reforms, the president and his finance team have been reserving money in the budget to cover these expected costs. Other strategic decisions have been made: The college has closed some positions that are no longer relevant and has postponed hiring for some open positions until the new advising model is clear. According to Dorsey, shoring up money for pathways has required "very careful husbandry of resources." In summer 2016, there was a point when enrollment was down 12 percent from the previous year. The college stepped up recruitment, and it got enrollment back up to parity with the previous year. Had enrollment stayed down, Dorsey indicated that the college may not have been able to hire new advisors and make other investments needed to implement pathways. Because enrollment steadied, however, the college has been able to move ahead with its planned advising changes and other investments aimed at improving student success. Carrying out reform as ambitious as guided pathways in a time of scarce resources is a very precarious business.

San Jacinto College leaders said they have "reallocated and repurposed" to free up staff and resources for pathways. They acknowledge that there will be additional costs, particularly in hiring more advisors and upgrading the college's enterprise resource planning system and website. But college leaders believe that these investments are necessary to achieve the goals in the college's strategic plan, so they are committed to finding ways to fund them. College leaders acknowledge that some of the changes they are putting in place might cost the college revenue. For example,

instituting math pathways and acceleration techniques means that students are moving more quickly into college-level courses and taking fewer developmental education courses. This is good for students, but it means fewer contact hours in developmental education—although the college hopes this will translate into increased college-level course enrollments.

Daniel Phelan, president of **Jackson College**, convinced the college's board to raise tuition by 8 percent over two years to support the hiring of 12 new “student success navigators”—to bring the college's total number of advisors up to 18. Phelan and other AACC Pathways college leaders are calculating how much their colleges need to increase full-time equivalent enrollment (FTE, i.e., retention) to generate the revenue (through increased tuition, state apportionment, and performance funding) to cover the additional costs involved in pathways reforms.

Key Next Frontier for Pathways: Increasing Student Success in Program Gateway Courses

Progress to Date in Rethinking Approaches to Student Success

As we have described throughout this report, the AACC Pathways colleges are rethinking conventional community college practice in fundamental ways.

From Scaling Interventions to Redesigning Programs and Supports at Scale

Instead of scaling discrete programmatic interventions, the colleges are redesigning programs and support services at scale, following research-based design principles to better help students explore, enter, and complete programs of study that will prepare them for further education and career advancement.

From “Cafeteria” Courses to Program Pathways

Rather than building programs by aggregating courses, colleges are starting with the end in mind—with target jobs and further education in broad, career-focused meta-majors—and backward mapping programs so that students who complete them will be prepared to advance both in the labor market and to further education. This mapping is helping to break down barriers between career-technical and academic transfer programs, as faculty and student services staff work across traditional divisions to ensure that students seeking to transfer also have essential skills and knowledge for jobs in their field, and that students seeking to develop job-related skills can also go on to earn degrees, which are increasingly necessary for advancement in the labor market. In the process, colleges are creating more coherent programs of study that will enable students to build skills across programs, not just within individual courses that may or may not be connected with one another.

From Full-Time Versus Part-Time to On-Plan Versus Off-Plan

Guided pathways are starting to change colleges’ mindsets about enrollment intensity, program planning, and course scheduling. Under pathways, every student develops a full-program plan. As mentioned, most of the AACC Pathways colleges are reorganizing their intake processes to help every new student develop a full-program plan by the end of the first semester. Students may change their plans as they progress, although they must see an advisor to do so. The advantage of having full-program plans is that at every point, students, advisors, and program administrators can see what courses students need to take in a given term and what more they need to take to complete their program.

Thus, rather than distinguishing between full- and part-time students, colleges are starting to focus on whether students are on track to finish their degree in the time frame indicated in their plan. Colleges can use this information, together with scheduling software, to maximize the number of courses on each student’s plan that he or she can take in a given semester, and make course planning more predictable across semesters. Students who take higher course loads will be able to finish more quickly than those who take fewer credits. (This will benefit colleges by increasing FTE enrollment and associated revenue.) Colleges can also advise students on other strategies for shortening their time to completion, including taking advantage of summer or intersession courses. And students and their advisors can more readily conduct “what-if” analyses to examine the implications of changes in their plans.

From General Education Learning Outcomes to Meta-major Learning Outcomes

A handful of colleges that are further along in mapping program pathways are beginning to consider how to define learning outcomes for meta-majors. They are exploring how to customize general education learning outcomes for particular fields—and what additional essential skills and knowledge students should master for each field. This work should ideally lead to discussions about how best to teach students to master field-specific program learning outcomes. The pathways reforms at most of the AACC Pathways colleges have yet to influence teaching in the classroom. This is one important next frontier for pathways colleges to address.

Further Rethinking How to Help Students Succeed in Program Gateway Courses

Based on our observations of the AACC Pathways colleges and others across the country that are implementing guided pathways reforms, as well as on research CCRC and others have conducted since we published *Redesigning America’s Community Colleges* (Bailey et al., 2015), we think that a critical next frontier for colleges will be to connect their developmental education reforms to their pathways efforts to better enable more students who arrive underprepared to pass critical program gateway courses and get on a program path as efficiently as possible.

In their first pass at mapping out their programs, many if not most of the AACC Pathways colleges developed maps for students deemed college-ready. Of course, most of the students served by these and other community colleges are not well prepared for college, so colleges are coming to the realization that the program maps they have created are for students who, if they are not quite the “mythical college-ready student” referred to at one college, nevertheless comprise a small segment of their student body.

If colleges are to enable *the majority* of their students to enter a college-level program of study as quickly as possible—ideally in the first year—the conventional approaches to placement and remediation will not suffice. If students are to get a taste of a field of interest in their first term, then they cannot have a first-term schedule consisting of three developmental courses and a college success course. If students are to pass not only college math and English but also foundational gateway

courses in their field of interest in their first year, then it will not be feasible for them to have to take a two- or three-term developmental sequence before they can even take a college-level math or English course, let alone critical courses in a meta-major.

Virtually all of the AACC Pathways colleges, like many others across the country, are experimenting with new approaches to developmental education and assessment. Most report that they are getting very good results with students in pilots of these approaches. Yet few of the AACC Pathways colleges (and few community colleges across the country) have implemented these reforms at scale. Even within the AACC Pathways colleges, with notable exceptions, most still rely primarily on standardized tests for placing entering students into prerequisite remedial sequences, which in some cases have been shortened, but which still prevent students from entering college-level courses right away.

For colleges to implement promising practices in assessment and developmental education at scale (that is, for all degree-seeking students) and to connect those efforts with pathways reforms, it will require further changes in colleges' mindsets about how they help their students succeed in college-level courses. More specifically, it will require colleges to think differently in the following ways, as some of the AACC Pathways colleges are beginning to do.

From Separating College-Ready and Not-College-Ready Students to Assuming That Virtually All Entering Students Need to Develop Skills and Habits to Succeed in College

Community colleges have long used standardized tests to determine whether students are ready for college-level work, and to place students deemed not college-ready into developmental courses. Research by CCRC and others has led colleges to explore using additional measures, including high school GPA, to determine whether students are ready for college-level courses (Scott-Clayton, Crosta, & Belfield, 2014). Yet many students deemed college-ready on entry or who successfully complete developmental education still struggle in college-level courses (Bailey, Jeong, & Cho, 2010). Moreover, it is becoming clear that even students who appear to be ready for college based on test scores and grades may have nonacademic issues, such as poor organizational skills, weak self-confidence or motivation, and lack of a clear plan, that may stymie them in college (Nagaoka et al., 2013). College has different expectations and norms than high school, so even students who performed well in high school may need help acclimating to the culture of college (Karp & Bork, 2014).

Thus, rather than assume that some students are college-ready while others are not, colleges should assume that the vast majority of students need assistance acclimating to college. Rather than use assessments primarily as a means to distinguish students who are college-ready from those who are not, colleges are beginning to use entry assessments as a tool for diagnosing what supports students need to succeed in college. Some of the AACC Pathways colleges, such as **Broward College, Indian River State College, Irvine Valley College, Linn-Benton Community College, and St. Petersburg College**, are exploring the use of multiple measures, including high school grades, in placement decisions. Other AACC Pathways colleges, including **Broward College, Northeast Wisconsin Technical College, and Skagit Valley College**, are going further and incorporating noncognitive assessments into their orientation and intake processes.

While some standardized tests are designed to diagnose areas where students are weak academically, diagnostic testing may be especially effective when it is done by faculty looking at students' work in the classroom. English faculty at **Cuyahoga Community College** spend the first two weeks of class examining writing assignments from students, after which they recommend that students be placed into college-level or developmental writing. Other colleges are referring students without severe deficiencies to tutoring or other academic supports as a required component of their college-level courses. For instance, **Indian River State College** faculty in key gateway courses, such as Biology 101 and Chemistry 101, are giving students diagnostic tests in the first week and then recommending tutoring to them based on the results. This approach could be done on a large scale without substantial added costs, as research shows that frequent low-stakes testing leads to improved learning by college students and therefore should be standard practice for faculty (Lahey, 2014).

From Prerequisite Remediation to Corequisite, Contextualized Academic Support

A growing body of evidence indicates that for many students, providing just-in-time, contextualized academic support in concert with college-level coursework is more effective than trying to remediate deficiencies through prerequisite instruction that attempts to re-cover what students were supposed to have learned in high school (Jaggars, Edgecombe, & Stacey, 2014). Almost every AACC Pathways college has been experimenting with approaches to accelerating academically underprepared students into college-level programs. Most report good results, especially with approaches that integrate academic support into college-level courses. Yet most colleges have not yet implemented these practices at scale.

Earlier in the report (in the subsection on helping students get on a path; see p. 24), we described the impressive outcomes that **Cleveland State Community College** (along with other Tennessee community colleges) is achieving by integrating academic support into college-level math and English courses through corequisite remediation and by tying math pathways to meta-majors that students choose on entry. A couple of other AACC Pathways colleges—including **Stanly Community College** and **Wallace State Community College**—have similarly connected developmental education innovations to their pathways reforms. Most of the others seem poised to follow but need to move beyond the conventional focus on prerequisite remediation and standardized placement tests.

From Reliance on Standardized Tests to Involving Faculty More Centrally in Identifying At-Risk Students and Diagnosing Support Needs

We are not suggesting that all students can succeed in college-level coursework right away, even with contextualized corequisite supports. However, the evidence strongly suggests that students who arrive with weak academic skills are not well served by the conventional approach to assessment and remediation. Only a fraction of students who start multiple levels below the college level in developmental education ever take and pass college-level math or English; hardly any earn a degree (Bailey et al., 2010). Plus, some students placed into low-level developmental courses who skip these courses are nevertheless able to pass college-level courses.

Rather than rely primarily on standardized tests to identify students with weak academic skills, colleges should explore ways to involve faculty more in helping make placement decisions. Students whom, after faculty have seen their work, faculty judge to have such weak skills that they are not capable of college-level work (for example, students who do not know their times tables or who cannot write a coherent paragraph) might be required to meet with the faculty member and their advisor to discuss getting intensive support before they start attempting college-level courses and using up financial aid. Similarly, students who do not show up for class or who do not complete their assignments in the first couple of weeks could also be required to meet with an advisor to decide whether they are ready to commit themselves to putting in the necessary effort at school. They might be better off returning when they are ready to apply themselves. Right now, colleges are generally not proactive in identifying either of these types of student—to the detriment of students and of colleges themselves, which are penalized when such students drop out or default on their loans.

Most of the AACC Pathways colleges are trying various approaches to helping students who are severely underprepared to succeed in college-level coursework. **Cleveland State Community College** offers “bridge programs” in the summer to help bring students with very weak skills up to speed by the time they start in the fall. The **Alamo Colleges, Broward College, Cuyahoga Community College, Monroe Community College, Mt. San Antonio College, Tallahassee Community College, and Wallace State Community College** also offer short bridge programs designed to help students become college-ready before the start of classes, but few of these efforts are being implemented with large numbers of students. Ongoing research on promising models such as the City University of New York’s CUNY Start program suggests that any solutions are not going to be easy or inexpensive.⁷

From Focusing on Math and English Gateway Courses to Integrated Support in All Program Gateway Courses

CCRC research indicates that other college-level courses—such as Biology 101, Accounting 101, Anatomy and Physiology, Psychology 101, and American Civilization—pose just as great barriers to degree completion as do math and English (Zeidenberg et al., 2012). Yet colleges focus almost all of their remedial instruction and much of their academic support on the latter two subject areas. Some of the AACC Pathways colleges have begun to strengthen instruction and academic support for students in other critical program courses. Faculty from **Cleveland State Community College** have been working to redesign critical gateway courses for their meta-majors, incorporating supplemental instruction and other strategies to help ensure success for the many students who enroll in such courses without strong preparation. The **Community College of Philadelphia** refers students to a learning lab, where they can receive academic support from peer tutors and specialists for gateway courses in many departments, ranging from science to automotive technology. Similarly, **Stanly Community College** directs students to its academic support center, which offers tutoring for all courses and coaches who can provide in-class support to students. Once colleges identify critical courses for each of their meta-majors as part of the pathways mapping process, the next step is to ensure that such courses have adequate academic support integrated into them.

The Next Frontier in CCRC's Research on the AACC Pathways Colleges

It is an honor to be able to observe the extraordinary work of the AACC Pathways colleges as they seek to redesign the community college experience to strengthen student success. We look forward to learning further from them as their work progresses. We plan on conducting follow-up visits to the colleges in fall 2017. We will continue to administer the guided pathways scale of adoption assessment ([Community College Research Center, 2016](#)), and we will collect data on key performance indicators once a year for the next four years. CCRC will produce another report based on our further work in summer 2018. We will also continue to develop guidance materials and tools for practitioners seeking to create clearer paths to success for their students.

Endnotes

1. See [American Association of Community Colleges \(n.d.c\)](#) for an overview of the project and a list of the 30 participating colleges.
2. For a brief overview of the AACC/CCRC guided pathways model and its origins, see [American Association of Community Colleges \(n.d.d\)](#).
3. For these interviews, we used protocols based on two frameworks: one developed by CCRC and reflected in CCRC's "Guided Pathways Essential Practices: Scale of Adoption Assessment" ([Community College Research Center, 2016](#)) and another based on Kotter's eight-step change leadership process ([Kotter International, n.d.](#)). Copies are available on request.
4. For more details on the guided pathways model, see Bailey, Jaggars, and Jenkins (2015a, 2015b).
5. The AACC version, with instructions on how to fill it out, can be downloaded from the AACC Pathways website ([American Association of Community Colleges, 2015](#)).
6. Other colleges have made videos describing meta-majors, including St. Petersburg College ([AEA, 2015](#); [St. Petersburg College, 2016](#)).
7. See the summary of the evaluation CCRC, MDRC, and CUNY are conducting of the CUNY Start program ([Community College Research Center, n.d.](#)).

References

- AEA. (2015, June 7). *Academic pathways at SPC* [Video file]. Retrieved from https://www.youtube.com/watch?v=jI9_kqgir9U
- Alamo Colleges District. (n.d.). Six new institutes, countless pathways. Retrieved from <https://www.alamo.edu/main.aspx?id=48814>
- American Association of Community Colleges. (n.d.a). Advance work assignments—Institute 2. Retrieved from <http://www.aacc.nche.edu/Resources/aaccprograms/pathways/Pages/AdvanceWorkInstitute2.aspx>
- American Association of Community Colleges. (n.d.b). AACC Pathways Project program map template. Retrieved from http://www.aacc.nche.edu/Resources/aaccprograms/pathways/Documents/Advance_work_Institute2_program_map_template.pdf
- American Association of Community Colleges. (n.d.c). The Pathways Project. Retrieved from <http://www.aacc.nche.edu/Resources/aaccprograms/pathways/Pages/default.aspx>
- American Association of Community Colleges. (n.d.d). Project information: What is the pathways model? Retrieved from <http://www.aacc.nche.edu/Resources/aaccprograms/pathways/Pages/ProjectInformation.aspx#model>
- American Association of Community Colleges. (2015). Guided pathways essential practices: Scale of adoption tool. Retrieved from http://www.aacc.nche.edu/Resources/aaccprograms/pathways/Documents/AACCPathways_Institute%201_PathwaysPracticeScaleofAdoptionAssessment.pdf
- Bailey, T. R., Jaggars, S. S., & Jenkins, D. (2015a). *Redesigning America's community colleges: A clearer path to student success*. Cambridge, MA: Harvard University Press.
- Bailey, T., Jaggars, S. S., & Jenkins, D. (2015b). *What we know about guided pathways*. New York, NY: Columbia University, Teachers College, Community College Research Center.
- Bailey, T., Jeong, D. W., & Cho, S.-W. (2010). Referral, enrollment, and completion in developmental education in community colleges. *Economics of Education Review*, 29(2), 255–270.
- Clover Park School District. (n.d.). Personalized pathways. Retrieved from <http://www.cloverpark.k12.wa.us/Dept/TechnicalEd/Pathways.aspx>
- Community College Research Center. (n.d.). CUNY Start evaluation. Retrieved from <http://ccrc.tc.columbia.edu/research-project/cuny-start-evaluation.html>
- Community College Research Center. (2016). Guided pathways essential practices: Scale of adoption self-assessment. Retrieved from <http://ccrc.tc.columbia.edu/media/k2/attachments/guided-pathways-adoption-template.docx>

- Completion by Design. (n.d.). Loss/momentum framework (LMF). Retrieved from <http://completionbydesign.org/our-approach/step-3-diagnose-the-issues/pathway-analyses-toolkit/pathway-analyses/lossmomentum-framework>
- Crawford, S. (2016). *Designing student-focused curriculum through academic pathways* [PowerPoint presentation]. Retrieved from http://achievingthedream.org/sites/default/files/resources/ct_pathways_spc_sept_2016.pdf
- Denley, T. (2016). *Choice architecture, academic foci and guided pathways* [PowerPoint presentation]. Retrieved from http://www.aacc.nche.edu/Resources/aaccprograms/pathways/Documents/ChoiceArchitectureAcademicFociGuided_TristanDenley.pdf
- Florida Department of Education. (n.d.). The Florida Educator Accomplished Practices (FEAPs). Retrieved from <http://www.fldoe.org/teaching/professional-dev/the-fl-educator-accomplished-practices.stml>
- Indian River State College. (n.d.). Guided pathway programs. Retrieved from <http://www.irsc.edu/programs/pathways/programpathways.aspx?id=4294977138>
- Jaggars, S. S., Edgecombe, N., & Stacey, G. W. (2014). *What we know about accelerated developmental education*. New York, NY: Columbia University, Teachers College, Community College Research Center.
- Karp, M. M., & Bork, R. H. (2014). “They never told me what to expect, so I didn’t know what to do”: Defining and clarifying the role of a community college student. *Teachers College Record*, 116(5), 1–40.
- Kotter International. (n.d.). 8-step process. Retrieved from <https://www.kotterinternational.com/8-steps-process-for-leading-change/>
- Lahey, J. (2014, January 21). Students should be tested more, not less. *The Atlantic*. Retrieved from <https://www.theatlantic.com/education/archive/2014/01/students-should-be-tested-more-not-less/283195/>
- Nagaoka, J., Farrington, C. A., Roderick, M., Allensworth, E., Keyes, T. S., Johnson, D. W., & Beechum, N. O. (2013). Readiness for college: The role of noncognitive factors and context. *Voices in Urban Education*, 38, 45–52.
- Northeast Wisconsin Technical College. (n.d.). Fields of interest. Retrieved from <https://www.nwtc.edu/programs/fields-of-interest>
- Reis, R. A. [ronaldadamreis]. (2015, September 21). *Meta major* [Video file]. Retrieved from <https://www.youtube.com/watch?v=9uoeebRutxI>
- Pierce College. (n.d.a). Career pathways—Home. Retrieved from <http://www.pierce.ctc.edu/dept/pathways/>

Pierce College. (n.d.b). Career pathways—High school. Retrieved from <http://beta.pierce.ctc.edu/pathways-hs>

Scott-Clayton, J., Crosta, P. M., & Belfield, C. R. (2014). Improving the targeting of treatment: Evidence from college remediation. *Educational Evaluation and Policy Analysis*, 36(3), 371–393.

St. Petersburg College [StPetersburgCollege]. (2016, October 14). *Guided pathways at St. Petersburg College* [Video file]. Retrieved from <https://www.youtube.com/watch?v=xlhadrQ1xaw>

St. Petersburg College. (n.d.). Business degrees that open doors. Retrieved from <http://www.spcollege.edu/degrees-training/business>

Zeidenberg, M., Jenkins, D., & Scott, M. (2012). *Not just math and English: Courses that pose obstacles to community college completion* (CCRC Working Paper No. 52). New York, NY: Columbia University, Teachers College, Community College Research Center.



TEACHERS COLLEGE, COLUMBIA UNIVERSITY

**Community College Research Center
Teachers College, Columbia University**

525 West 120th Street, Box 174

New York, New York 10027

Tel: 212.678.3091 Fax: 212.678.3699

ccrc@columbia.edu

<http://ccrc.tc.columbia.edu>