

REPORT | OCTOBER 2020

Lessons Learned From Advising Redesigns at Three Colleges

Hoori Santikian Kalamkarian | Lauren Pellegrino | Andrea Lopez | Elisabeth A. Barnett





The Community College Research Center (CCRC), Teachers College, Columbia University, has been a leader in the field of community college research and reform for over 20 years. Our work provides a foundation for innovations in policy and practice that help give every community college student the best chance of success.

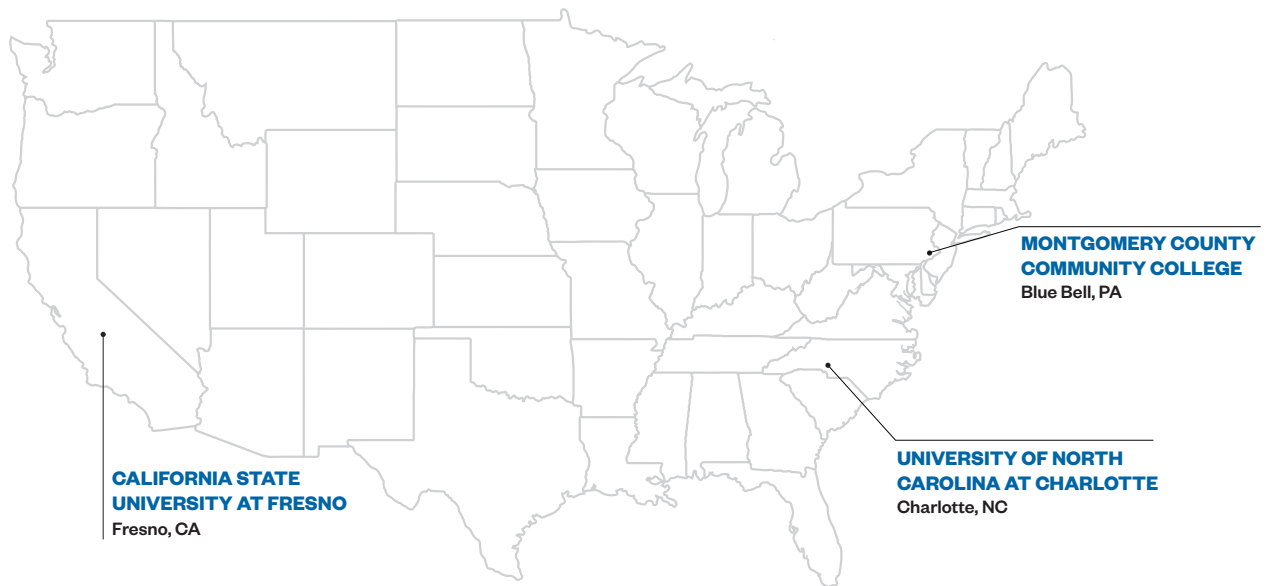
Acknowledgments

Funding for this report was provided by the Bill & Melinda Gates Foundation. The findings and conclusions contained within are those of the authors and do not necessarily reflect positions or policies of the foundation. The authors thank Tom Brock, Alexander Mayer, Melissa Boynton, Melinda Karp, Doug Slater, Elizabeth Ganga, Benjamin Cohen, and Marco Lepe for their contributions and feedback on this report. The authors are also grateful for the advisors, administrators, and other staff members redesigning advising at the University of North Carolina at Charlotte, California State University at Fresno, and Montgomery County Community College.

Table of Contents

1	 	Inside This Report
2	 	Introduction
4	 	Background
4		The Rationale for Redesigning Advising
4		Defining High-Quality Advising
5		Advising Enhancements at Fresno State, UNC Charlotte, and MCCC
6	 	Qualitative Study Design
8	 	Lessons From the Three Colleges
8		Expanding Informational Communication
11		Identifying and Supporting Struggling Students
18		Improving Advising Sessions
26	 	Conclusion
27	 	Endnotes
28	 	References
30	 	Appendix

Institutions Participating in This Study



Inside This Report

Colleges and universities across the United States are working to enhance academic advising to improve students' experiences and outcomes. These improvements require evidence-based redesigns of policies, practices, and technical and nontechnical advising tools. As institutions undertake redesigns, much of the focus is on leveraging technology to support advisors in communicating with students, identifying students who are struggling and supporting them with timely and appropriate interventions, and facilitating meaningful and productive advising sessions.

This report presents findings on the implementation of a technology-mediated advising redesign within the context of a randomized controlled trial (RCT) at three institutions—the University of North Carolina at Charlotte (UNC Charlotte), California State University at Fresno (Fresno State), and Montgomery County Community College (MCCC). These institutions were participants in a broader initiative called iPASS (Integrated Planning and Advising for Student Success), which provided support to 26 institutions adopting technology-based advising redesigns. UNC Charlotte, Fresno State, and MCCC aimed to improve their advising systems using a three-pronged approach: expanding informational communications to students, identifying and supporting students who are struggling, and improving advising sessions.

Though the RCT showed that quantitative student outcomes, such as grade point average (GPA) and credits earned, did not significantly change during the first two semesters of the three-semester study (Mayer et al., 2019), qualitative fieldwork suggests that stakeholders across the three institutions gained valuable experiences that may provide lessons for other colleges considering engaging in advising redesign. In this report, we explore how advisors adjusted their approach to advising work, how they used relevant tools and resources, and some of the challenges that arose during the redesign's implementation. The following are highlights from our qualitative research:

- The colleges were able to implement the intended improvements to advising. Most advisors leveraged new and existing technologies to improve communications to students and implement new advising practices during face-to-face sessions.
- The colleges found it challenging to engage students with informational messages, such as reminders about upcoming deadlines and information about campus resources, especially when using mass communications that were not personalized.
- Early-alert data from faculty and self-reported data from students were hard to gather but useful, to a degree, for guiding interventions with individual students.
- Advising technologies offered some efficiencies in scheduling and documenting advising sessions. These technologies also enhanced degree and career planning discussions.
- Through the use of supporting materials, advisors learned new ways or new language to use to engage students during advising sessions. Advisors appreciated these resources, provided that they were given the discretion to determine whether and when to apply the suggested strategies.

Introduction

There is a broad consensus that advising can help college students make good decisions as they select their majors and courses and help them stay on track to achieve their goals (Center for Community College Student Engagement [CCCSE], 2018; Karp, 2011; Montelongo, 2003). Engaging with an advisor—particularly early on in students’ college experience—positively affects students’ engagement, decision-making, and self-confidence (CCCSE, 2018). Though some studies have found the association between advising and student outcomes to be nonsignificant, recent studies suggest that the use of advising services is positively associated with credit completion and grade point average (GPA) (Kot, 2014; Young-Jones, Burt, Dixon, & Hawthorne, 2013; Pascarella & Terenzini, 2005). These findings point to the important role advisors play in helping students have a positive experience on campus and stay on track toward the attainment of their postsecondary goals.

To maximize the benefits of advising, institutions across the country are redesigning their advising processes and implementing new advising technologies. Community colleges and broad-access four-year colleges, in particular, tend to lack the resources to hire more advisors, so they often look to use technology to better understand students’ needs and help advisors meet them. Advising technology has the potential to make advisors’ communications with students more efficient, useful, and frequent. Moreover, some advising technologies have data capabilities that can enable advisors to intervene strategically with students who need support. For example, early-alert systems allow faculty to identify students who are missing assignments or showing other signs of academic struggle. When early alerts are issued, advisors can reach out to struggling students to offer assistance. Additionally, advisors can use early-alert data during advising sessions to guide their conversations with students.

Since 2015, 26 institutions nationwide have redesigned their advising structures and processes using technology as part of the Integrated Planning and Advising for Student Success (iPASS) initiative, led by EDUCAUSE with support from the Bill & Melinda Gates Foundation and the Helmsley Charitable Trust. iPASS grantees have implemented or enhanced a range of advising technologies, including early-alert, degree planning, and communication tools and case-management software. Many have also adopted new practices in order to offer higher quality support to students. For more information on iPASS and the Community College Research Center’s (CCRC) role in the initiative, see the accompanying text box.

CCRC and MDRC partnered to study the implementation and impact of an enhanced iPASS initiative at three of these colleges—the University of North Carolina at Charlotte (UNC Charlotte), California State University at Fresno (Fresno State), and Montgomery County Community College (MCCC). These three institutions were selected because they were well poised to align their advising reforms with the parameters of the study and interested in measuring the impact of the iPASS enhancements. The study employed a randomized controlled trial (RCT) as well as site visits and interviews. In a previous report (Mayer et al., 2019), the research team detailed early findings from the RCT, discussed whether institutions implemented the enhanced iPASS model with fidelity to its design, and described how the experience of students in the program group contrasted with that of students in the control group. The current report focuses on insights gained from studying the experiences of the three institutions in implementing the enhanced iPASS model, which may be useful to other institutions engaging in advising redesign. We also share advisor and student perspectives on the advising practices and technologies that were part of the redesign.

CCRC's Role in Three iPASS Research Projects

The Integrated Planning and Advising for Student Success (iPASS) initiative—which has provided up to \$225,000 to each of 26 colleges to help them adopt technologies for improving education planning, advising, and student risk targeting and intervention by 2018—was launched in 2015 with funding from the Bill & Melinda Gates Foundation and The Helmsley Charitable Trust. It followed on the heels of a similar initiative, undertaken from 2012 to 2015 at 19 colleges, in which several lessons were learned:

- Emerging technologies have the potential to allow students to create and follow academic plans effectively, receiving support when they struggle.
- Technology alone is not enough to achieve project goals. Deep changes in institutional structures, systems, and attitudes are required.
- High-quality advising and student support may be facilitated through a set of core SSIPP principles, which call for advising to be sustained, strategic, integrated, proactive, and personalized.

CCRC has been involved in both initiatives. Under the more recent initiative, EDUCAUSE and Achieving the Dream (ATD) have provided implementation services in the form of technical assistance to iPASS grantee colleges, while CCRC has conducted research on college activities and the student experience. All three organizations—EDUCAUSE, ATD, and CCRC—have sought to learn whether the reform of advising and student supports—made possible through the use of technology—provides students with a more seamless and holistic advising experience and ultimately improves student outcomes.

As an evaluator and thought partner in the 2015–2018 iPASS initiative, CCRC has been engaged in three related research projects, which have resulted in reports, presentations, blogs, tools, and other resources for the field.

Project 1. Measuring trends in development and scaling: CCRC has analyzed progress in implementation and student outcomes during the grant period across all 26 participating colleges. Resulting reports include a survey of technology use and advising practices provided to the colleges, a baseline report of key performance indicators (KPIs) ([Armijo & Velasco, 2018](#)), and a final report of trends in the KPIs after two years of project implementation ([Velasco, Hughes, & Barnett, 2020](#)).

Project 2. Understanding implementation: CCRC has studied implementation processes at nine colleges, some of which emphasized advising in STEM pathways. We conducted a review of the literature ([Fletcher, Grant, Ramos, & Karp, 2016](#)), reported on the use of predictive analytics ([Klempin, Grant, & Ramos, 2018](#)), released a set of case studies of four iPASS colleges ([Klempin, Pellegrino, Lopez, Barnett, & Lawton, 2019](#)), and studied how iPASS reform has unfolded at different levels of the college ecosystem ([Klempin & Pellegrino, 2020](#)). We also wrote an invited chapter on the SSIPP principles in practice ([Klempin, Kalamkarian, Pellegrino, & Barnett, 2019](#)).

Project 3. Evaluating enhanced advising at three colleges: In collaboration with MDRC, CCRC has conducted research at three colleges that were provided technical assistance as they developed enhanced iPASS advising systems targeted to specific student populations. We partnered in an evaluation that included a randomized controlled trial and qualitative fieldwork to understand implementation at each college. This resulted in a report on the project designs developed at each college ([Kalamkarian, Boynton, & Lopez, 2018](#)), an interim report on early outcomes ([Mayer et al., 2019](#)), a report on implementation (current report), and a final report on outcomes (Miller et al., in press).

Background

The Rationale for Redesigning Advising

At community colleges and broad-access four-year colleges and universities, where graduation rates remain low, there is a growing emphasis on strengthening advising and student services to support students in persisting toward a credential (Himes & Schulenberg, 2016). There is some evidence that advising improves student outcomes and experiences. For example, Kot (2014) used a propensity score matching analysis to compare the outcomes of first-year, first-time-in-college students who met with an advisor with those of similar students who did not meet with an advisor. Students who met with an advisor achieved higher first-term, second-term, and cumulative first-year GPAs. CCCSE (2018) found that community college students who met with an advisor were more engaged in campus activities, faculty interactions, and learning activities and supports than their peers who did not meet with an advisor. Further, community college students who met with an advisor made decisions early in their tenure at college—such as enrolling in courses that aligned with their career goals—that strengthened their self-confidence.

However, advisors at such institutions experience substantial time and resource constraints. Some have as many as 1,200 students in their caseload, making it challenging for them to engage with students beyond helping them register for courses for the following semester (CCCSE, 2018). With such high caseloads, advisors have limited time to explore students' academic and career goals, conduct multisequence course planning, or discuss nonacademic circumstances that may be affecting students' progress (Kalamkarian & Karp, 2015). High caseloads also make it more difficult for advisors to be proactive in reaching out to students, making it more likely that the students who receive advising are not those with the greatest need but those with the know-how and confidence to seek out support. Faced with these issues, postsecondary institutions are increasingly redesigning advising to make it more accessible and proactive, with the ultimate goal of improving student outcomes.

Defining High-Quality Advising

At colleges participating in the iPASS initiative, advising redesign is based on two complementary ways of framing high-quality advising practices and systems. From an advising-as-teaching perspective (Appleby, 2008), effective advisors teach students how to navigate college and encourage the development of noncognitive skills such as resourcefulness, professionalism, and accountability. In addition to helping students register for courses, advisors help students clarify their educational goals and understand the longer term implications of their academic decisions. Advisors also teach students how to address any academic hurdles they encounter (Appleby, 2008; Habley, Bloom, & Robbins, 2012; National Academic Advising Association, 2006).

High-quality advising can also be conceived of in terms of the SSIPP principles (Karp, Kalamkarian, Klempin, & Fletcher, 2016). In this framing, effective student support is not structured as a one-time intervention but *sustained* throughout students' time at college. Advisors are *strategic*, differentiating their efforts based on students' needs. Advising and student supports are *integrated* into the student experience, and advisors

and student support staff are *proactive* in reaching out to students. Finally, advisor–advisee engagement is *personalized*, so students get help from advisors who know them as individuals (Karp & Stacey, 2013; Kalamkarian, Boynton, & Lopez, 2018).

The iPASS initiative is focused on using technology to help academic institutions provide high-quality advising through increased data and efficiencies. For example, advising technologies may make it easier to identify students who are struggling and deliver them targeted interventions, providing overburdened advisors with the information and resources they need to be efficient and strategic with their services.

Advising Enhancements at Fresno State, UNC Charlotte, and MCCC

The three institutions in our RCT study implemented an enhanced version of the iPASS initiative over three semesters for a subset of randomly assigned students (the program group). While all three had launched advising technologies as part of their broader iPASS work, for the RCT study, they furthered their advising redesigns by developing and implementing systematic processes in three main areas: expanding informational communication to students, identifying and supporting struggling students, and improving advising sessions.

- To *expand informational communication*, colleges increased email and phone outreach to inform students about campus resources and activities, such as ways to access tutoring and deadlines for financial aid requirements.
- To *proactively identify and support struggling students*, each college deployed a student self-analysis survey at the beginning of the semester. Each also utilized early-alert software programs that enabled faculty to notify students and their advisors when students were experiencing academic challenges in specific courses; advisors and support staff could then conduct targeted outreach to the students who were flagged. Finally, each college required at least some students in the program group to meet with an advisor to receive additional support and clarify their academic and career pathways.
- To *facilitate improved advising sessions*, each college, with support from the research team, developed an advising toolbox, or a document that advisors could use as a guide when meeting with students face-to-face. The toolbox contained learning objectives for the advising session; probing, open-ended questions to foster student-led discussion; and suggested topics for advisors to explore with students, including noncollege obligations, career aspirations, and experiential learning opportunities such as study abroad.

To implement these reforms, UNC Charlotte, Fresno State, and MCCC engaged both existing and new staff. Each institution identified at least one advisor or advising director to assume leadership of the advising redesign project. At Fresno State, for example, one advisor and one interim advising director were referred to as “iPASS coordinators,” overseeing all of the administrative functions associated with the iPASS grant. At all three institutions, project leads were critical to the implementation of redesigned strategies and practices, issuing ongoing guidance and reminders to advisors.

Implementing redesigned advising practices also required the efforts of academic advisors at each campus. UNC Charlotte and Fresno State have advising centers at each of their colleges (e.g., colleges of education and business); pre-major and major students receive advising at their college, and undeclared students do so at a centralized advising center. At MCCC, academic advising is offered by the Student Success Center; advisors are assigned programs of study and advise students based on their intended or declared program. Because the redesign targeted students pursuing a wide range of programs of study, most advisors at each of the three institutions participated in implementing redesigned practices. See Appendix Table A2 for more information on the target populations at each college.

Both Fresno State and MCCC created new positions and hired new staff to fill those positions to implement their redesigns. Fresno State hired two peer mentors to disseminate informational emails and call students flagged on early-alert surveys for targeted guidance. MCCC created the position of a retention specialist. Previously, the college did not have services to support students with acute nonacademic challenges, and the retention specialist was hired to meet that need. Advisors were able to refer students with nonacademic issues that they felt required more intensive support to the retention specialist.

Qualitative Study Design

Our implementation research focused on three questions:

1. How did colleges implement the three main elements of the advising redesign?
 - a. How did colleges expand informational communications?
 - b. How did colleges identify and support struggling students?
 - c. How did colleges improve advising sessions?
2. How did colleges create broader policies and structures to support the implementation of the advising redesign?
3. What are the implications for other colleges considering advising redesign?

To address these questions, we conducted two site visits at each participating institution from spring 2017 to fall 2017. During each visit, we interviewed a range of stakeholders, including administrators, advisors, key project staff (staff who managed the design and implementation of the project), other relevant student support staff (such as peer mentors at Fresno State), and students. All interviews were audio-recorded and transcribed. The research team also took detailed notes and completed a debrief after each site visit to capture their initial impressions.

To understand the institutions' experiences during the final semester of implementation (spring 2018), we conducted phone interviews with project leads and a subset of advisors from each institution. Project leads and advisors were again asked about their implementation experiences and perceptions of the redesign. In addition, we asked what aspects of the redesign they would like to see further scaled and why, and what they were planning next for the redesign.

Our data are derived from 238 in-person interviews¹ and 18 phone interviews, which we analyzed using Dedoose qualitative analysis software. The research team used an a priori coding scheme whereby we began with an initial set of codes based on the components of the redesign, such as informational outreach and advising sessions.²

Our data are limited in a few ways that are important to note. First, our data collection did not include faculty. Consequently, the faculty perspective on redesign strategies—particularly on ways to identify and support students struggling in their courses—is missing in our data. Second, advising redesign takes time, and stakeholders’ experiences and perspectives likely continued to evolve beyond the scope of our data collection period. Third, our data are limited to individuals who were willing to participate in interviews, and interviewees may not be representative of the broader population of stakeholders affected by the redesign. Finally, contextual factors can influence reform implementation in various ways, so other colleges should take their own contexts into consideration when applying lessons from the current report. Characteristics of the three colleges participating in the current study are shown in Table 1.

Table 1.
Institutional Characteristics

CHARACTERISTICS	FRESNO STATE	MCCC	UNC CHARLOTTE
Urbanicity	Large city	Large suburb	Large city
Degrees awarded	Bachelor's and graduate	Associate	Bachelor's and graduate
Open admission	No	Yes	No
Total students	24,405	11,480	28,721
Total undergraduates	21,530	11,480	23,404
Undergraduate enrollment status (%)			
Full-time	87.5	32.9	86.6
Part-time	12.5	67.1	13.4
Race/ethnicity of undergraduates (%)			
American Indian or Alaska Native	0.3	0.3	0.3
Asian	14.3	5.7	6.0
Black or African American	3.0	14.3	16.4
Hispanic	49.3	6.2	9.2
Native Hawaiian or other Pacific Islander	0.2	0.3	0.1
White	19.9	59.3	58.8
Two or more races	2.8	3.0	4.2
Race/ethnicity unknown	4.7	9.3	2.6
Nonresident alien	5.6	1.6	2.4
Financial aid status of undergraduates (%)			
Awarded Pell Grant	57.4	27.5	37.3
Full-time, first-time students awarded any aid	87.4	63.7	75.9
Retention rate ^a (%)			
Full-time	79.0	65.0	82.0
Part-time	47.0	48.0	79.0
Completion rate of degree/certificate ^b (%)			
100% of normal time	15.0	8.0	25.0
150% of normal time	52.0	20.0	55.0
200% of normal time	60.0	26.0	58.0

Note. Data from U.S. Department of Education, National Center for Education Statistics, IPEDS 2016–17.

^aFirst-to-second-year retention rates of students who enrolled in college for the first time in fall 2016.

^bCompletion rates are calculated for two-year degrees or certificates for MCCC and four-year bachelor's degrees for UNC Charlotte and Fresno State. Normal time for two-year degrees or certificates is defined as two years. Normal time for four-year bachelor's degrees is defined as four years.

Lessons From the Three Colleges

While there were similarities in the strategies the institutions used to expand informational communication, identify and support struggling students, and improve advising sessions, each institution used a unique approach. In the sections that follow, we describe the enhancements the colleges made in these three areas and outline the main lessons other colleges can take away from our findings.

Expanding Informational Communication

All three colleges aimed to enhance their communications to students about general topics, such as campus services or tips for exams, and increased their informational phone calls or emails to program group students throughout the semester (as detailed in Table 2). The research team collaborated with advising redesign leaders at each institution to develop messages before the first semester of the project. Over time, school leaders and advisors modified their messages to refine the tone, personalize the wording, and include resources they believed were relevant to particular groups of students. In our interviews, several lessons emerged related to the informational communications portion of the advising redesign.

Table 2.
Summary of Strategies to Expand Informational Communication

FRESNO STATE	MCCC	UNC CHARLOTTE
<ul style="list-style-type: none"> At the start of the semester, peer mentors emailed and called students in the program group about upcoming degree planning workshops and appointments. 	<ul style="list-style-type: none"> Advisors and project leads sent messages informing students in the program group of deadlines, resources, and other topics. They sent messages approximately every two weeks, sending out a total of eight messages. 	<ul style="list-style-type: none"> Advisors notified students in the program group of their enrollment in critical progression courses via email in Week 2 of the semester. Notification emails included reminders about support services.

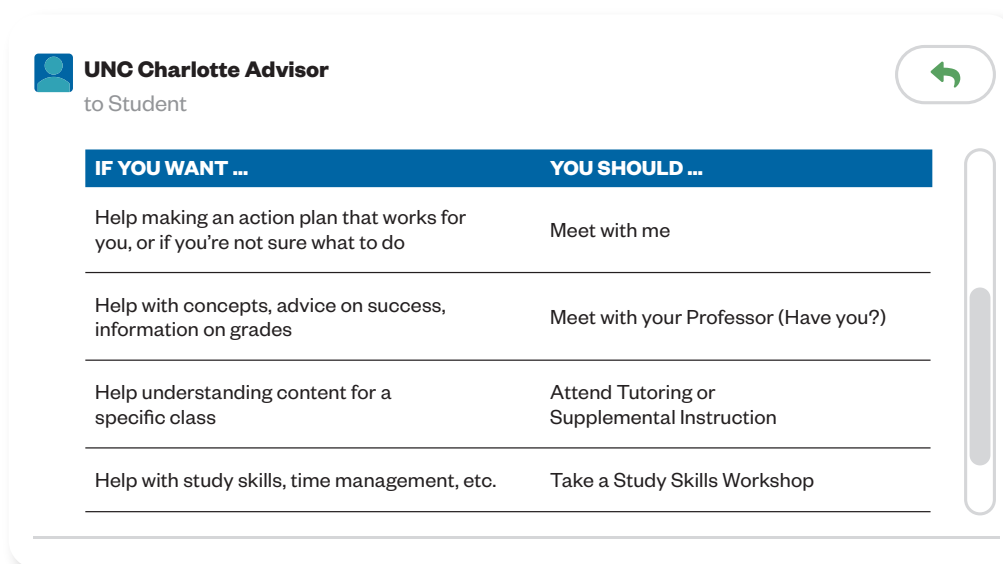
Note. A critical progression course is a course considered predictive of success in a major, such as Principles of Accounting for a business major or General Chemistry for a biology major.

Advisors valued the more consistent and frequent communications with students, but these communications did not often engage students.

At MCCC and UNC Charlotte, program group students received messages from an academic advisor containing general information about the college every two weeks during the first semester of implementation. Advisors at both institutions noted that these communications were an important addition to their more personal outreach. An advisor from MCCC explained that these messages “are really good at highlighting the kind of information that we end up helping students with most of the time.” From this advisor’s perspective, the college’s informational messages were especially useful for reaching students who might have difficulty navigating online resources independently. UNC Charlotte’s communications included informational tables designed to guide students to college resources (See Figure 1 for an example.)

Figure 1.

Table Utilized in Informational Communications at UNC Charlotte



IF YOU WANT ...	YOU SHOULD ...
Help making an action plan that works for you, or if you're not sure what to do	Meet with me
Help with concepts, advice on success, information on grades	Meet with your Professor (Have you?)
Help understanding content for a specific class	Attend Tutoring or Supplemental Instruction
Help with study skills, time management, etc.	Take a Study Skills Workshop

However, most students reported not receiving the messages, not reading the messages (if they recalled receiving them), or not taking any action in response to them (if they read them). For example, when asked about the messages that MCCC sent, one student said, “There was some. I don’t open them.”

Messages’ effectiveness depended on who they were coming from, the language they contained, and the relevance of their content.

Interviews with advisors and students suggest that colleges could be more strategic in crafting and disseminating messages. One important factor to consider is who sends the message. Some students shared that whether they decided to read an email depended on the identity of the sender. When asked if he read messages from the university, one Fresno State student said, “not all of them,” adding that he read messages that came from his teachers or fellow students.

As part of their advising redesigns, Fresno State and MCCC introduced new staff positions—peer mentors and a retention specialist, respectively. Students’ confusion over the roles of these new staff members contributed to their limited engagement with communications from these individuals. One Fresno State student recalled seeing emails from a person identified as a peer mentor but not responding because he believed that peer mentors were intended for “people who need . . . help,” when peer mentors were part of the university’s strategy for proactively reaching all students. To help students understand the purpose of the peer mentors, the university sent a message introducing students to their assigned peer mentor in the second semester of the redesign. According to the peer mentor supervisor, this message made it easier for the peer mentors to connect with students, in part by allowing the peer mentors to refer to the introductory email during follow-up interactions. Similarly, the retention specialist at MCCC noted that students who were directly referred to her by an advisor—and

presumably had received some preliminary explanation from the advisor about the role of the retention specialist—were more likely to respond to communications and schedule an appointment. These accounts suggest that students may be more receptive to messages that come from someone they recognize, such as an assigned advisor or instructor, and that if messages must come from someone with whom the student is unfamiliar, strategic communication introducing that person can be helpful.

Using uninviting language may also decrease student engagement with informational communications. MCCC advisors noted that the language used in informational communications may have had elements that deterred students from opening the messages or responding. Most notably, messages sent from MCCC’s learning management system automatically inserted a “Do Not Reply” precursor to the subject. One MCCC advisor described this phrase as “a big block” from a student’s point of view. The advisor said:

When [the student] clicked on it, sure enough, there was the information that we had sent out. But I think the fact that the first thing they see in bold black is “do not reply”—you know, I think it’s kind of a turnoff.

Input from marketing or communications departments and students may help advising staff to craft messages that are more appealing to students.

Students indicated that they were less inclined to read messages that they felt contained content that was not relevant to their personal circumstances. One MCCC student said that he does not read announcements from the college “just because I know they won’t relate to me.” Similarly, another MCCC student indicated that he did not read informational messages “unless it’s pertaining directly to me,” further underscoring the importance of message content aligning with students’ needs.

MCCC advisors and project leads also suggested that the general nature of the email content may not have resonated with all students. Messages covered a wide range of topics, from childcare and transportation services to descriptions of the roles and responsibilities of institutional staff, such as the bursar. Colleges may improve their messages’ effectiveness by better tailoring their content to students’ circumstances—for instance, targeting information about childcare services toward students with young dependents or information about transportation services toward commuter students.

Creating new staff roles can improve colleges’ capacity to communicate with students, but coordination between advisors and other support providers is critical.

The addition of peer mentors to Fresno State’s student support staff increased the college’s capacity to communicate with students about advising, and advisors appreciated that the peer mentors managed reminders to students about advising appointments. Advisors could see that students were getting reminder calls because the peer mentors would log this information in the student management system. From one advisor’s perspective, “the regular phone calls made a huge difference” for students. The advisor noted that the phone calls were more personal than emails, so they helped create a sense of personalized support.

However, while advisors knew that the peer mentors were calling students in the program group, there was limited communication or coordination between peer mentors and advisors. Advisors did not consistently check what guidance peer mentors had offered

students and so could not build on that information during advising sessions. In turn, peer mentors indicated they did not reach out to advisors to notify them of students experiencing more complex challenges that could warrant further intervention. While the college had intended this to be one of their functions, peer mentors generally felt uncomfortable engaging with students on topics beyond administrative matters, such as appointment reminders. Fresno State provided peer mentors more training in the second semester of the redesign, which both project leads and peer mentors noted helped peer mentors have more fruitful conversations with students. For example, one project lead described showing the peer mentors how to pace outreach efforts and “leave different types of messages,” which helped ease the peer mentor’s hesitation to repeatedly call students.

Similarly, at MCCC, advisors did not regularly interact with the newly hired retention specialist. Several advisors indicated that they were not aware of the retention specialist; others said that though they were aware of this role, they did not know how to submit a referral. Those who did make referrals did not know of any mechanism in place for the retention specialist to “close the loop” and inform advisors about engagement with students who were referred. The retention specialist was hired during the second semester of the redesign; at the time of our data collection, the college was working through strategies for improving this position’s integration into existing support services.

LESSONS FOR OTHER COLLEGES

Expanding Informational Communication

- Consider ways to make general information as personalized and relevant to students as possible.
- Use inviting language in email communications. Consider asking marketing and communications departments for support in crafting messages.
- Send students important information in an email from someone they know, such as an assigned advisor or faculty member.
- If a message should come from someone with whom students are unfamiliar, first send an introduction explaining the role of the unfamiliar staff member.
- Leverage peers and other staff to augment support services’ capacity. Make sure to establish clear protocols for coordination among staff, including “closing information loops.”

Identifying and Supporting Struggling Students

As described in detail in Table 3, all three institutions in our study adopted strategies to proactively identify students in need of help and provide them with targeted, personalized support. First, each college sent out a student self-analysis survey at the beginning of the semester to give students an opportunity to report any concerns or needs. Advisors at UNC Charlotte and MCCC and peer mentors at Fresno State were responsible for receiving students’ survey responses and reaching out to students if their needs could be addressed immediately and/or referring to their survey responses during an advising session that semester.

Second, the institutions systematically used early-alert systems where faculty could flag students who were struggling academically early in the semester. During the fourth or fifth week of the semester, the institutions sent an early-alert survey to faculty asking them to identify students exhibiting signs that they needed support, such as poor academic performance or attendance issues. Faculty could respond to the survey or access the early-alert system directly at any point during the semester to flag students in need of help.

Finally, UNC Charlotte and MCCC provided advisors with student risk scores generated by predictive analytic systems. These scores were intended to further inform advisors of students who could benefit from additional support.

Table 3.
Summary of Strategies to Identify and Support Struggling Students

FRESNO STATE	MCCC	UNC CHARLOTTE
<ul style="list-style-type: none"> • Project leads sent a survey asking students in the program group about their academic and advising experiences at the start of the semester. • Faculty received early-alert surveys in Weeks 5 and 10 of the semester asking them to report on the academic progress of program group students. • Faculty received an early-alert survey in Week 7 of the semester asking them to report on the progress of all students. • Peer mentors called program group students every three weeks and, when applicable, asked about students' early-alert flags. 	<ul style="list-style-type: none"> • Project leads sent a survey asking students in the program group about their perceptions of the upcoming semester (such which course they were most concerned about passing). • Faculty received an early-alert survey in Week 4 of the semester asking them to report on the academic progress of program group students. • Faculty received an early-alert survey in Week 7 of the semester asking them to report on the progress of all students. • Advisors emailed and/or called program group students who responded to the survey or received an early-alert flag. 	<ul style="list-style-type: none"> • Project leads sent a survey asking students in the program group about their academic experiences at the start of the semester. • Faculty received early-alert surveys in Week 4 asking them to report on the progress of all students. • Faculty submitted midterm grades for all students, and advisors emailed program group students who received flags and/or D or F midterm grades.

Identifying struggling students using a student survey was more challenging than anticipated. However, when available, survey data were informative.

At all three institutions, response rates to the student self-analysis surveys were low. At UNC Charlotte and Fresno State, project leads administered the survey via email to students and directly received the responses, which they then disseminated to the appropriate advisors. MCCC's advisors administered the surveys and received responses directly. Project leads and advisors reported receiving very few responses. An advisor at MCCC recalled, "Some people only had one response. I think I had five or six."

Advisors offered various perspectives on why students did not respond to the survey. One MCCC advisor indicated finding at least one of the questions confusing and believed that may have contributed to the low response rate. An advisor at UNC Charlotte reported thinking that the survey was not appropriate for all students, explaining:

That's something that could be appropriate for our first-semester student. But a second- or third-semester—some of the questions that were being addressed, I feel like a student may look at those and be like . . . "I've already talked about those things with my advisor last semester."

When students were asked about the self-analysis survey, very few remembered receiving it, and some confused it with other communications, surveys, and early-alert flags. When asked if he recalled receiving a survey, a student at MCCC responded, “I think I did get that.” However, when probed to see if he completed the survey, the student said, “I’m not really sure. . . . [My advisor] would know better about that than I would.”

Low response rates notwithstanding, peer mentors and advisors reported that information collected from the self-analysis surveys was highly valuable and allowed them to offer more personalized and timely support for students who did complete it. An MCCC advisor recalled, “I had a few [students] who seemed like they needed some additional support, so based on their responses, I reached out to them and gave them some folks that they could contact.”

Once advisors were provided with the data from the surveys, they referred to the responses during advising sessions. One Fresno State advisor said:

I felt like [the survey] was helpful because I did go in there, and I printed them out ahead of time. So if a student had completed one, I made sure to have that in front of me, and those [responses] were some of the things I did address with them.

Another Fresno State advisor referred to the survey responses as a “jumping-off point” for the advising session. An MCCC advisor noted that a couple of students stated on the survey that they were uncertain if they had what it takes to be a successful student. The advisor said it was helpful to talk through those concerns with students.

Though few students completed the self-analysis surveys, our interview data indicate that self-reported concerns from students may be highly valuable to advisors—particularly at institutions where time and resources are scarce. When students report issues, staff can focus less on identifying students who need support and more on offering the necessary support. Colleges might consider ways to motivate students to report their concerns as early in the term as possible, so advisors can intervene with students before the registration rush and before issues take a toll on students’ academic performance. Integrating surveys into processes that students already must complete, such as registration, may increase response rates. By connecting with students who report challenges early in their first semester, advisors can also establish trust and rapport with students so that students feel confident coming to them with issues that may arise later in the semester or in their college experience.

The share of faculty who used early-alert systems varied across institutions, depending on institutional context.

Faculty response rates to early-alert surveys varied across the three institutions in our study. MCCC and UNC Charlotte reported 70% and 65% response rates, respectively, across two semesters of the study, while Fresno State reported closer to a 40% response rate. Project leads offered some insights about the early-alert trends at their institutions. For instance, MCCC faculty have long been expected to use the early-alert system, which may explain their higher response rates. In contrast, early-alert engagement among faculty has historically been low at Fresno State, and even though the faculty response rate following the college’s advising redesign seems low, it is still higher than previous faculty

response rates. Fresno State's project leads suggested this increase may be attributed to communications to faculty prior to the study period to encourage the use of early alerts. At UNC Charlotte, a technology change between the first and second semesters of the study may have slightly depressed the use of the early-alert system by faculty, as they were likely still getting familiar with the new system in the second semester. Moreover, the new system did not include a feature that enabled faculty to give students positive feedback, and project leads believed that faculty may have been using that feature prior to the change.

Strategies to get faculty to participate in the early-alert process are critical for early-alert systems to function optimally, since faculty possess vital information about student performance that can be shared with advisors so that they can collaboratively support students in need. Additionally, faculty make up a large stakeholder group at colleges, and they interact with students most frequently, so they can provide critical insights about how to communicate with students and how to provide support when students are struggling. Furthermore, faculty input into the development of early-alert messages could help them understand what messages their students will receive and prepare students accordingly. Ensuring that faculty are aware of the interventions that follow as a result of the alerts may also lead to their increased use of the alert systems.

Early-alert flags did not always tell advisors what they needed to know to intervene with students effectively.

When faculty raised flags about student performance, they often did not include specific information about what triggered the alert. In these cases, it was difficult for advisors to make pertinent recommendations and offer guidance to students. Students could also be affected by the lack of detail in the early alerts. One MCCC advisor said, "A lot of times, the students have no idea why they have that early alert, so they need to contact the instructor and find out exactly what it is." Colleges should look for ways to make sure the flags in their systems clearly communicate the nature of the issue that requires an intervention. Colleges can also encourage faculty to elaborate on the issue when submitting an early alert.

With limited time and resources, it was challenging for advisors to provide personalized attention to students who were flagged in early-alert systems.

Advising technologies made some aspects of advisors' work more efficient, such as identifying struggling students using early-alert data. However, advisors' limited capacity was a barrier to personalizing their responses to students flagged in early-alert systems.

Advisors reported encountering new and time-consuming technological and data management tasks as a result of the redesign. One MCCC advisor explained that even with an early-alert system to send messages to flagged students, "still, it takes time because you have to go in, you have to identify [flagged students], then you have to set up your mail merge and get that all straightened out." At UNC Charlotte, the project lead managed most of these administrative tasks, including setting up mail merge parameters for the advisors. This process made initial messages easier to disseminate, but advisors needed to manage electronic or in-person follow-ups, which took considerable time and effort. One UNC Charlotte advisor described this work, stating, "I'll have a student come in and be like, 'Hey, you sent me an email saying I [am] at risk in these classes,' and I'm like, 'I did?'"

And then I am going back and checking because I just have so many students that it is just hard to manage all of them like that.”

Some advisors mentioned that they had to be selective in which students they reached out to regarding flags. At least one advisor indicated that she was not able to provide students with positive feedback or intervene with students who only received one flag because she only had time to respond to the highest-need students. One UNC Charlotte advisor said:

We get so many flags. Some mornings, I look at my email, and I may have, I don't know, 10 or 15 ... different flags for different things. Some of them are [for positive feedback], and some of them are not. Some of them are a big deal, and some of them are not. ... Like I said, if there are multiple flags for one student, that's something that would kind of catch my attention. If it's just one thing, I may not reach out.

To help advisors use their limited time efficiently, key project staff at each institution drafted customizable templates for advisors to use to respond to early alerts. However, this approach presented an issue for advisors who had developed relationships with students and did not want to seem cold or impersonal in these communications.

Advisors expressed concerns about the language used in automated responses sent to students via early-alert systems.

Advisors across all three institutions reported being worried about how alert messages, particularly those indicating risk, were framed for students. One Fresno State advisor described the messages as potentially “scary,” especially for first-year and first-generation students. A UNC Charlotte advisor discussed the importance of personalizing the messages sent to students as a follow-up to faculty-triggered early alerts “so that they know that we are paying attention to what’s going on with them.” The advisor described the importance of using a “softer tone” without abandoning a “sense of urgency.”

When designing and implementing an early-alert system, colleges should consider gathering wide-ranging input from advisors, faculty, and students to design messaging strategies that may be more likely to be welcomed and acted upon by students.

Students had varied reactions to early-alert messages, ranging from fear to indifference to appreciation.

Students who received warning messages about academic troubles reported a range of feelings. Some students responded positively to receiving warnings about academic performance. One UNC Charlotte student said the warning messages made him feel like “okay, they really care about what I’m doing. They want me to go ahead and get my stuff together. [They] don’t want me to fail. So, then I immediately set up an appointment.” When asked how she reacted when she received an early alert, another UNC Charlotte student responded, “I started working harder and studying more for tests.” A third UNC Charlotte student said that receiving an early alert made her realize her instructor was paying attention to her individual performance:

It's kind of easy to feel like when you're in these big classes, that the professor doesn't notice me specifically. I'm just another name. [Receiving an alert is]

like, “No, I know you, I know you’re not doing great in this class, and you should step up your game.” I think it’s more encouraging, honestly. It’s more like this person’s putting all this effort into teaching me and letting me know her office hours and letting me know how to get help. . . . And she’s concerned, and I’m concerned too, like I should actually reach out and try and get help.

At MCCC and UNC Charlotte,³ students could receive positive messages (kudos) as well as those expressing concern. Students who received positive messages appreciated receiving them but sometimes noted that they were not personalized. One MCCC student said:

I don’t know what the message was, but it was pretty generic. It wasn’t like a personalized message or anything like that. It was encouraging. I know that it wasn’t, like, typed out, written all nicely, and that good stuff. But it’s still nice to see someone cares about the progress, at least.

One UNC Charlotte student reported receiving a message that said, “Keep up the outstanding work.” Another UNC Charlotte student referred to the positive messages as receiving a “gold star” and as “pat-on-the-back emails.” The student appreciated the message, adding that it felt good to know that the professor recognized his hard work.

Not all students thought early alerts were a good idea, however. One UNC Charlotte student said, “I think students know what they are doing. I don’t think they need, like, an email saying they are doing bad. Because they pretty much know already.” Other students described early alerts as “red flags” or “dings.” When asked whether she should have a received a warning, another UNC Charlotte student responded:

Yes and no. Because I transferred into the class—like, I switched into it late—I had missed the first assignment, so I had a zero for it. . . . So then I had to talk to [the professor], and I got it figured out. So, I knew what [the alert] was for, but it was kind of annoying. Nobody wants a red flag.

Some students indicated they did not always know from whom the messages originated or why they were receiving them. It is also possible that some students viewed the early alert as an indicator that they were past the point of help. A student who dropped a course after receiving a flag said, “I knew the flag was probably coming, but I guess it is kind of discouraging to see that. It is a good thing, though, definitely, to be aware of your progress.” When asked if she dropped the course because of the flag, the student responded, “No, I guess I kind of already knew I was going to have to withdraw based on how much higher I would need to raise my grade.” A student who was failing a class described how he felt when he received the early alert: “I was [made] a little bit uncomfortable by it because no one likes to see an F.” When asked if he talked with anyone about it, he responded, “No, because there’s nothing you can do. Like, you have an F.”

One strategy to address student confusion about early-alert messages may be to develop some boilerplate language about early alerts for faculty to include in their syllabi. Informing students about early-alert systems could reduce confusion and help students be more responsive because they would know what it means to receive that type of message. In explanations of early-alert systems and in the language used in the alerts, colleges should frame the message in a way that is supportive for struggling students. Students may be more receptive to receiving alerts if they believe that the professor is expressing

sincere concern. Colleges should also consider including opportunities for faculty to provide positive feedback to students. Positive messages can be meaningful for students, particularly those who have struggled in the past or lack confidence as college students.

Advisors expressed concerns about using predictive analytic data to identify and support struggling students, underscoring the critical role of the advisor in interpreting these data.

In addition to student survey responses and early-alert data, UNC Charlotte and MCCC provided advisors with student risk scores generated by predictive analytic systems. Advisors at both institutions expressed concerns about using these data to inform their engagement with students. A technological glitch at UNC Charlotte resulted in the risk scores of a large subset of the university's population not being updated when new information about students' academic performance during the fall term was available. One UNC Charlotte administrator noted that "skepticism about data quality" made advisors, who had already expressed concerns about the tool, even less inclined to use it. She said advisors were worried that predictive analytics were "guiding people out of majors where they could have been successful too soon," adding, "I think there was concern about the use of the predictive analytics and turning this into a system where people might be stereotyped or categorized unfairly." In response, UNC Charlotte reduced its emphasis on predictive analytics after the first semester of the study.

Similarly, MCCC advisors reported that the predictive analytic data were not always actionable. Some students identified as at-risk were designated as such due to circumstances, such as the location of their home, that advisors could not do anything to address. MCCC responded to advisors' concerns by implementing a new model for assessing which students would be required to meet with an advisor for the second semester of the project. In this model, predictive analytic data were still used as one way to identify a larger subset of students for extra support, but indicators over the course of the semester, such as grades, were used to determine which students needed an additional advising session.

These observations illustrate the limitations of predictive analytic tools as currently used and underscore the fact that human judgment is necessary to properly make use of the data. Predictive analytics may help colleges and advisors identify broad categories of students who may benefit from support, but they cannot effectively diagnose specific struggles a student may be having.

LESSONS FOR OTHER COLLEGES

Identifying and Supporting Struggling Students

- Be attentive to the language and tone used in student surveys and early-alert messages.
- Engage students in the development of student surveys and early-alert messages. Doing so may result in content that is more likely to elicit a response.
- Make it easy for students to report challenges they are experiencing by integrating surveys into processes that students are already completing, such as registration.
- Coordinate with faculty in developing early-alert surveys and messages, and educate them about the interventions that will be implemented in response to early-alert data so that they are aware of the implications of flagging a student.
- Customize early-alert surveys so that flags from faculty inform advisors about the type of challenges a student is experiencing, so they can better offer support.
- Utilize predictive analytic data to identify students who may need support, but recognize the limitations of predictive analytics' ability to inform specific interventions.
- Set aside time in advisors' schedules for advisors to review survey, early-alert, and predictive analytic data and implement interventions in response to these data.

Improving Advising Sessions

The final component of the advising redesign was a required advising appointment for at least a subset of the students targeted by the project. (See Table 4 for details.) Colleges placed registration holds on these students to compel them to meet with an advisor.⁴ The advising sessions were intended to provide targeted academic and nonacademic support and help students clarify their academic and postgraduation pathways. To support advisors in facilitating these discussions, colleges developed and promoted the use of an advisor toolbox. Advisors also had access to early-alert and predictive analytic data, which they could use to guide their discussions with students.

Table 4.
Summary of Strategies to Improve Advising Sessions

FRESNO STATE	MCCC	UNC CHARLOTTE
<ul style="list-style-type: none"> • Program group students were required to meet with an advisor for a one-hour advising session each semester of the study. • The advising toolbox emphasized utilizing technology (MyDegreePlan) for degree planning with students and provided a GradesFirst template for advising notes. 	<ul style="list-style-type: none"> • Program group students were required to meet with an advisor at least once per semester of the study. • The advising toolbox emphasized utilizing technology (MyCareerPlan) for career planning discussions with students and instructed advisors to determine if students were experiencing any of nine listed academic and nonacademic issues. • The toolbox guided advisors to take notes using Starfish's SpeedNotes feature (a checklist aligned with the toolbox topics). 	<ul style="list-style-type: none"> • Program group students who received D or F midterm grades were required to meet with an advisor. • The advising toolbox highlighted three main questions to ask about students' academic experiences.

Registration holds got students to see their advisors, but the circumstances and timing were not ideal, as many students put off advising sessions until absolutely necessary for course registration.

At Fresno State, although registration holds were placed at the start of the semester, most students waited until peak registration periods for the following semester to meet with an advisor and have the hold removed. As a result, the academic support and planning that these advising sessions were meant to provide, which would have been most beneficial early in the semester, did not take place until midway through the semester. Advisors found it challenging to make appointments with all of the students with registration holds while also meeting the needs of other students looking for guidance during the registration period. One Fresno State advisor had blocked off 45 hours of his schedule earlier in the semester to meet with students with holds but found that “very few students [were] responding, so a lot of that time ended up going unfilled.”

The registration hold system at MCCC was especially weak as a tool for motivating students to seek advising—possibly, MCCC project leads and advisors suggested, because the college has flexible registration periods, and some courses do not reach capacity enrollment. In this context, students with registration holds have little incentive to see an advisor before the start of the following semester to enroll in courses. One of the MCCC project leads explained that “students just kind of wander in whenever to get registered.” Requiring them to come back, having prepared for a career planning discussion, for a scheduled appointment that would meet the objectives of the redesign turned out to be difficult.

Overall, registration holds did not motivate students to see an advisor until doing so was absolutely necessary to register for courses for the next semester. As a result, any guidance that advisors wanted to offer students during advising sessions to improve their course performance did not reach students until at best halfway through the semester. Alternatives to registration holds, such as offers of early registration or tickets to institution-sponsored events, may work better to incentivize students to meet with an advisor early in the semester. Students may also be more inclined to seek out advising throughout the semester if they feel a stronger connection with their advisor, so it may help to take steps to strengthen the advisor–advisee relationship, such as making it clear that each student is assigned a specific advisor who is there to provide individualized support.

Software and online tools helped advisors streamline appointment scheduling, prepare for advising sessions, and take notes during sessions. However, some structural changes may be necessary to ensure that advisors can make the best use of them.

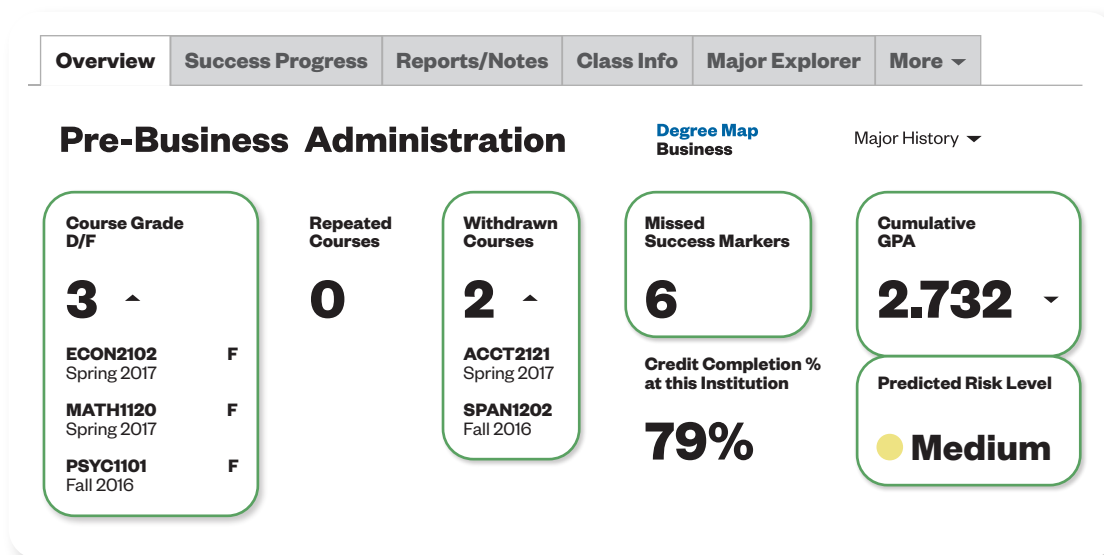
To help students schedule appointments with their advisors, institutions used an email campaign system that allowed advisors to send students a message with a link to a page where they could book an appointment. Advisors and students liked this system and reported that the scheduling feature was easy to use. One UNC Charlotte advisor said, “Students appreciate that ability to immediately see that availability and to make an appointment.”

In interviews, advisors identified the tools that were most helpful in preparing for advising sessions. For example, during the advising redesign, UNC Charlotte launched a software application that allowed advisors to see multiple types of information about students,

including their schedules, in a single window. An advisor explained that the application “brings what we are using multiple technologies for now into one place,” making it easier to review more information about the student and ask more targeted questions. (See Figure 2 for a representation of this application.)

Figure 2.

Representation of UNC Charlotte’s Student Information Application



Institutions also deployed tools to make note-taking during advising sessions a more common and consistent practice. At UNC Charlotte, project leads created a checklist of topics that should be discussed in advising sessions. In addition to any information advisors chose to document about a session, advisors marked off items that were discussed on the checklist. Advisors noted that the checklist served as a reminder to “double-check what we touch base on” during the advising sessions. As part of its advising toolbox, Fresno State created a template with fields where advisors could input information related to a student’s coursework, time management, study skills, major, and degree plans. While the template was not embedded in the college’s advising technology, all advisors copied and pasted the completed templates into their shared system so that they were easily visible for all advisors who may need to access a given student’s profile. The template provided a structure that motivated advisors to write notes that, as one Fresno State advisor said, give “a much clearer picture of what was discussed” in an advising session compared with the “very generic, brief notes” that were common practice before the redesign. Another Fresno State advisor described filling in the template during advising sessions rather than writing notes from memory after the session was complete, as she had done previously.

Advisors’ use of technologies was influenced by the organizational structure of advising at each college. For example, while UNC Charlotte’s communication tool allowed advisors to generate appointment sign-up campaigns, some departments primarily offered walk-in sessions and preferred not to shift to an appointment structure. While advisors from these departments liked the campaign tool, they did not use this functionality. Even

user-friendly tools may not be utilized if the organizational structure does not make their use feasible or relevant. In selecting tools, colleges should consider their functionalities in the context of existing structures and, if there is misalignment, determine whether structural changes are warranted or if another tool would be more appropriate.

Students and advisors described technology-based degree planning discussions as time-consuming but useful.

Fresno State and MCCC utilized degree planning technologies to enable students to map out the courses they need to take each semester to complete a degree. Degree planning tools make it visually easier and more efficient to build a multise semester plan and compare and contrast pathways for different programs of study. At both institutions, students generally found value in the technology-based degree planning process, with one Fresno State student describing it as “extraordinarily helpful.” Still, both advisors and students reported that students had a strong preference for developing plans, at least initially, with support from an advisor. One Fresno State student reported that an advisor’s feedback helped him understand the difference between two math courses that both fulfilled a requirement. With the advisor’s help, he said, he picked the one that was more appropriate for his interests and skill set. The student said, “It was just really reassuring for that kind of instance” to hear from the advisor, explaining that the advisor knows “classes I can sign up for or what’s unnecessary.”

Students’ preference for direct support from an advisor in developing their degree plans meant that advisors needed to allocate more time than originally anticipated during advising sessions for this activity. As one Fresno State advisor noted, the advising session needed to include enough time to teach students how to use the degree planning tool as well as how to build a program plan using the tool. Fresno State extended advising appointments to a minimum of 45 minutes for program group students, making these time-intensive discussions possible. For colleges that do not have the capacity to extend advising appointments, finding ways to get students in during non-peak periods and streamline administrative advising tasks, such as course registration, can allow more time for degree exploration and planning discussions.

MCCC students and advisors highlighted both benefits and limitations of career planning technologies, with such tools’ helpfulness varying according to students’ age and tenure at the college, among other factors.

MCCC used a career planning tool, which included four career assessments and other career exploration functionalities, to allow students to explore their interests and see how they align with career options. Advisors found the data from these assessments useful for supporting students in identifying a career path that would be a good fit. One MCCC advisor, for example, described how she used the results of the career assessment to help a student understand how her intended degree and career pathway might not align well with her strengths. The student worked in a dental office and was planning to pursue a career as a dental hygienist. The advisor pointed out to the student that “dental hygiene wasn’t even on the list” of career options recommended by the career assessment tool, nor were related majors, such as physical or occupational therapy. To further underline her point, the advisor searched for dental hygiene in the career planning tool, which showed it was a weak match for the student.

The advisor said it “was a valuable discussion to have” with the student. Another advisor similarly described how he looked at the career assessments with a student “and really dug into it.” Through this exercise, the student, who was “questioning what she was doing,” received feedback that helped her decide to pursue a certificate in payroll management or bookkeeping.

Some MCCC students also pointed to the utility of the tool in helping them understand different career opportunities, especially when accompanied by support from an advisor. One student described how an advisor “discussed how to navigate” the tool and “how to search for specific careers.” He also was able to find information about pursuing careers in different states, such as each state’s requirements and median salary. From this conversation, the student said, he was able to “basically get an idea of . . . what is it that fits career-wise.”

While the career assessments were helpful for some students, others felt that they were not aligned with their needs or life circumstances. For example, one MCCC student, who was planning to pursue a business economics degree, said that his advisor had used the career assessment data to suggest that artistic careers might be more appropriate. The student, however, felt that he had to consider his parents’ preferences and the financial prospects of the career path he pursued. “I definitely appreciate the advice, and I would take it if I were in different circumstances,” he said. “I don’t think I would have chosen business administration if I had full control. But, you know . . . it’s one of those difficult things.”

Advisors and students at MCCC also noted that the career planning tool did not do much to enhance discussions with students who were nearing graduation or older students. One older student said, “You know, at 83 [years old] . . . career? I’ll leave that for the kids.” This student elected to skip the required advising appointment and did not complete the career assessment. Similarly, one advisor said, “Somebody who’s graduating, or a 67- or 64-year-old, they don’t need the intrusiveness of what I’m providing at this point.” Students who were nearing graduation or older were generally clear about their career intentions. Asking these students to complete a career plan and meet with an advisor to discuss the plan was a misallocation of resources from this advisor’s perspective.

Because not all students need intensive career planning, differentiating policies and practices regarding career planning for different types of students should help ensure that advising resources are allocated efficiently and that students who are likely to benefit from career support are directed to relevant resources.

Some advisors found the advising toolbox useful, and their reactions to it suggest it may have utility for professional development.

In general, Fresno State advisors perceived the toolbox as useful because it gave them direction and helped them enhance their interactions with students during advising sessions. (See Figure 3 for an excerpt from the toolbox.) As one Fresno State advisor said, the toolbox provided “tips and pointers that I could think about as the conversation was going on.” Advisors typically did not feel compelled to address every topic or use every question listed in the toolbox. “If it flowed into those questions, it flowed, and if it didn’t, it didn’t,” the same advisor added. Another advisor said the toolbox “laid out what we were wanting to do” to ensure effective advising sessions, while others said that it gave the advisors clear guideposts to work toward.

The suggested questions for students included in the Fresno State toolbox also helped advisors reflect on their practice and identify areas for potential development. For example, one advisor

described reflecting on advising sessions and her use of the toolbox. She said, “There [were] a few times where I was like, ‘I should have asked that question. That would have been a better leading question or a better detailed question to ask in that area.’”

Project leaders at Fresno State and UNC Charlotte described interest in continuing to use the toolbox both in their advising practice and by advisors institution-wide. During an interview in the final semester of data collection, one Fresno State project lead who also advises students said, “The one thing I will say that I truly took away from this . . . would be that toolkit. . . . There are questions on there that now I’m using all the time because I never thought of asking it that way.” UNC Charlotte’s project leads also expressed interest in integrating the toolbox into onboarding practices for new advisors and professional development for advisors with a limited background in counseling.

The concept of a toolbox received the least traction among advisors at MCCC, seemingly because they found it redundant with the work they were already doing. Most MCCC advisors described the toolbox as “just stuff I do with every single student anyway,” though they did mention finding some features useful. MCCC advisors said that having the toolbox, especially the list of nine issue areas that may be affecting student performance, was a useful reminder, particularly for new advisors.

Figure 3.

Excerpt From Fresno State’s Toolbox

OBJECTIVES BY TOPIC	GUIDING QUESTIONS
MyDegreePlan	
<ul style="list-style-type: none"> • Confirm student has completed MyDegreePlan that extends beyond one semester. • Review plan to identify and help student understand potential pitfalls in what student has planned. • Help student craft and/or adjust as necessary a MyDegreePlan based on assessment of aspirations, interests, and values. • Teach student to create a “game plan” or develop strategies for next semester that will help him/her achieve academic and career success. 	<ul style="list-style-type: none"> • Why do you think this plan makes sense to you? • What part of this plan might be challenging? • Can we think of strategies to address those challenges in advance, so you have a game plan?
Academic and Career Goals	
<ul style="list-style-type: none"> • Address student concerns pertaining to major selection. • Support student understanding of degree requirements for major(s) and/or program of study. • Help student understand and articulate his/her career options and opportunities based on major selection. • Check on how student is performing in major classes to inform how to guide student on success in their chosen major. • Direct student toward activities and habits that will nurture and support his/her academic and career goals. • Refer to University Advising Center for major exploration or Career Development Center for further career guidance, as needed. • Refer students to other campus involvement opportunities such as clubs, study abroad, internships, research opportunities, etc. • Guide student to understand connection between current-term performance and long-term goals. 	<ul style="list-style-type: none"> • How do you feel about the major you have selected? • What about this major feels like it is a good fit? • What isn’t a good fit? • What questions/concerns do you have regarding your major? • What type of career do you hope to gain from earning your degree in this major? • What jobs are most interesting to you? What type of work are you interested in doing? • What internships have you considered? What type of internships are you interested in doing? • What other activities, like study abroad or research with a professor, are you interested in exploring? • What impact do you think your current semester will have on your college degree? Your life after college?

Figure 4.**Core Issues Outlined in MCCC's Toolbox**

ISSUE AREAS	ACTION ITEMS
1. Career indecision When a student is uncertain as to his or her successful career path	<ul style="list-style-type: none"> • Referral to Career Services • To-do to further explore MyCareerPlan independently
2. College readiness When a student isn't academically prepared to be successful in college-level coursework (study habits, etc.)	<ul style="list-style-type: none"> • Encouragement to take Strategies for College Success 101 if not already taken • Referral to Tutoring if appropriate
3. Educational value When a student doesn't understand the intrinsic value of earning an education, making him or her question the purpose of this experience	<ul style="list-style-type: none"> • To-do to further explore MyCareerPlan independently
4. Health issues When a student has diagnosed or undiagnosed symptoms of anxiety, depression, or other (mental or physical) illnesses that interfere with his or her academic success	<ul style="list-style-type: none"> • Referral to Student Support and Referral Team
5. Interference factor When a student has nonacademic issues that are interfering with academic success	<ul style="list-style-type: none"> • Referral to Student Support and Referral Team or Financial Aid (or additional cohort program depending upon student need/interest—Minority Student Mentoring Initiative, Keystone Education Yields Success, Act 101 Scholars Program, etc.)
6. Mismatch between skills, interests, and abilities When a student has an educational goal that doesn't align with his or her actual skill level or abilities	<ul style="list-style-type: none"> • Referral to Career Services • Referral to Disabilities Services (if applicable)
7. Self-efficacy When a student doesn't believe that he or she can actually succeed in school (lacks the Little Engine's mentality)	<ul style="list-style-type: none"> • Referral to the Director of Student Retention
8. Sense of belonging When a student does not feel a sense of belonging or affiliation with the institution	<ul style="list-style-type: none"> • To-do encouragement to explore campus involvement
9. Transition management When a student is having trouble adopting an identity as a college student, transitioning from other roles as a high school student or worker	<ul style="list-style-type: none"> • Referral to the Director of Student Retention

Colleges looking to support advisors in their professional growth and to establish norms for high-quality advising that are consistent across the institution may consider creating an advising toolbox. Our interviews, especially with advisors at Fresno State and UNC Charlotte, indicate that engaging advisors in using a toolbox may help them to reflect on their practice and identify areas for development, pointing to the potential for a toolbox to promote advisors' professional development and growth.

That said, an advising toolbox is only useful if advisors are receptive to using it. Our data point to important lessons learned about the process of developing a toolbox that have implications for advisors' willingness to use it. In our study, advisors were receptive to a toolbox if it was designed to guide rather than dictate their approach with students. Moreover, if advisors are part of the toolbox design process, they can ensure that the resource aligns with what they identify as the areas of their practice that need enhancement, further bolstering the utility of the tool.

Finally, the toolbox should ideally be a living document that is revisited and revised over time with the input of advisors. Through periodic revision processes, advisors

may benefit from opportunities for self-reflection and growth and stay up to date with changes in institutional processes, structures, and strategic goals. To facilitate this type of sustained engagement, colleges may consider establishing toolbox revision structures, such as recurring meetings to discuss and refine the toolbox.

Some types of toolbox questions were especially useful in deepening advisor–student interactions.

Advisors identified three types of guiding questions from the toolboxes that they thought served them well in deepening their engagement with students. First, questions probing the positive aspects of students’ experiences were well received. For example, one UNC Charlotte advisor said that before the college implemented the toolbox, he typically focused on investigating if a student was struggling and did not often ask students, “What is it that you’re doing well?” The toolbox prompted him to change his practices. Similarly, a Fresno State advisor described how asking positive questions—such as “What’s your most enjoyable course?”—helped her probe deeper into students’ academic experiences and better understand the alignment between students’ interests and their degree and career plans.

Second, advisors found guiding questions on challenging circumstances useful for broaching topics that could be difficult to discuss or uncover. As one UNC Charlotte advisor put it, “sometimes [students who are struggling] will say everything is going well,” or the challenges they are facing “may not necessarily be academic.” In these cases, the toolbox reminds advisors to ask about things that are not going well, which often revealed issues “that may or may not have naturally have come out of that conversation if I didn’t specifically ask it.” Similarly, another UNC Charlotte advisor described engaging with a student who was performing decently academically but who, when asked about things that were not going well, revealed nonacademic struggles. The advising session “turned into a conversation about the on-campus food pantry and referrals to the nutritionist.” These topics might not have come up without the prompt included in the toolbox.

Finally, advisors noted that they liked questions from the toolbox that asked students to explore the behaviors or habits that could be affecting their academic success. For example, one Fresno State advisor said, “I really like asking students how they like to spend their time outside of school [to] reduce stress.” Another Fresno State advisor described asking about a student’s strategy for studying for his most challenging course and advising the student to find a place on campus to study to avoid the distractions he described facing at home.

Colleges considering an advising toolbox may benefit from engaging advisors to determine if there are specific types of questions that they would like to include. The three types of questions that advisors in our study observed deepened their relationships with students could be a useful starting point.

LESSONS FOR OTHER COLLEGES

Improving Advising Sessions

- Consider other ways to incentivize students to meet with an advisor besides registration holds, such as offering early registration for those who seek advising.
- Make use of technologies to help advisors streamline some of their activities, such as scheduling appointments and taking notes. Ensure structures and resources are in place to support advisors in using these functionalities.
- Ensure advisors have adequate time and resources to work with students to develop academic plans.
- Tailor career advising practices according to students' needs instead of using a one-size-fits-all approach.
- Create an advising toolbox by working with advisors to develop a resource that guides advisors in the areas where they think they may benefit from additional support.

Conclusion

This report describes the experiences of three colleges and universities—UNC Charlotte, Fresno State, and MCCC—that implemented advising reforms in the spring and fall of 2017. This report is part of a larger portfolio of work that CCRC and MDRC are producing as part of our research partnership with UNC Charlotte, Fresno State, and MCCC. Previously published products include a framework for advising redesign (Community College Research Center, 2017), a report describing the initial versions of each institution's reforms (Kalamkarian et al., 2018), a report on interim student outcomes (Mayer et al., 2019), and a report on longer term student outcomes (Miller et al., 2020).

While the advising redesigns at UNC Charlotte, Fresno State, and MCCC did not result in a statistically significant improvement in student outcomes (Mayer et al., 2019), the redesign process yielded important lessons about reforming advising practices, which are delineated in this report. Based on our implementation findings, we offer several suggestions for colleges engaging in or considering this work:

- Acknowledge up front that technology alone cannot resolve advising and student support issues, nor can it replace face-to-face conversations about education and career planning.
- Consider ways to encourage or make it easier for students to self-report concerns.
- Call for input from advisors, faculty, students, and communications or marketing teams on the content of risk-related messages and alerts.
- Consider alternatives to registration holds to incentivize students to meet with an advisor, as registration holds may have unintended consequences.
- Provide ongoing support for staff in implementing reformed advising practices.

The findings and implications presented in this report align with key takeaways from CCRC’s broader portfolio of research on advising reform. Previous CCRC research found that—similar to the experiences at the three institutions included in this report—advising reform at other iPASS grantee institutions was a complex, multifaced, and iterative undertaking (see Karp et al., 2016; Klempin & Pellegrino, 2020). iPASS institutions are still at an early stage in implementing reforms at scale. At this point in the redesign process, we observe at best small improvements in institutional performance indicators, such as the average number of credits attempted, during the iPASS grant period, and even those changes cannot be attributed directly to the advising reforms (see Velasco et al., 2020). Still, there is qualitative evidence that iPASS grantee institutions are iterating toward a model of advising that theory and research suggest is more effective, especially when aligned with broader, whole-scale reforms that transform the student experience, such as guided pathways or state- or system-level reforms (Klempin & Pellegrino, 2020).

While we have learned a great deal about advising reform, there is much more to understand. Subsequent analyses of student outcomes at institutions at later stages of advising reform can help clarify the role of advising reform in supporting improvements in postsecondary outcomes. Advising research that places greater focus on racial, socioeconomic, and gender equity can be instrumental for understanding how advising can support broader institutional efforts to improve equity in student outcomes. Moreover, further study of the changing roles, responsibilities, and functions of advisors, faculty, and other support providers in a technology-mediated context can further illuminate how technology can facilitate effective advising.

Endnotes

1. This count does not represent distinct individuals; a majority of advisors and project leads were interviewed once in spring 2017 and again in fall 2017 to understand their experience over the course of the redesign.
2. As analysis progressed, the team adjusted and added code titles, code descriptions, and subcodes as needed. The final codebook included 19 main codes and 84 subcodes. (See Appendix Table A3 for excerpts from the codebook.) The research team met weekly to discuss codes, questions, and emerging themes and to update other teams on progress. The research team leader conducted coding checks over the course of the months-long analysis period.
3. UNC Charlotte’s early-alert system included kudos during the first semester of the study. In summer 2017, the university moved to a system that did not include kudos.
4. A registration hold prevents a student from registering for courses. The hold is lifted once the student fulfills the requirements specified by the hold, such as meeting with an academic advisor.

References

- Appleby, D. C. (2008). Advising as teaching and learning. In V. N. Gordon, W. R. Habley, & T. J. Grites (Eds.), *Academic advising: A comprehensive handbook* (2nd ed., pp. 85–102). Jossey-Bass.
- Armijo, M., & Velasco, T. (2018). *Baseline trends in key performance indicators among colleges participating in a technology-mediated advising reform initiative*. New York, NY: Columbia University, Teachers College, Community College Research Center.
- Center for Community College Student Engagement. (2018). *Show me the way: The power of advising in community colleges*. Austin, TX: The University of Texas at Austin, College of Education, Department of Educational Leadership and Policy, Program in Higher Education Leadership.
- Community College Research Center. (2017). *Implementing holistic student support: A practitioner's guide to key structures and processes*. Retrieved from <https://ccrc.tc.columbia.edu/publications/redesigning-advising-student-support-tools-practitioners.html>
- Fletcher, J., Grant, M., Ramos, M., & Karp, M. M. (2016). *Integrated planning and advising for student success (iPASS): State of the literature* (CCRC Working Paper No. 90). New York, NY: Columbia University, Teachers College, Community College Research Center.
- Habley, W. R., Bloom, J. L., & Robbins, S. (2012). *Increasing persistence: Research-based strategies for college student success*. John Wiley & Sons.
- Himes, H., & Schulenberg, J. (2016). The evolution of academic advising as a practice and as a profession. In T. J. Grites, M. A. Miller, & J. G. Voller (Eds.), *Beyond foundations: Development as a master academic advisor* (pp. 1–20). Jossey-Bass.
- Kalamkarian, H. S., & Karp, M. M. (2015). *Student attitudes toward technology-mediated advising systems* (CCRC Working Paper No. 82). New York, NY: Columbia University, Teachers College, Community College Research Center.
- Kalamkarian, H. S., Boynton, M., & Lopez, A. G. (2018). *Redesigning advising with the help of technology: Early experiences of three institutions*. New York, NY: Columbia University, Teachers College, Community College Research Center.
- Karp, M. M. (2011). *Toward a new understanding of non-academic student support: Four mechanisms encouraging positive student outcomes in the community college* (CCRC Working Paper No. 28). New York, NY: Columbia University, Teachers College, Community College Research Center.
- Karp, M. M., Kalamkarian, H. S., Klempin, S., & Fletcher, J. (2016). *How colleges use integrated planning and advising for student success (iPASS) to transform student support* (CCRC Working Paper No. 89). New York, NY: Columbia University, Teachers College, Community College Research Center.
- Karp, M. M., & Stacey, G. W. (2013). *What we know about nonacademic student supports*. New York, NY: Columbia University, Teachers College, Community College Research Center.
- Klempin, S., Grant, M., & Ramos, M. (2018). *Practitioner perspectives on the use of predictive analytics in targeted advising for college students* (CCRC Working Paper No. 103). New York, NY: Columbia University, Teachers College, Community College Research Center.

- Klempin, S., Kalamkarian, H. S., Pellegrino, L., & Barnett, E. A. (2019). *A framework for advising reform* (CCRC Working Paper No. 111). New York, NY: Columbia University, Teachers College, Community College Research Center.
- Klempin, S., Pellegrino, L., Lopez, A. G., Barnett, E. A., & Lawton, J. (2019). *iPASS in practice: Four case studies*. New York, NY: Columbia University, Teachers College, Community College Research Center
- Klempin, S., & Pellegrino, L. (2020). *A complex ecosystem: A qualitative investigation into dynamics affecting the implementation of college advising redesigns* (CCRC Working Paper No. 117). New York, NY: Columbia University, Teachers College, Community College Research Center.
- Kot, F. C. (2014). The impact of centralized advising on first-year academic performance and second-year enrollment behavior. *Research in Higher Education*, 55(6), 527–563.
- Mayer, A., Kalamkarian, H. S., Cohen, B., Pellegrino, L., Boynton, M., & Yang, E. (2019). *Integrating technology and advising: Studying enhancements to colleges' iPASS practices*. New York, NY: MDRC.
- Miller, C., Cohen, B., Yang, E., & Pellegrino, L. (in press). *Using technology to redesign college advising and student supports: Findings and lessons from three colleges' efforts to build on iPASS*. New York, NY: MDRC.
- Montelongo, R. (2003). *Latina/o undergraduate involvement with college student organizations and its effects on specific student outcomes at two, large, predominately White, Midwestern universities*. Washington, DC: Office of Education Research and Improvement.
- National Student Clearinghouse Research Center. (2018). *Term enrollment estimates: Spring 2018*. Retrieved from <https://nscresearchcenter.org/currenttermenrollmentestimate-spring2018/>
- National Academic Advising Association. (2006). *Concept of academic advising*. Retrieved from <https://nacada.ksu.edu/Resources/Pillars/Concept.aspx>
- Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students: A third decade of research*. Jossey-Bass.
- Shapiro, D., Dundar, A., Huie, F., Wakhungu, P. K., Yuan, X., Nathan, A., & Hwang, Y. (2017). *A national view of student attainment rates by race and ethnicity—Fall 2010 cohort* (Signature Report No. 12b). Herndon, VA: National Student Clearinghouse Research Center.
- Velasco, T., Hughes, K. L., & Barnett, E. A. (2020). *Trends in key performance indicators among colleges participating in a technology-mediated advising reform initiative*. New York, NY: Columbia University, Teachers College, Community College Research Center.
- Young-Jones, A. D., Burt, T. D., Dixon, S., & Hawthorne, M. J. (2013). Academic advising: Does it really impact student success? *Quality Assurance in Education*, 21(1), 7–19.

Appendix

Table A1.
Advising Technologies Utilized at Each Institution

INSTITUTION	TOOL	FUNCTIONALITIES UTILIZED
Fresno State	GradesFirst	<ul style="list-style-type: none"> Raising flags for students struggling academically Sharing notes among advisors
	U.Direct	<ul style="list-style-type: none"> Degree planning (referred to as MyDegreePlan)
	U.Achieve	<ul style="list-style-type: none"> Auditing courses that the student has taken to determine which courses and what number of credits align with the requirements for the student's intended degree
MCCC	JobZology	<ul style="list-style-type: none"> Career assessment and planning (referred to as MyCareerPlan)
	Starfish Connect	<ul style="list-style-type: none"> Scheduling advising appointments Sharing notes among advisors
	Starfish Early Alert	<ul style="list-style-type: none"> Raising flags for students struggling academically Reporting midterm grades
	Ellucian's education planning	<ul style="list-style-type: none"> Degree planning
	Civitas Illume	<ul style="list-style-type: none"> Assigning students a "risk score" based on a predictive analytic algorithm
	Custom tool created in partnership with Blackboard	<ul style="list-style-type: none"> Aggregating GPA, credit completion, and other data and generating a snapshot of students' academic standing, which students can view when logging onto their portal
UNC Charlotte	Starfish Early Alert	<ul style="list-style-type: none"> Raising flags for students struggling academically
	EAB Student Success Collaborative	<ul style="list-style-type: none"> Assigning students a risk score based on a predictive analytic algorithm Sharing notes among advisors

Table A2.
Target Populations for Enhanced Advising

INSTITUTION	TARGET POPULATION
Fresno State	Fresno State targeted students who at the beginning of their second year had earned 15–74 credits and had a 2.0–2.9 GPA. The target population excluded students who already experienced proactive outreach based on participation in high-demand majors, such as nursing, and special programs, such as athletics.
MCCC	MCCC's enhancements focused on degree-seeking continuing students with a low or moderate likelihood of persisting to the next semester based on the college's predictive analytics tool.
UNC Charlotte	UNC Charlotte identified two cohorts of students for enhanced advising. The first cohort included continuing students who at the start of their second year had completed less than 60 credits and had a 2.0 or higher GPA but a low or moderate likelihood of graduating based on the institution's predictive analytics tool. The second cohort included transfer students.

Table A3.
Codebook Excerpts

CODE	DEFINITION
Context	
Context_reforms	Recently implemented changes or plans for upcoming changes to the structure of support services and related technology. Only applies to reforms that are in process or to which people are still adjusting. <i>May be double-coded with "service structure_overview."</i> Does not include the RCT or iPASS.
Capacity for intervention	
Capacity_staff	Participant's description of the institution's capacity to implement the intervention in terms of staffing. Addresses whether the institution had sufficient staff (advisors, graduate students, etc.) to implement the intervention and, if not, what steps the institution needed to take to add staffing.
Capacity_staff time	Participant's description of whether individual staff have enough time to implement the intervention (e.g., advisor description of how long it takes to send out messages and whether the advisor has sufficient time for this task).
Outreach—Risk identification	
Identification_early alert	Description of what early-alert data is conveyed to or referred to the service provider and how this information is conveyed. Includes referrals from peer mentors or other support services for further intervention for flagged students. <i>Must be double-coded with student and service provider type.</i>
Identification_midterms	Description of what midterm data is conveyed to or referred to the service provider and how this information is conveyed. Includes referrals from peer mentors or other support services for further intervention for flagged students. <i>Must be double-coded with student and service provider type.</i>
Outreach—Risk intervention	
Intervention_early alert	Description of whether and how the service provider reaches out to students flagged as at-risk based on early-alert data. Includes referrals of flagged students from other support staff, such as peer mentors. Does not include discussion of early alerts during advising sessions. <i>Must be double-coded with student and service provider type.</i>
Intervention_midterms	Description of whether and how the service provider reaches out to students flagged as at-risk based on midterm exam data. Does not include discussion of early alerts during advising sessions. <i>Must be double-coded with student and service provider type.</i>
Advising session	
Session_logistics	Description of how advising sessions are set up, including whether they are scheduled, drop-in, student-initiated, advisor-initiated, etc. Includes descriptions and perceptions of session length (i.e., long enough or not). <i>Advisor transcripts must be double-coded with student type. Add a memo if unclear about adherence to intervention or intervention design.</i>
Session_materials	Description of materials, resources, or technologies used during the advising session. <i>Advisor transcripts must be double-coded with student type. Add a memo if unclear about adherence to intervention or intervention design.</i>
Session_materials_toolbox	References to whether and how the advisor used the advising toolbox during the advising session. <i>Advisor transcripts must be double-coded with student type. Add a memo if unclear about adherence to intervention or intervention design.</i>
Session_education planning	Description of whether and how multisequence course planning is addressed during the advising session. Includes description of whether a student has utilized education planning technology ahead of the advising session. Also use to capture the absence of discussion of education planning. <i>Advisor transcripts must be double-coded with student type. Add a memo if unclear about adherence to intervention or intervention design.</i>
Session_career planning	Description of whether and how career goals and/or career planning is addressed during the advising session. Also use to capture the absence of discussion of career goals and/or planning. <i>Advisor transcripts must be double-coded with student type. Add a memo if unclear about adherence to intervention or intervention design.</i>
Session_referrals	Description of whether and how referrals were made to other services during the advising session. <i>Advisor transcripts must be double-coded with student type. Add a memo if unclear about adherence to intervention or intervention design.</i>

CCRC 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

212.678.3091

ccrc@columbia.edu

[@CommunityCCRC](https://twitter.com/CommunityCCRC)

ccrc.tc.columbia.edu