



# COLLEGE MENTORING PROGRAMS

FOR STUDENT SUCCESS



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# OVERVIEW OF THE STUDY

## SUMMARY OF THE LITERATURE

Postsecondary education is increasingly important to students' success in life. Unfortunately, the opportunity to attend and complete college is far from equal. Inequities in college access and retention rates between economically advantaged and disadvantaged students are vast. Even if they do attend college, low-income students are more likely to leave higher education with no degree than their higher-income peers (Bailey & Dynarski, 2011; Bound, Lovenheim, & Turner, 2010; Shapiro, Dunbar, Yuan, Harrell, Wild, & Ziskin, 2014).

For students who graduate high school and move on to college, the path that begins in high school and ends with a college degree requires overcoming two main hurdles: getting in and getting through. The former—college access—has long been a priority for educational stakeholders, and current outcome measures suggest considerable progress has been made in this area (Cataldi, Bennett, & Chen, 2018; Choy, 1999). Approximately 40 percent of 18- to 24-year-olds in the United States were enrolled in college in 2017, compared to 35 percent of the same population in 2000 (U.S. Census Bureau, 2018).

However, gaps in the latter measure—college persistence and completion—remain stubbornly large (Bailey & Dynarski, 2011; Martinez-Wenzl & Marquez, 2012; Rosenbaum & Deil-Amen, 2007). Data from the 2019 National Student Clearinghouse (NSC) show that among students who entered college in two-year public institutions in fall 2017, White students had a higher first-year persistence rate (67.1 percent) than Hispanic students (62.1 percent). Black students had the lowest persistence rate (55.3 percent). Graduation rates have failed to keep pace with increases in enrollment, leaving many students without a degree. The NSC also reported that almost 42 percent of students nationally had still not completed a postsecondary degree or were no longer in school six years after enrolling (Shapiro et al., 2019). When accounting for race, ethnicity, or income, these numbers are even lower. Over 52 percent of Black students and 43 percent of Hispanic students from the same cohort had not yet graduated, compared to 28 percent of White students (Shapiro et al., 2019). Additionally, a review of data from the National Center for Education Statistics (NCES) conducted by the Brookings Institution found that the graduation rate after six years for low-income students (those receiving Pell Grant funding) was 51.4 percent, in contrast to 59.2 percent for non-Pell recipients (Kelchen, 2017). First-generation students also experienced disparities. Only 50 percent of first-generation students earned a degree within six years, compared to 64 percent of their peers whose parents went to college (DeAngelo, Franke, Hurtado, Pryor, & Tran, 2011).

To combat this disparity, mentoring programs have helped economically disadvantaged students persist and graduate. Mentoring takes many forms. Typically, mentoring programs assist students by removing specific barriers to graduation. Supports include financial aid advising, emotional support, assistance with administrative tasks, student engagement, and enhancement of social capital.<sup>2</sup> Mentoring delivery methods also vary. They can be face-to-face, virtual, or hybrid, which combines these modes. Mentoring activities can occur on campus, off-campus, or virtually.

Regardless of the form, mentoring is widely supported by empirical research as a powerful tool for helping students achieve success in college (Eby & Dolan, 2015). Mentoring removes barriers by enhancing persistence (Bettinger & Baker, 2011); improving grades (Fox et al., 2010); promoting a greater feeling of connectivity and campus engagement (CCSSE, 2009; Pascarella & Terenzini, 1980); increasing transfer rates from two- to four-year institutions; and increasing degree completion (Bordes-Edgar, Arredondo, Kurpius, & Rund, 2011; Campbell & Campbell, 2007; Crisp, 2011). In particular, college mentoring promotes more equitable outcomes for traditionally underrepresented students, such as first-generation college students, students from low-income backgrounds, and students of color. Mentoring develops the mentee's life skills (Crisp, 2009; Crisp & Cruz, 2009; Kram, 1988; Nora & Crisp, 2007). These skills include student engagement outside of the classroom; personal development (Kuh, 1995; Kuh, Kinzie, Schuh, & Whitt, 2005; Harper, 2005, 2006); confidence and self-esteem (Kram, 1988); and knowledge of the education system, something particularly challenging for students who are first in their families to attend college.

Decades of research have empirically demonstrated mentoring's benefits. Yet, certain aspects of mentoring programs require more study: which particular features are most successful, which students will most likely benefit from it, and at what point in students' education it is most useful. Many programs use multiple strategies simultaneously, and research findings tend to focus on the impact of the package of strategies, not the independent contribution of each one, making it more difficult to pinpoint the most effective program elements. This also makes it hard for programs to assign their scarce resources in ways that will produce the most effective outcomes for students who need it most.

To get a clearer picture of which strategies are most effective, future mentoring research should focus on how program type and size effect student outcomes. Cost-effectiveness analysis would help program designers clarify which levers are most beneficial and economical and to whom. However, to address these areas, we must first better understand how the different components of mentoring programs work to improve student outcomes. This report begins that process by examining three college mentoring programs that exemplify different delivery approaches (face-to-face, virtual, and hybrid).



<sup>2</sup>Social capital includes economic backing and cultural know-how that help an individual successfully navigate a situation or an organization. In higher education, where particular norms and ways of knowing are valued over others, having the right type of social capital, which typically comes with having parents who went to college, helps students figure out what needs to be done and whom they need to address in particular situations. Thus, an individual's access to social capital can be an invaluable resource throughout college as well as the lifespan (Bourdieu, 1973, 1986; Julien, 2015). A lack of social capital is thought to shut out people from traditionally marginalized populations because they don't know how to navigate higher education institutions—for example, knowing who to ask for help with a challenging problem set. Because of this, many mentorship programs prioritize social capital development with their students.

## GOALS, BACKGROUND, AND PURPOSE

NORC at the University of Chicago (NORC), working in partnership with ECMC Foundation, conducted a descriptive study of three college mentoring programs, College Crusade of Rhode Island (face-to-face), Beyond 12 (virtual), and One Million Degrees (hybrid),<sup>1</sup> selected by the modality the mentors interact with students. The purpose of this study is to explore how three different delivery approaches are associated with student persistence and completion outcomes. To accomplish this, we selected three programs that served similar students and had similar programmatic goals. However, it is important to note that while we controlled for some variation through program selection and in the analytic model, all three programs are complex and offer a variety of supports and services in addition to direct mentoring. Therefore, the reader is urged to view the findings from this study as descriptive and exploratory; this a first step in the scientific process, to be followed by more rigorous designs.

## RESEARCH QUESTIONS

Three main research questions guided this study. We address each question and corresponding sub-question in the **Findings** section.

1. What is the state of the current research literature on college mentoring programs?
2. What are the characteristics of the three selected mentoring programs?
  - a. What is the mode of engagement and where does the program take place?
  - b. What are the activities and outputs associated within each program?
  - c. What are the short-, mid-, and long-term outcomes and the connections between the different programs?
  - d. What are the types of mentors available within each program and how frequently do they engage with students?
  - e. What is the perception of program effectiveness (for students, mentors, and administrators)?
3. How do students' outcomes compare among face-to-face, virtual, and hybrid models?
  - a. How do students' outcomes compare among face-to-face, virtual, and hybrid models?

## METHODS

The goal of this study is to describe the association of different mentoring approaches with student outcomes. We do this using a mixed-methods design that collected rich qualitative descriptive data through one-on-one interviews and focus groups with program staff, mentors, students, and alumni, as well as analysis of extant data. Data collection occurred between June 2019 and October 2020.<sup>3</sup> We briefly outline our methods: program selection, data collection, analysis, and a description of study limitations, before describing our findings. A more detailed description of the methods is provided in Appendix B.

<sup>3</sup>Extant data was collected and not impacted by the COVID-19 global pandemic.



### PROGRAM SELECTION

We used a three-step process to identify and select college mentoring programs from over 14 organizations in ECMC Foundation’s College Success portfolio in spring 2019.

#### Step 1: Identify Range of Mentorship Approaches

Although mentoring programs tended to share similar goals, they had different methods for achieving them. They varied across a number of dimensions, including dosage, the types of mentors and coaches they engaged, modality, and content. For example, some programs focused on academic advising while others spent more time on personal growth and increasing social capital by exposing students to career networks.

#### Step 2: Categorize Grantees

To select the programs, we first ensured that they all served similar student populations<sup>4</sup> and had similar goals. Then, we looked across three other dimensions: 1) data availability<sup>5</sup>; 2) types of institutions served (either community colleges or four-year institutions); and 3) program aims determined by their outcomes of interest (e.g., college enrollment/completion). We then selected programs that were as similar as possible on the dimensions outlined above, but that differed in their mode of student engagement (face-to-face, virtual, and hybrid models). While it was impossible to control for all of the different dimensions of mentoring programs, we attempted to keep some key elements as similar as possible in the selection phase (see the Limitations section for a more thorough description).

#### Step 3: Select Programs

From the categorized list of grantees described in Step 2, we reviewed background materials to create a shortlist. We then contacted each program to determine their interest and the extent to which they collected the necessary data.<sup>6</sup> We worked with each eligible organizational point of contact to arrange how the research would be conducted.<sup>7</sup> All programs selected for this study serve underrepresented students of color who are first-generation and economically disadvantaged.<sup>8</sup>



<sup>4</sup>Community college students with increased socioeconomic needs.

<sup>5</sup>Availability of extant data from student cohort years 2015 and 2016.

<sup>6</sup>ECMC Foundation provided a financial stipend to the three organizations for participating in research activities.

<sup>7</sup>After completing grantee selection, NORC researchers developed an interview/focus group protocol, which was reviewed and approved by NORC’s Institutional Review Board to ensure the protection of human subjects.

<sup>8</sup>Pell Grant eligible.

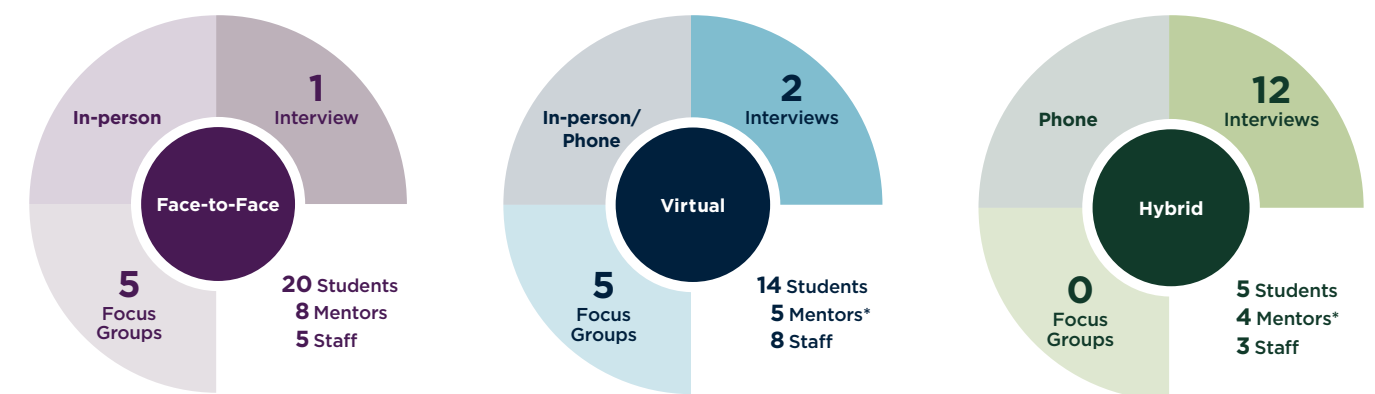
### DATA COLLECTION

In summer 2019 we began collecting qualitative data from the three selected programs, gathering information from each of the three stakeholder groups—students, program administrators, and program mentors/coaches—to learn more about the programs and the individuals’ experiences.

Exhibit 1 summarizes the number of interviews and focus groups conducted for each program. Data collection protocols were developed in consultation with ECMC Foundation, and interview and focus group participants were selected based on their role in the program (i.e., student, coach, mentor, and/or administrator). NORC research scientists conducted hour-long interviews and focus groups. In total, NORC conducted 15 individual interviews and 10 focus groups (ranging from 4 to 10 individuals), speaking with over 70 individuals across the three organizations. Researchers reached saturation during qualitative data collection across the three organizations. The focus groups were assembled by role in the program (i.e., student, coach/mentor,<sup>9</sup> and administrator). Qualitative data were reviewed to identify emerging themes across the organizations.

#### EXHIBIT 1

#### Interviews and Focus Groups Conducted with College Mentoring Programs



\*Note: Beyond 12 (virtual) and OMD (hybrid) refers to mentors as coaches.

In addition, from fall 2019 to fall 2020, NORC collected quantitative student-level data that included students’ academic progress and completion and student demographic variables. These longitudinal data covered a three-year period starting in either 2015 or 2016. Each organization provided these and extant data from NSC. See Appendix B for additional quantitative data details.

<sup>9</sup>Organizations may use different terms, but they refer to the same role.

**ANALYSIS**

To describe the programs’ overall effect on student outcomes, we needed to compare them to a counterfactual, that is, a similar group of students who were not enrolled in one of the mentoring programs. To do this, we compared the persistence and completion rates of each program with national benchmarks weighted to match the make-up of the participating organizations. National benchmarks for persistence are from the NSC Snapshot Report for Persistence, fall 2016 entering cohorts, and benchmarks for completion rates are from the U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), 2015 entry cohort. See Appendix B for more information. Exhibit 2 provides a snapshot of the first-year persistence rates by race and ethnicity to provide a national benchmark.<sup>10</sup>

**EXHIBIT 2**

**National Student Clearinghouse Research First-Year Persistence Rates by Race and Ethnicity**

Race and Ethnicity	Two-Year	Four-Year	TOTAL
Asian	74%	92%	85%
White	68%	87%	79%
Two or more races	62%	85%	74%
Race and ethnicity reported as unknown	59%	77%	71%
Hispanic	63%	82%	71%
Native Hawaiian or other Pacific Islander	62%	76%	70%
Black	56%	80%	67%
American Indian or Alaska Native	57%	71%	63%
<b>TOTAL AVERAGE</b>	<b>62%</b>	<b>84%</b>	<b>74%</b>

Source: National Student Clearinghouse Research Center; Snapshot Report: First-Year Persistence and Retention Rates by Race/Ethnicity, Fall 2016 Entering Cohorts; National Data Tables.

<sup>10</sup>2016 entering cohorts are nearing completion, so national data were not readily available at the time of this research.

Sample sizes from the extant data provided sufficient statistical power to detect meaningful effects in each program type for one or more outcome (see Exhibit 3, minimum detectable effects, persistence or completion of a degree). In this context, we consider a substantively meaningful effect to be equivalent to a greater and statistically significant rate than the weighted national average.

**EXHIBIT 3**

**Sample Sizes and Estimated Minimum Detectable Effect Sizes**

Measure	F2F	Virtual	Hybrid	Clearinghouse Fall 2016 Cohort
<b>Students</b>	<b>712</b>	<b>1,851</b>	<b>927</b>	<b>3,467,475</b>
Enrolled in college	481	1,839	927	3,467,475
<b>Students</b>				
Enrolled in two-year institution	181	454	849	1,496,668
Enrolled in four-year institution	300	1,290	78	1,916,550
Enrollment institution unknown	0	95	0	Not applicable
<b>Minimum detectable effect size</b>				
Persistence or completion of degree	0.22	0.20	0.12	Not applicable

Note: The effect size is a measure of magnitude that the mentoring had on college success. The larger the effect size, the stronger the relationship between mentoring and overall impact of mentoring on their success in college. Note that a randomized control trial was not performed, thus effect size is approximate and cannot be interpreted as causation. The minimum detectable effect size is the effect size below which we cannot precisely distinguish the effect from zero (no effect), even if one exists.



**LIMITATIONS**

As with any research study, there are limitations. We break down the limitations to this study into three categories: extant data, study design, and other success factors. Because we used extant data, some issues with data quality emerged (see Exhibit 4). For example, not all programs collected the same type of data (e.g., hybrid model, certificates earned); others collected self-reported data (e.g., face-to-face model, institution type); and some variables fields were missing (e.g., virtual model, GPA), which impacted comparability across programs. For more details on comparability, see Appendix B. Each program provided outcome data, and although some relied primarily on NSC data, others submitted additional self-reported information that may not have been validated and/or may not match the NSC’s definition of persistence or completion. An administrative recommendation to ECMC Foundation is to require programs to fill in a given list of fields for each student and standardize data collection procedures across all grantees.

In terms of study design, it’s important to note that while we controlled for as much variance as we could, this should not be considered a causal impact study (i.e., a study to measure the effect of the mentoring intervention). This is not an analysis of a randomized controlled trial based on experimental design—it is an exploratory study without randomization. The analysis provides an initial first step in describing and thinking about mentoring across multiple dimensions. We recommend a future study in which participants are randomized to receive different modalities of coaching. Similarly, future studies could collect (and control for) other predictors of success such as students’ high school grade point average (GPA), the number of AP and/or previous college credits, scores on college entrance exams, and ability to pay for college (scholarships, loans, other funding). Unfortunately, this study did not have access to these data.

In addition, although we were only able to examine one outcome measure across all three programs—student persistence—we acknowledge that other factors also contribute to success. Although one-year persistence (i.e., persistence from first year to second year) is a valid and reliable measure of students’ success, it may not capture all dimensions of students’ performance. For example, some programs wish to impact other outcomes: percentage of students transferring to a four-year institution, GPA, college completion rates, or ability to secure a job or graduate program after graduation. We were not able to measure these outcomes, as some fall outside the scope of the mentoring relationship and others did not have consistently reported data associated with them (e.g., GPA). In the future, researchers should consider asking all students to complete a survey before entering the program and every six months to one year thereafter.

Last, many students in the mentoring programs chose to participate. Choosing to participate in a mentoring program may lead to selection bias. The analysis assumes that the students would have had similar outcomes to their peers, although choosing to be involved in a mentoring program could signal a greater intent to complete college than their peers. In addition, there may be other confounding factors not accounted for in the analysis, including available funding to complete school, number of hours worked outside of school time, academic ability, quality of mentoring match, amount of time spent with the mentor, frequency of additional communications, and the presence of additional intervention services offered either by the program or other organizations.

**EXHIBIT 4**

**Limitations and Future Considerations**

Study Limitations	Details	Future Considerations
<b>Extant Data</b>	Programs provided different fields for their students (e.g., Pell eligibility).	Provide a list of fields all programs are required to submit for all students.
	Some fields have a percentage of missing information (e.g., name of school, attendance of public vs. private school, mentoring dosage).	If programs know they are required to provide fields for all students, they may make an effort from the beginning of the program while students are still active participants, instead of trying to fill in holes after they are no longer in the program.
	Some programs provided self-reported information.	Standardize data collection procedures for programs, regardless of program maturity.
	Data fields may not have comparable definitions across organizations.	Create standard definitions that all programs are asked to adhere to.
	Data was provided retrospectively, so some students’ information may not be included.	Require programs to submit a list of IDs for all students twice a year, so that progress may be followed prospectively.
<b>Study Design</b>	The study is not causal, so it is unknown if a similar outcome would occur again with a random group of students with the same program.	Consider randomizing students into groups receiving mentoring via the 3 different modes.
	Very little is known about the applicants at the time of inclusion in the program.	Require data collection of additional characteristics which correlate with academic success.
<b>Other Success Factors</b>	Psychosocial factors may be an indicator of short-term success of mentoring program(s): academic motivation, sense of belonging, depression, obstacles, self-efficacy, stress, support, and college motivation.	Consider asking all students to complete a survey prior to entering the program and every 6 months/yearly thereafter.
	Amount of mentor-mentee contact may predict success of the program.	Consider requiring programs to include a count of days that mentors and mentees meet per month.
	The quality of the relationship may predict success of the program.	Consider asking all students to complete a survey every 6 months to track the relationship they have with their mentor. Also consider collecting data on mentors to better understand the diversity of staff/ representation reflecting student participants.
	Persistence and AA completion are not the only possible academic outcomes across all programs.	Consider requiring data collection related to college acceptance/enrollment, percentage of two-year degree students transferring to a four-year institution, GPA, college completion, ability to secure a job after graduation, and ability to be admitted to a graduate program after graduation.
	Some outcomes extend past the mentoring relationship (e.g., graduation, getting a job).	Consider increasing the length of time for funding; require programs to survey students 3, 4, or 6 years after the start of the program.



# FINDINGS

The findings are organized by our three research questions, starting with a review of the existing literature, which provides an understanding of the range of existing mentoring approaches and helps to uncover gaps in the literature. Then, we narrow in on delivery models and outcomes of our selected programs, describing how our findings may address gaps in the literature and be of use to policymakers and practitioners.

Results from our literature review suggest there was wide support for mentoring, but no uniform definition of what counts as college mentoring. Despite varied definitions of college mentoring, one theme consistently emerged—regardless of program delivery or format, the relationship between mentor and mentee played a central role in program satisfaction for mentors and mentees.

In other words, a good relationship that is consistently maintained between mentor and mentee was vital to successful outcomes.

Ideally, the mentor would provide the mentee with the agency, support, and confidence to solve problems on their own so that they can succeed in college.

Findings from the literature scan helped to provide context for how the three selected mentoring programs operated and how their programs contributed to student academic outcomes. Among the selected programs, we delineated a range of additional characteristics that supported positive student outcomes. First, the most effective programs were financially stable, offered comprehensive supports, and maintained frequent, close communication with students. Second, we found that the program format mattered. Virtual and hybrid programs increased student persistence in two-year programs and virtual models provided substantial positive impacts on two-year degree program completion, based on comparisons to the average student by program length and student race/ethnicity.

Taken together, this report takes important steps towards contributing to a definition of mentoring programs by cataloguing the characteristics of three purposefully distinct college mentoring programs. Understanding the characteristics by modes may potentially inform the design of future college mentoring programs.



## WHAT WE KNOW ABOUT COLLEGE MENTORING PROGRAMS

Research widely supports mentoring as a positive means for college success (Bettinger & Baker, 2011). Mentoring practices have been used to improve college graduation rates for economically challenged students and students of color (Shapiro et al., 2019; Kelchen, 2017). Mentoring is also associated with additional positive outcomes for students, including improved grades (Fox et al., 2010); greater feeling of connectivity and campus engagement (CCSSE, 2009; Pascarella & Terenzini, 1980); and reduced hardships associated with transferring between institutions (Bordes & Arredondo, 2005).

Although researchers and those in the field agree about the benefits of mentoring, there is no consensus about how to define mentoring (Boyle & Boice, 1998; Hall & Sandler, 1982; Haring, 1999; Wunsch, 1994; Zachary, 2000). In fact, Crisp and Cruz (2009) cite over 50 different ways of describing mentoring in the literature. This range of definitions stems from the myriad variations of services provided, mentee/mentor relationships, and mentoring methods, each aimed at removing specific barriers to student success. Programs may focus on systematic guidance or provide emotional support, facilitate peer networking, enhance social capital, or provide practical training. Some mentoring programs may also provide financial support. Programs also use different ways of engaging students in a variety of settings. The absence of a shared definition due to such widespread variation hinders practitioners' ability to replicate successful models or point to specific programmatic features that yield best outcomes.

Developing a universally recognized definition of mentoring would go a long way in helping students succeed, because researchers and program designers could replicate successful models and point to specific program features that yield the best outcomes. Study after study tells us that the relationship between the mentor and mentee is important for supporting successful outcomes such as college persistence and completion.

Mentorship can take on a range of formats. The mentor may be a peer, near-peer,<sup>11</sup> counselor or coach, faculty member, volunteer, or informal mentor found within the student's personal sphere. Mentors and mentees may be paired based on shared interests and/or demographics. However, it is not only the format that matters. Rather, the nature of the relationship is the crucial element for bolstering students' outcomes. A successful relationship emerges when the mentor provides the mentee with the agency and confidence to independently solve problems and elevate their own achievement or productivity (Otto, 1994; Wunsch, 1994). The benefits of a successful match can extend for years, enhancing student engagement in school throughout the student's undergraduate experience.

“This program was a gift for me to sit with other people that were also struggling and to get wrap-around support. There were other single parents, other adults, young people, scholars of all ages and backgrounds. But we all were there struggling to the same goal, to finish college.”—STUDENT, HYBRID PROGRAM



<sup>11</sup>The near-peer mentoring model matches students with other students or recent graduates who are typically one to five years older, have more experience, and share some unifying factor (Bos, Berman, Kane, & Tseng, 2012; Jackson & Evans, 2012). They may come from similar backgrounds or possibly share the same academic goals.

Research has also shown that well-funded, high-touch/high-frequency programs that use wraparound mentoring supports see significant positive outcomes, such as increased graduation rates (Scrivener, Weiss, Ratledge, Rudd, Sommo, & Fresques, 2015). This is especially true in mentoring relationships where participants connect emotionally, or where mentors facilitate students' feelings of integration within their institution.

“Closed mouths don’t get fed. This program taught me how to ask for help. The advice I received is information I wish I had known earlier.” —STUDENT, HYBRID PROGRAM

Further, programs that provide support beyond college enrollment by setting goals—such as completion—offer more significant long-term returns (Deming, 2017).

In sum, college mentoring has demonstrated benefits. However, the intricacies of these benefits are harder to disentangle. Programs vary in dosage, duration, and intensity. Many programs use multiple strategies simultaneously, and research findings tend to focus on the impact of the package of strategies, not the contribution of each one independently. This study helps researchers better understand how the different components of mentoring programs improve student outcomes. This report begins that process by examining three college mentoring programs—College Crusade of Rhode Island (face-to-face), Beyond 12 (virtual), and OMD (hybrid)—that exemplify different delivery approaches. More research is needed to fully understand the variation in programs, especially as it contributes to cost effectiveness or taking a program to scale. These types of data are not prevalent in other existing studies and the additional information can provide insight on impact.

### CHARACTERISTICS OF MENTORING PROGRAMS

This section compares characteristics across the three programs: College Crusade of Rhode Island, Beyond 12, and OMD. A brief overview of their characteristics follows, and additional details are included in Appendix B.<sup>12</sup>

#### SELECTED PROGRAMS

Aligning with the variability we discovered in the literature, the programs we studied also varied along multiple dimensions. After a thorough review of mentor programs funded by ECMC Foundation, we chose three to serve as exemplars of different mentoring delivery models. Additional information is provided in the Appendices.

Exhibit 5 compares the three programs and details their program purpose; how they engaged students (either face-to-face, virtual, or hybrid); when the intervention occurred (grades); who they focused on (demographics); characteristics about how they selected mentors; the activities the programs engaged in; and the location of the program. Exhibit 5 provides a complete summary of the components of each mentoring program. Each program serves a specific type of student, but the activities provided are universally beneficial. Exhibit 6 summarizes the mentors by selected programs. Two of the three programs used near-peers. Exhibit 7 details the frequency of engagement between students and mentors by selected programs. The frequency ranges from weekly to monthly interactions.

<sup>12</sup>Throughout the remainder of the report, the type of mentoring modality is referenced (e.g., face-to-face, virtual, or hybrid modes instead of the organization's name). The descriptive findings in this report are specifically about the three organizations included in this study.

### EXHIBIT 5

#### Overview of Three Selected Grantees

<b>Face-to-Face</b>	<b>Purpose</b>	College access and college completion
	<b>Grades</b>	End of high school <sup>14</sup> through college
	<b>Demographics</b>	Low-socioeconomic status (SES), first-generation students of color
	<b>Mentors</b>	Near-peer, full-time
	<b>Activities<sup>13</sup></b>	Mentoring, financial literacy, tutoring
	<b>Location</b>	Rhode Island

<b>Virtual</b>	<b>Purpose</b>	College completion
	<b>Grades</b>	End of high school to first two years, but can extend to all four years of college
	<b>Demographics</b>	Low-SES, first-generation students of color
	<b>Mentors</b>	Near-peer, first-generation, full-time
	<b>Activities<sup>13</sup></b>	Mentoring, financial literacy
	<b>Location</b>	National (with sites in Oakland, CA and Atlanta, GA)

<b>Hybrid</b>	<b>Purpose</b>	Community college completion and transfer to four-year college
	<b>Grades</b>	Two-year college <sup>15</sup>
	<b>Demographics</b>	Low-SES, first-generation students of color
	<b>Mentors</b>	Volunteer
	<b>Activities<sup>13</sup></b>	Mentoring, financial literacy, tutoring, professional development, financial aid
	<b>Location</b>	Chicago

<sup>13</sup>Exhibit 5 displays more details on support provided to students.

<sup>14</sup>The face-to-face program supports students across a range of grades, but data for this study focus on outcomes from their college mentoring program.

<sup>15</sup>Only serves community college students.



EXHIBIT 6

Types of Mentors by Grantee

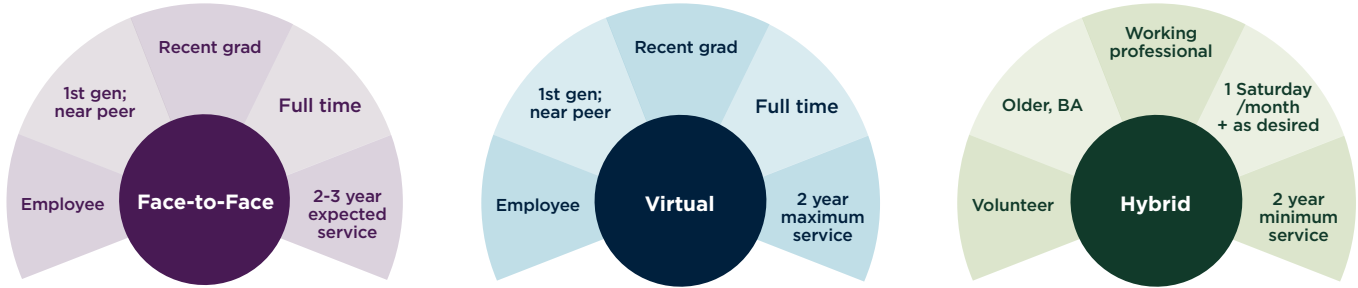


EXHIBIT 7

Frequency of Engagement Between Students and Coaches/Mentors

Face-to-Face	Virtual	Hybrid
1-1 MEETINGS		
Bi-weekly coaching sessions	Chat with coaches every 2 weeks (text, email, video)	1/month coaching sessions + as necessary, as needed sessions with program coordinator <sup>16</sup>
GROUP SESSIONS		
1/month group advising	N/A	1/month "Saturday Sessions"
OTHER TYPES OF ENGAGEMENT		
Support college visits/ college fairs	As needed via text, email	As needed via text, email, or F2F

<sup>16</sup>The Program Coordinator is a full-time employee who helps manage the caseload of students at each participating campus. Duties include student engagement, data management, curriculum facilitations, and recruitment.



Exhibit 8 provides information on fiscal support. All three programs offered at least one type of financial support.

**EXHIBIT 8**

**Additional Supports**

Face-to-Face	Virtual	Hybrid
FISCAL		
Scholarship support during college <sup>17</sup>	Emergency academic-related support (e.g., transportation support)	Up to \$1,000 annually in performance-based stipends and up to \$250 enrichment grants or last dollar scholarship
TYPES OF ADVISING		
Academic, career, fiscal, personal	Academic, career, fiscal	Academic, career, fiscal, personal

<sup>17</sup>Being phased out of future budgets.

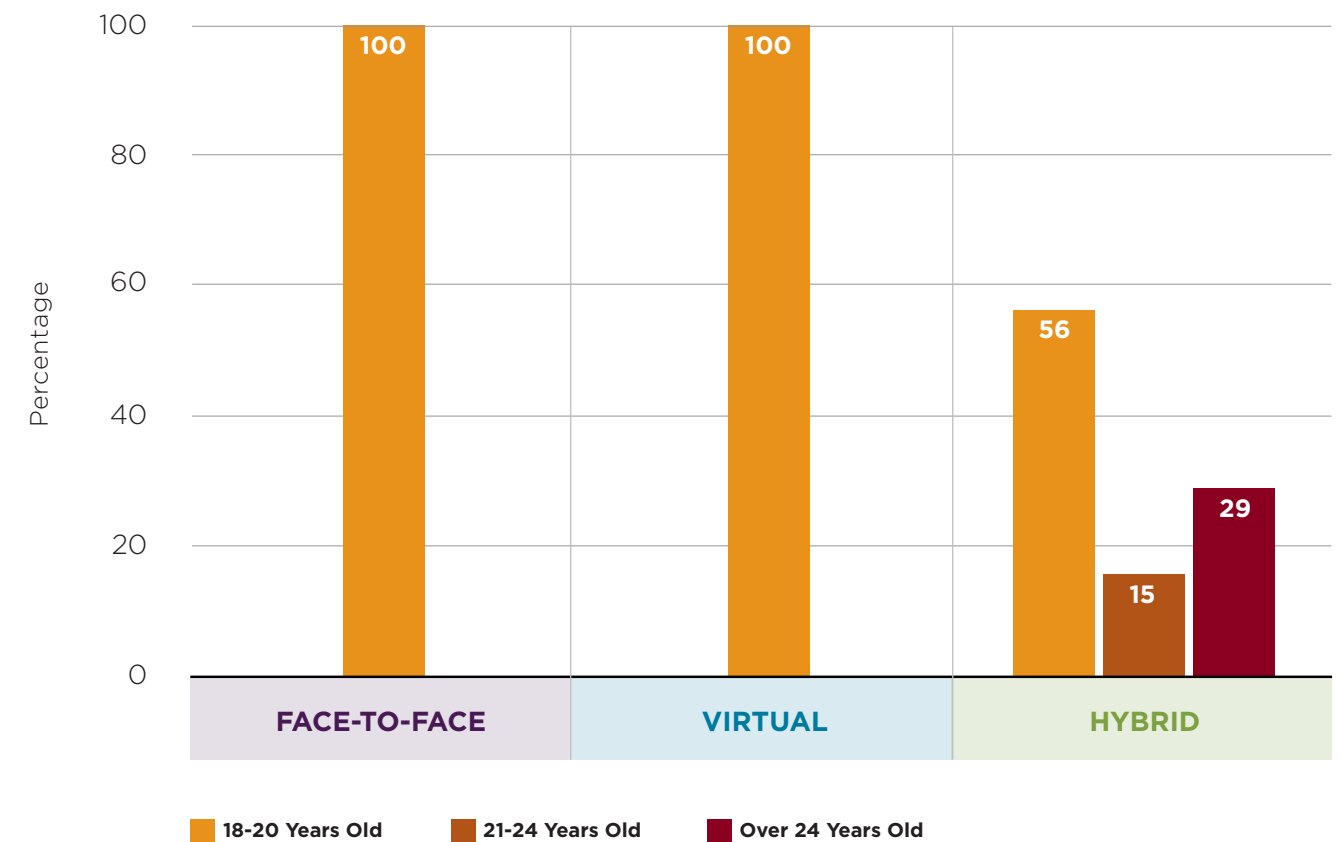
**DEMOGRAPHICS**

All programs selected for this study serve underrepresented students of color who are first-generation and economically disadvantaged. Exhibit 9 provides an overview of student participants across the programs. While selected programs varied by the modality of mentoring, they had a few similarities on demographic dimensions: the majority of students were ages 18-20, female, and either Black or Hispanic/Latinx.

**AGE.** Students' age at the start of the program ranged from less than 18 years to over 50 years, with the majority younger than 20 (88 percent). Face-to-face reported on students starting at the time of college initiation (18-20 years old, 100 percent), yet the program begins working with students when they are in middle school and high school. Virtual students were predominantly young adults (21-24 years old, 100 percent). Out of the three programs, hybrid students' age varied the most, as they served emerging adults (18-20 years old, 56 percent); young adults (21-24 years old, 15 percent); and older students (age 24 or more, 29 percent).

**EXHIBIT 9**

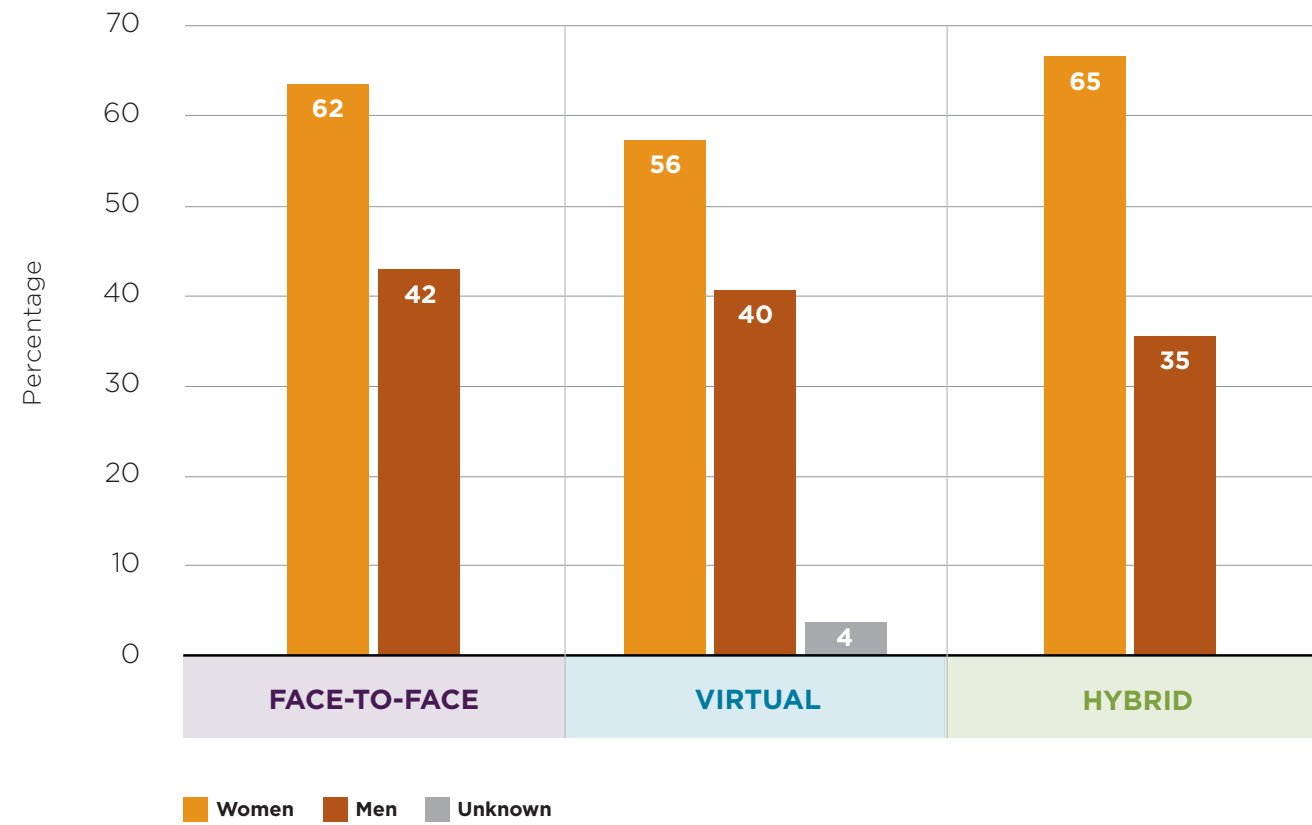
**Age**



**GENDER.** Fifty-eight percent of students across the programs were women and 39 percent were men. Over half of the students in each program were women (62 percent, 58 percent, and 65 percent, respectively). Hybrid served the smallest percentage of men (35 percent).

EXHIBIT 10

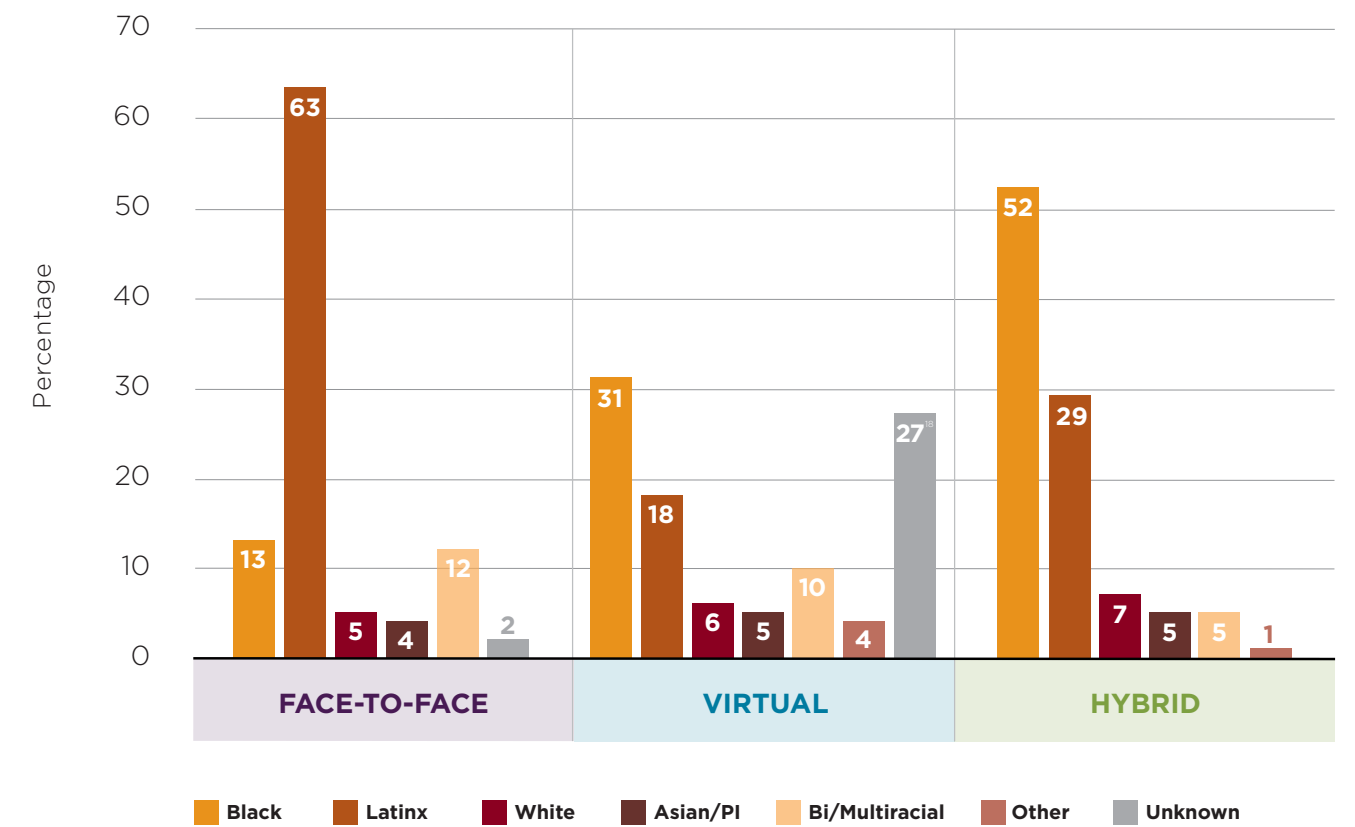
Gender



**RACE/ETHNICITY.** Ninety-four percent of students with known race and ethnicity were predominantly minorities with Black (38 percent) and Hispanic/Latinx (35 percent) representing the largest percentage of students. Face-to-face students were predominantly Hispanic/Latinx (63 percent) or Multiracial (12 percent). A large percentage of virtual students' race was unknown (27 percent) and of those with known race, students were predominantly Black (42 percent) and the program served the largest percentage of White Non-Hispanic/Latinx students (8 percent). Over half of hybrid students were Black (52 percent) and almost a third were Hispanic/Latinx (29 percent).

EXHIBIT 11

Race and Ethnicity

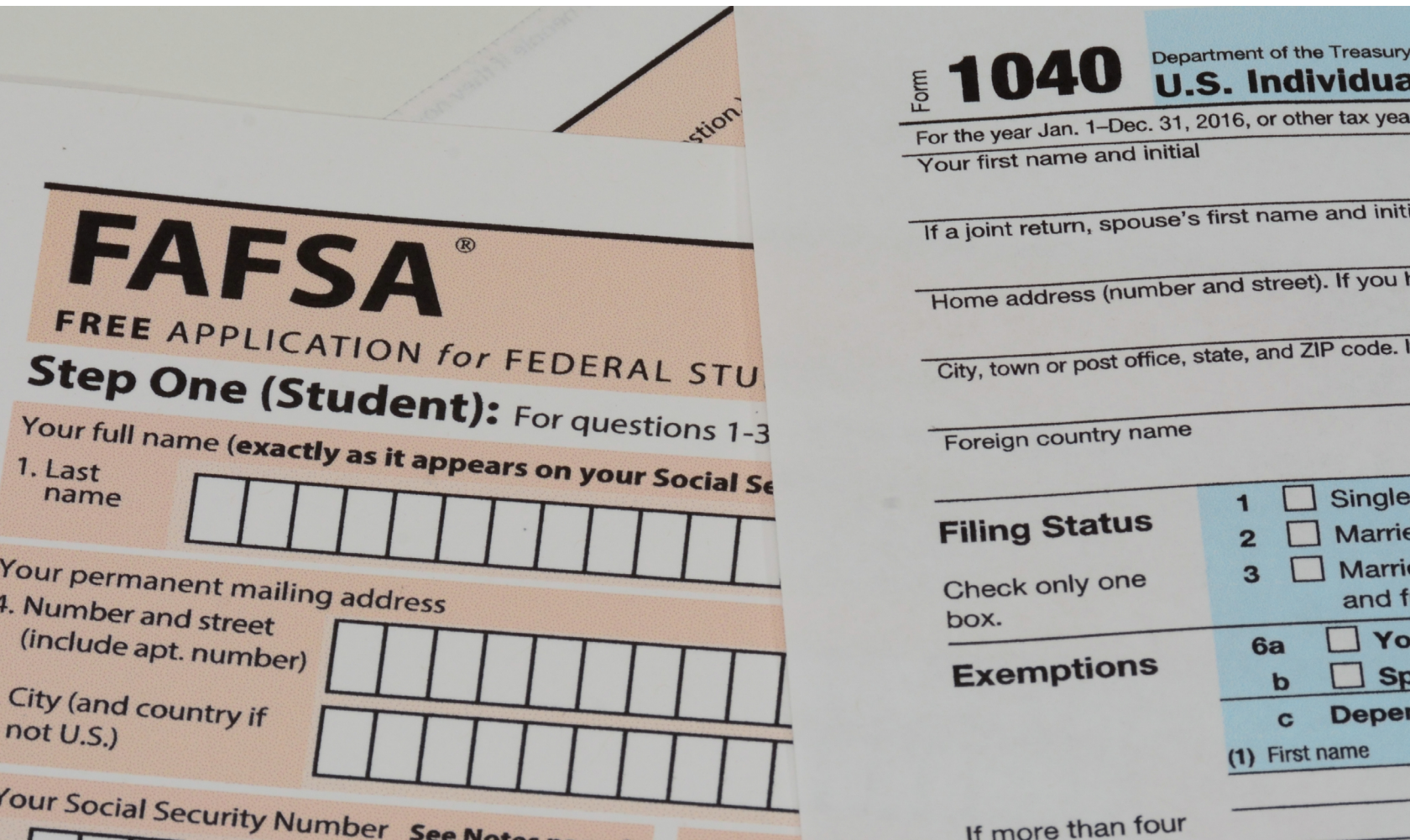


<sup>18</sup>Because of data privacy and security, the virtual model anonymizes student records once the student is no longer being served (either when the partner ends their relationship or after six years, whichever comes first). If a student received coaching, their demographics are linked to outcomes including NSC data. This linked information is stored for a longer period of time without personally identifying information. Students who were not coached have been de-identified or anonymized, and thus limited racial information is available.

**SOCIOECONOMIC CHARACTERISTICS AND FIRST GENERATION STUDENTS**

While all three programs addressed socioeconomically disadvantaged students' advancement in postsecondary education, the programs varied in the ways they assessed socioeconomic need,<sup>19,20</sup> (see Exhibit 12). This section provides data on the number of students who qualified for free lunch prior to entering college, who are Pell eligible,<sup>21</sup> and who are first-generation.

Virtual and hybrid determined students' parents' experiences in college. Sixty percent of virtual and hybrid students would be the first generation in their families to graduate from a four-year college. Virtual students were often eligible for free lunch, with 71 percent qualifying. Free lunch programs are available to students through high school. Alternatively, the hybrid program reported on Pell eligibility. The vast majority of hybrid students were Pell eligible with 71 percent reporting eligibility. Pell Grant eligibility<sup>22</sup> is determined after the completion of the Free Application for Federal Student Aid (FAFSA) and if a student demonstrates financial need based on expected family contribution and cost of attendance. There are no set income levels for Pell eligibility.



<sup>19</sup>Federal guidelines determine eligibility.

<sup>20</sup>The evaluator has determined that variations do not alter findings and that the reader is being provided variations as a courtesy.

<sup>21</sup>The face-to-face program did not provide socioeconomic characteristic data because they did not have the data available.

<sup>22</sup>For the students in the 2015, 2016 cohorts.

As Exhibit 12 shows, both virtual and hybrid focus on mentoring underserved students. This is evident for the virtual program in the numbers of its students who qualify for free lunch and are first-generation college students. OMD's commitment can be seen in their focus on students who are eligible for Pell grants and first-generation. The percentage of first-generation college students may have been even great than shown (i.e., data is self-reported); approximately 20% of all virtual and hybrid students were missing information for this characteristic.

**EXHIBIT 12**

**Socioeconomic Characteristics**

Characteristic	Details	TOTAL <sup>†</sup>		Virtual		Hybrid		p value*
		Count	%	Count	%	Count	%	
		2,778	100	1,851	100	927	100	NA
First-Generation College	Yes	1,658	60	1,103	60	555	60	0.46
	No	556	20	365	20	191	21	<0.001
	Unknown	564	20	383	21	181	20	<0.001
Qualify for Free Lunch	Yes	1,323	71	1,323	71	NA	NA	NA
	No	358	19	358	19	NA	NA	NA
Pell Eligible	Yes	657	71	NA	NA	657	71	NA
	No	270	29	NA	NA	270	29	NA

\*Note: Chi-square tests for independence across programs were performed on socioeconomic characteristic distributions; p values of 0.05 or less are statistically significant.

<sup>†</sup>Note: Sociodemographic data were not available from the face-to-face program.

### STUDENTS SERVED BY INSTITUTION TYPE

All three programs serve students in community colleges, but as students' progress through their academic careers, all three programs mentored students in both two-year and four-year institutions. However, the percentage of students served by institution type varied (see Exhibit 13). The face-to-face (42 percent) and virtual (70 percent) programs served students predominantly in four-year institutions. By contrast, the vast majority of hybrid students started college in a two-year institution (92 percent). National benchmark comparisons for persistence and completion rates are available for those with a known institution type. Thus, 299 face-to-face students and 107 virtual students were excluded from research questions pertaining to persistence and college completion. The missing data could potentially account for students who did not enroll in college.

#### EXHIBIT 13

Students by Institution Type, Counts and Percentages by Grantee (2015–2016)

Institution Type	TOTAL <sup>†</sup>		Face-to-Face		Virtual		Hybrid		p value*
	Count	%	Count	%	Count	%	Count	%	
	3,490	100	712	100	1,851	100	927	100	NA
Two-Year	1,414	41	111	16	454	25	849	92	<0.001
Four-Year	1,670	48	302	42	1,290	70	78	8	<0.001
Unknown	406	12	299	42	107	6	0	0	<0.001

\*Note: Chi-square tests for independence across programs were performed on starting institution type. The missing data could potentially account for students who did not enroll in college. distributions; p values of 0.05 or less are statistically significant.

### HOW STUDENTS' OUTCOMES COMPARE AMONG FACE-TO-FACE, VIRTUAL, AND HYBRID MODELS

The previous sections detailed characteristics of the different mentoring programs. This section begins to unpack how those different model characteristics impact student outcomes. To estimate the overall impact of the programs as well as their modality, we calculated the effect of different models on student outcomes by comparing mode-specific estimates with national estimates. Analyses are performed by cohort year as well as all years. See the Methods section as well as Appendix B for analytic details including data collection, measurements, and analytic methodology.

The national estimates were weighted to reflect the demographics of each program, which allowed for a better comparison. A positive and statistically significant effect indicates inclusion in a mentoring program predicts outperforming the national average.



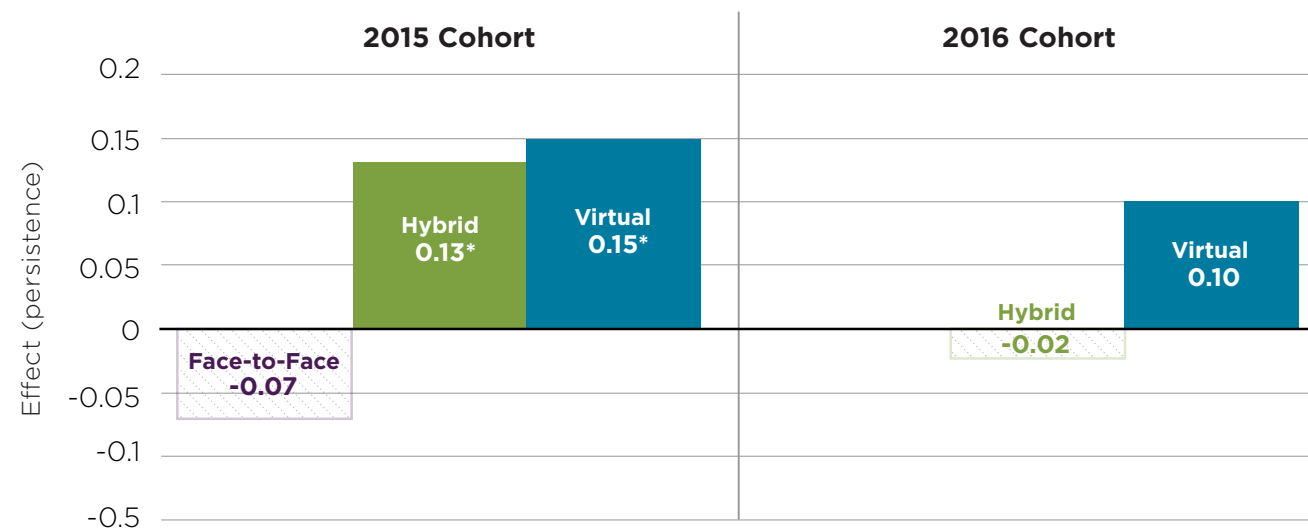


### FIRST-YEAR PERSISTENCE IN TWO-YEAR PROGRAMS

**Student persistence in two-year programs using virtual and hybrid delivery modes is associated with increased in persistence rates.**<sup>23</sup> The 2015 cohort students exhibit a higher student persistence compared to a similar group<sup>24</sup> of students. Exhibit 14 shows a positive and statistically significant effect; this finding indicates students in virtual and hybrid mentoring programs outperformed students from the NSC comparison group (i.e., the national average). This demonstrates the effectiveness of a particular intervention (i.e., hybrid and virtual mentoring), relative to the comparison group (e.g., virtual vs. NSC comparison and hybrid vs. NSC comparison). The face-to-face model does not have enough evidence (i.e., data) to demonstrate that it offered a similarly meaningful impact. We did not find statistically significant effects in year two (2016 cohort) of the program. Finally, we also found statistically significant differences in persistence by institution type, race, and ethnicity (see Appendix B for more information, summarized by cohort year). This information can help practitioners and policymakers who are interested in supporting programs in the current COVID-19 education environment as well as after, when programs are deciding which elements they will keep virtually, as well as those parts of their program that they decide makes more sense in-person.

EXHIBIT 14

Effect Size Differences for Persistence at Two-Year Institutions



\*p value <0.05

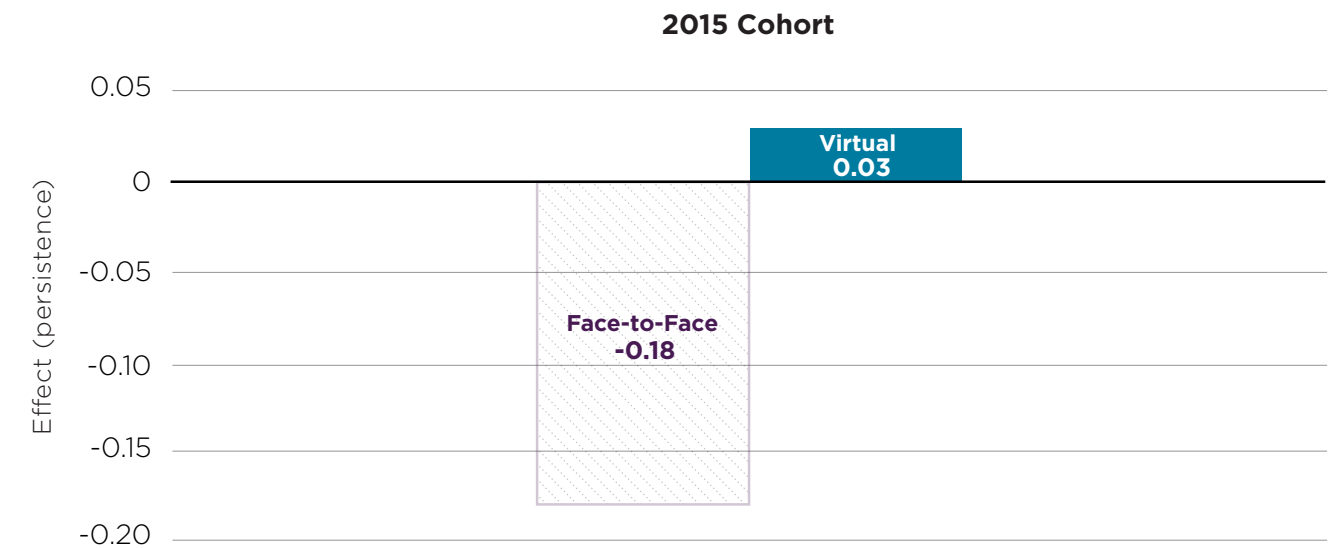
Note: The face-to-face model does not have enough evidence (i.e., data) to demonstrate that it offered a similarly meaningful impact.

### FIRST-YEAR PERSISTENCE IN FOUR-YEAR PROGRAMS

**Unable to find impacts on persistence in four-year degree programs.** Student first-year persistence at four-year institutions by mentoring modality was inconclusive. Although the virtual program has positive impacts on student persistence in four-year institutions in the 2015 cohort year when compared to a similar group<sup>23</sup> of students, the impact was small and would have required a large sample size to have enough evidence that it offered a meaningful impact (2015 = 559, 2016 = 442). Similarly, the impact, regardless of year, was also too small to have enough evidence that it offered a meaningful impact. The face-to-face model does not have enough evidence that it offered a meaningful impact on persistence in a four-year program. Exhibit 15 indicates no statistically significant effect on persistence in student first-year persistence at four-year institutions by mentoring modality when compared to a similar group<sup>23</sup> of students.

EXHIBIT 15

Effect Size Differences for Persistence at Four-Year Institutions



Note: The hybrid model in this research focuses primarily in community college settings, so there is not sufficient data for the 2015 and 2016 cohorts.



<sup>23</sup>NSC defines persistence as continued enrollment (or degree completion) at any higher education institution—including one different from the institution of initial enrollment—in the fall semesters of a student's first and second year. NSC excludes students with previous college enrollment experience prior to the entering cohort year unless it was a high school dual enrollment. Persistence in the hybrid program, however, includes students with previous college enrollment experience.

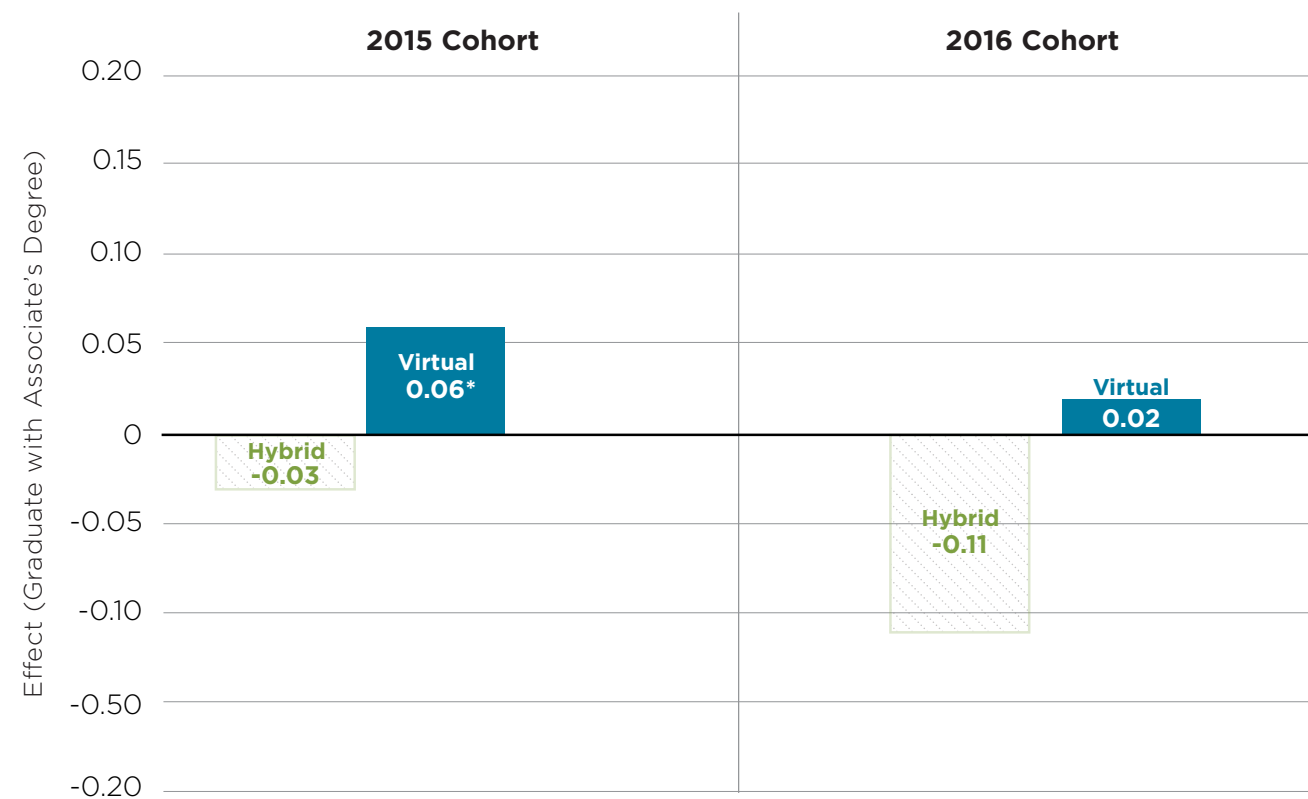
<sup>24</sup>NSC comparison group is students from virtual program vs. NSC comparison, students from hybrid vs. NSC comparison, and students from face-to-face vs. NSC comparison. The data are weighted by program, cohort, starting institution, race, and ethnicity/Latinx.

**COMPLETED TWO-YEAR DEGREE PROGRAM OR TRANSFERRED**

**Virtual models are associated with positive impacts on two-year degree completion or transfer to another institution.** The virtual model shows higher student two-year degree completion or transfer rates in cohort 2015 compared to a similar group<sup>25</sup> of students. Exhibit 16 shows a positive and statistically significant effect; this indicates students in the virtual mentoring program outperformed students (e.g., earned two-year degrees or transfers at higher rates) than those in the NSC comparison group. This is an important finding for practitioners and policymakers who are interested in increasing transfer or completion rates. We did not find statistically significant effects in year two (2016 cohort) of the program. The hybrid model had insufficient evidence that it offered a meaningful, positive impact on two-year institution completion or transfers. The face-to-face model did not provide data on two-year program completion rates as they were not available at the time of this research.

**EXHIBIT 16**

**Effect Size Differences for Two-Year Degree Completion or Transfer**



\*p value <0.05

Note: The face-to-face model did not provide data on two-year program completion rates as they were not available at the time of this research.



<sup>25</sup>NSC comparison group. Weighted by program, cohort, starting institution, race, and ethnicity/Latinx.

# CONCLUSIONS AND CONSIDERATIONS FOR FUTURE RESEARCH

## CONCLUSIONS

We set out to identify promising practices in college mentoring by examining how the different elements in programs work. Our research literature scan yielded many studies supporting mentoring as a way for students to succeed in college—especially for those who have been traditionally underrepresented in higher education (Eby & Dolan, 2015). The benefits of mentoring programs on participating students include increased persistence (Bettinger & Baker, 2011); better grades (Fox et al., 2010); a greater feeling of connectivity and campus engagement (CCSSE, 2009; Pascarella, 1980); and fewer transitional hardships (Bordes & Arredondo, 2005). Yet, despite the robust literature, questions about how mentoring programs work, which students they work for, and when they work best remain. To fill in these gaps, we studied three college mentoring programs to learn more about how different methods of engagement can influence college persistence for low-income, first-generation and students of color.

We described the characteristics of the mentoring programs across multiple dimensions (program maturity; types of students served; types of institutions served, whether community colleges or four-year institutions; and program goals determined by their outcomes of interest such as college enrollment and completion), and estimated the overall effect of each program on students. There is no standard definition for mentoring and as a result, the term encompasses a wide variety of programs. Each of the three programs we chose focused on a different delivery mode: face-to-face, virtual, and hybrid. For the purposes of this research, mentoring was not defined; rather, researchers sought to better understand how the different components of mentoring programs work to improve student outcomes by examining three college mentoring programs that exemplify the different delivery approaches.

Our study made several important findings that have implications for ECMC Foundation's college success agenda going forward. The biggest was that virtual and hybrid programs in this study increase student persistence in the first year of two-year programs, and virtual models provided substantial positive impacts on two-year degree program completion. Higher levels of year-to-year persistence provide greater opportunities for transfer and/or college completion. This is of great importance now more than ever, as students and institutions are impacted by COVID-19, and many are participating in virtual courses and programming. The findings from this study highlight the positive role these two modalities have on persistence in two-year programs and completion, and demonstrate the value add of this type of programmatic investments for funders. Moreover, as the nation seeks to educate a greater number of students who have traditionally been marginalized in educational environments, virtual and hybrid mentoring programs show promise. Second, program staff and students report a good relationship between mentor and mentee is the foundation for successful outcomes. Ideally, the mentor gives the student agency, support, and confidence to solve problems on their own so that they can succeed in college.

This information is useful for other mentoring programs interested in enhancing near-peer mentoring programs. Third, our analysis determined that the most effective programs are well-funded, offer comprehensive supports, regularly collect student outcome data, and maintain frequent, close communication with students. Less well-funded programs are not able to offer a menu of comprehensive supports. The data reveal this type of comprehensive support is possible in a virtual or partially virtual environment. Fourth, a generally recognized definition of mentoring would help students succeed because researchers and program designers could replicate successful models and identify specific program features that produce the best outcomes.



“My confidence level grew significantly. I’m able to be professional, accountable, resourceful, and a timely person. Those are things we touched on in a lot of those mentoring sessions. I realized I’m all of those things and not lacking in any area. I’m resourceful. I know how to reach out when I need help. I’m going to use every strategy to be successful. I learned in this program, it’s ok to ask for help.” —STUDENT, VIRTUAL PROGRAM

We have yet to understand which specific elements in wraparound programs contribute to its success, which has eluded researchers who want to replicate or grow successful programs. Contributing to the problem is lack of a common definition for “mentoring” as well as a way to classify “evaluation.” Also, few studies evaluate program efficacy based on dose, intensity, and duration of the mentoring program, which can result in conflicting findings. In addition, there is a lack of research addressing the cost benefit or return on investment of mentoring programs. Likewise, we know little about how program size may affect outcomes, which limits knowledge about the potential for program scalability. Finally, virtual mentoring has received scant attention from researchers and with the COVID-19 pandemic, there is increased reason to pay attention to virtual mentoring.

### CONSIDERATIONS FOR FUTURE RESEARCH

We recommend that future research first focus on developing an operational definition of mentoring that has clearly stated goals, as well as a system for evaluating program effectiveness that would enable us to make rigorous comparisons between specific mentoring approaches. Without these measures, it is difficult to make decisions about program funding and program size. Future research could isolate the dose, intensity, frequency, and especially the duration of mentoring programs. While research has empirically demonstrated mentoring’s benefits, we need more research to identify which particular features are most successful, which students will most likely benefit from it, and at what point in students’ education it is most useful. Many programs use multiple intervention strategies at the same time, but we need more research to help us understand the independent contribution of each intervention (e.g., isolating dosage, intensity, frequency) to pinpoint the most effective program elements of mentoring programs.

Another area ripe for study is research into the cost benefit or return on investment (ROI) of mentoring programs. Without formal cost-benefit or ROI research, it can be hard for programs to assign their scarce resources in ways that will produce the most effective outcomes for students who need it most. This research is exceptionally useful for measuring success over time and can help determine interventions that offer benefits for the students and organization (e.g., interventions with large academic benefits for the students that can be offered at a low cost for the mentoring organization).

Finally, future research should study the intervention strategies used by virtual mentoring, considering the fast growing use of technology within contemporary mentoring programs. While there is a vast array of literature and corresponding research on face-to-face mentoring, virtual and hybrid programs have not been studied at the same rate. With prior research showing that well-funded, high-touch/high-frequency programs that use wraparound mentoring supports see significant positive outcomes, such as increased graduation rates (Scrivener, Weiss, Ratledge, Rudd, Sommo, & Fresques, 2015), more research is needed to understand if virtual programs offer the same impact. This will be especially important for students experiencing technology disparities.



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#### Other Resources from this Research

##### Executive Summary for Study Report

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##### Literature Scan

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# APPENDIX A

## PROGRAM DESCRIPTIONS

### FACE-TO-FACE

College Crusade of Rhode Island is a place-based program, established in 1989 as Rhode Island's federal GEAR UP Program partner. It currently provides 4,000 first-generation, low-income students in Rhode Island middle and high schools with college preparatory support. The program is structured around four tenets: academics, social/emotional learning, career education, and postsecondary support. College Crusade of Rhode Island improves students' academic achievement by providing one-on-one coaching, reviewing college applications, guiding students through the application process, and increasing family engagement.

College Crusade of Rhode Island developed its college mentoring program in the last 10 years to build on the work of its middle and high school programs, and to guide students through college graduation.

Success in both programs relies heavily on mentor-student relationships. Students develop that relationship over time, ideally from sixth grade through college graduation. The program recruits recent college graduates who were also first-generation, low-income students to serve as mentors. Much of the recruiting occurs through word-of-mouth and many advisors are program alumni. The program has evolved over its history and maintains a strong presence in the community.

### VIRTUAL

Beyond 12 is a national virtual mentoring program that provides two independent services to school-district clients: a longitudinal student tracking platform and personalized student coaching. The program's mission is to increase college graduation rates of low-income, first-generation, and historically underrepresented students by helping high schools track their students' postsecondary trajectories. Currently, Beyond 12 coaches over 2,000 students on 180 college campuses, and tracks 51,000 students. By 2025, Beyond 12 aims to reach one million students annually, primarily through its tracking services. Beyond 12 offers mentoring and student tracking services to high schools for a contracted period of time (e.g., first two years of college), which is typically renewed annually. Depending on the contract, some districts may only opt for data tracking services. The tracking service includes a data warehouse that enables Beyond 12 to follow students across time and geography. Beyond 12 enables schools without the capacity to follow their graduates to better understand graduates' academic and career pathways. These schools receive regular reports on their students, including information on grades and attendance. Information of past student successes and challenges can potentially support schools' continuous academic improvement efforts and inform their curricular decisions.

Schools that opt into both mentoring and tracking services are provided with coaches that touch base regularly with students through Beyond 12's propriety app, MyCoach. Communication occurs via text, chat, phone call, email, video, or any other technology-based method. Coaches are matched with students at the end of high school, and begin providing support upon high school graduation. Beyond 12 provides regional mentor-mentee matches, meaning that Beyond 12 will attempt to pair a student attending college in Boston with a coach who grew up in or around Boston. Coaches are purposely selected to have similar backgrounds as the students they serve. Many came from low-income families and/or are first-generation college students.

Coaching for Beyond 12 does not solely refer to homework help or locating resources for the student. While these supports may occur through the communication, coaches are trained to identify data points from the student,<sup>25</sup> which are inputted into the Alumni Tracker to provide a more robust image of the student's academic successes and needs.

### HYBRID

One Million Degrees (OMD) is an intensive hybrid program whose mission is to empower community college students to "succeed in school, in work, and in life." OMD provides holistic, wraparound services designed to support the whole student: academic support, financial support, personal coaching, and professional development. Currently, OMD serves 800 scholars across 10 campuses in the Chicago area.

The standard OMD program offers one-on-one coaching, access to campus-based program coordinators, monthly weekend programming, and select professional development opportunities such as networking events. OMD expects students—referred to as scholars—to take advantage of these offerings, including attending monthly Saturday coaching sessions, visiting with their program coordinator, and maintaining a 2.5 grade-point average. Scholars must check in with their assigned coaches at least once a month and meet with their program coordinators<sup>26</sup> regularly.<sup>27</sup> As full-time OMD staff members embedded within the college campuses, program coordinators oversee academic support services and campus-specific guidance, and connect scholars to any additional resources they may need.

OMD actively recruits potential scholars into the program through advertising around campus and online through institutional websites. Alumni scholars speak in classes and attend college activity fairs to make sure that potential scholars know about the program. To enroll, scholars apply online, participate in a get-to-know-you conversation, and provide a writing sample. During the interview, scholars are classified as high- or low-need. Scholars who may face more challenges to complete (e.g., historical difficulties with school, full-time jobs, mental health issues, other instabilities) are considered high-need and receive increased attention and communication.

OMD matches scholars with coaches based on students' career interests, personality, personal background, and personal interests, relying on volunteer coaches who are typically mid- to late-career individuals because they have more established networks through which to expose their scholars to career paths and increase scholars' social capital. OMD trains their coaches in the Socratic method, pushing them to ask their scholars probing questions rather than solve the scholars' problems. This approach helps coaches learn more about their scholar and creates bonds of trust. It also prevents coaches from pressuring the scholar with their own aspirations. Coaches commit to speaking with the scholars at least once a month, but typically do so more often.

<sup>25</sup>Students are aware of the ongoing data collection.

<sup>26</sup>OMD program coordinators are full-time staff while coaches are volunteers.

<sup>27</sup>The actual number of times a scholar contacts their program coordinator varies based on student need and current program success. Students who are struggling may require additional check-ins. Therefore, "regularly" is an individually determined amount set by the program coordinator to support the specific needs of that student.

## SUMMARY OF SELECT BENEFITS ACROSS MENTORING PROGRAMS

### MENTORING

The primary purpose of mentoring and coaching is to give students support from people who have had similar experiences and can serve as role models. Some programs deploy mentors across entire cohorts while others target specific students. Many of these programs use a curriculum that guides student-mentor interactions. Programs like OMD (hybrid) employ coaches who are much older than students and do not come from similar backgrounds, but have similar career interests, so they can connect students with their professional networks. Alternatively, College Crusade of Rhode Island (face-to-face) and Beyond 12 (virtual) use college-educated, near-peer mentors to deliver their college success curriculum.

### TEACHING FINANCIAL LITERACY

Programs offer various ways to engage with fiscal issues. All three programs teach financial literacy in some form (e.g., how to set-up a bank account, prepare personal budgets, balance bank accounts). While financial literacy spills over into college preparation, it is not synonymous with financial aid. Rather, financial aid education includes completing FAFSA applications and understanding financial aid packages. Both Beyond 12 and College Crusade of Rhode Island offer FAFSA supports to students, which increases the likelihood that students will enroll and persist in college (McKinney & Novak, 2013).

### PROVIDING ACADEMIC SUPPORT

Most mentoring programs do not provide academic support. College Crusade of Rhode Island and OMD are two of the few programs that include academic supports. College Crusade of Rhode Island provides tutoring. OMD provides academic tutoring to students who request it. Much of the academic support comes from inquiring about students' studies rather than offering tutoring. Students from both OMD and Beyond 12 reported that their coaches checked in with them regarding their academic and emotional well-being.

### BUILDING COLLEGE KNOWLEDGE

Most students who qualify for a college mentoring program have parents who did not attend college. Whether in high school, college, or in transition, these students may lack knowledge about attending college, such as how to match interests with potential schools and to identify the necessary courses and grades required to attend specific programs. Once in college, these students may lack the unwritten expectations of how to succeed. They may not know how to engage faculty, study for exams efficiently, or manage their time. They also may lack broader career networks to support them in career building. While some programs focus explicitly on building the social supports and exposure to higher education (e.g., through college visits or fairs), other programs embed this information within their broader program.

### COLLECTING AND USING DATA

All programs collect data and produce metrics on their program outcomes. Comprehensiveness of these data varies, with Beyond 12 by far the most comprehensive. Beyond 12's Alumni Tracker, a longitudinal student tracking platform, provides partnered pre-college institutions with quantitative and qualitative data about their students' postsecondary progress. Coaches collect data during check-ins that occur roughly twice a month. Collected data include demographics, student transcripts, student performance records, GPA, enrollment, persistence, degree earned/transfer status, socioemotional health, hours spent working outside of school, resume, study abroad involvement, study skills, living situations, and program communication.

College Crusade of Rhode Island collects limited data for each student, including enrollment into a college and persistence. Additional supplemental information includes enrollment date, name of school, and type of school. However, because of privacy rules within school districts, accessing school-based data is challenging. College Crusade of Rhode Island staff do not have access to school records, so they only know about student grades based on second-hand student reports. This means that they likely are unaware if one of their students is failing unless the student informs them.

OMD collects demographics, Pell and first-generation status, persistence, credentials earned, and graduation rates. While the program coordinators have access to student grades and attendance, this information is kept confidential. Volunteer coaches, like those at College Crusade of Rhode Island, only have the information provided by students. Similarly, coaches felt that access to this information would help them identify points of struggle for their scholars and address the issue before failure.





# APPENDIX B

## ADDITIONAL DETAILS ON METHODS

### DATA

All programs were asked to directly provide **the education records of students enrolled in their college mentoring program** to enable NORC to perform research services. Specifically, programs were notified that we would perform a programmatic evaluation of specific activities/components to better understand the effect of those elements, including:

- Investigate the ability to separate the effects of the mentoring program from other unobserved factors such as motivation.
- Explore the extent to which mentoring programs predict outcomes for program students controlling for baseline measures and other covariates.
- Explore the extent to which socioeconomic status and other factors predict outcomes.
- Compare the outcomes for each program.
- Use the natural variation in dose and intensity across the programs to explore the extent to which these factors impact the outcome, controlling for participant attributes. Dosage data was used for one grantee, and it was inconclusive.

NORC requested de-identified student-level data elements from each program, including:

- Cohort
- Demographics
  - Gender
  - Race
  - Ethnicity
  - Age
  - SES
  - First generation
  - Pell Grant recipient
  - Veteran's status
- Outcomes
  - Time to degree/transfer
  - Credits per term
  - Persistence
  - College completion
  - Employment

The resulting data included information about students enrolled in each grantee's program from 2015 and 2016 cohort years. Students include adults age 18 years and older. Nuances between grantee data provided are outlined below.

### COLLEGE CRUSADE OF RHODE ISLAND (FACE-TO-FACE)

College Crusade of Rhode Island provided records for students entering in cohort years 2015 and 2016. Each student's record was provided once. Data included Student ID, cohort years (2015; 2016); college enrollment outcome (Immediate = Yes or No); college persistence (Persistence = Yes or No); college name, institution type; gender; race/ethnicity; and age. College Crusade of Rhode Island did not provide year(s) in college. Institution type was not consistent within the same institution and was thus updated by NORC based on the institution name. Additionally, a large percentage of the records were lacking a college name and institution type, most likely due to the information not being provided by the students.

### BEYOND 12 (VIRTUAL)

Beyond 12 provided records for participating students from cohort years 2015 and 2016 with college enrollment dates ranging from fall 2015 through fall 2020. Student records were provided if they were assigned to coaching in 2015 or 2016, regardless of the level of coaching they received. Beyond 12 excluded:

- 49 records that were temporary assignments;
- 107 students who opted out of data collection;
- Anonymized students who graduated in their first year because it's unknown if they were assigned to coaching; and
- Students who signed up for coaching who were randomly assigned to coaching, but did not have valid contact information and thus could not be coached.

Student outcome data were provided by a combination of students, partners, institutions, and the NSC. Data included student ID, cohort years (2015-2016; 2016-2017); cohort term (fall, winter, spring, summer, and year); school name; school type; enrollment status (full-time, part-time, not enrolled, unknown, graduated); GPA; and other details including number of credit hours. Beyond 12 cautioned NORC against analyzing GPA or credit hour information, as it was incomplete and thus not a reliable source for analytic purposes. Student demographic information was provided, including high school graduation year; qualifying for free/reduced lunch; first-generation college student; gender; race/ethnicity; age (originally calculated based on date of birth and 10/19/2020, NORC updated to be based on the age of the student during their cohort year); and frequency of coaching sessions. Beyond 12 tracks the number of coaching sessions received by all participants and deems students as "coached" once they receive two or more sessions.

### ONE MILLION DEGREES (HYBRID)

OMD provided college experience records for participating students with college experience dates ranging from 6/10/1992 to 12/20/2019 for cohort years 2015-2016 and 2016-2017. Each student's records were provided for either no college experience or up to six experiences. Data included student ID, cohort years (2015-2016; 2016-2017); OMD outcome (0 - Unknown; 1 - Associate Degree; 2 - Certificate; 3 - Transferred; 4 - Persisting; 5 - Dropped; Deceased; <blank> = unknown); transfer status (1 - Bachelor or; 2 - Persisting; 3 - Withdrawn; 4 - Never Transferred; <blank> = unknown); graduated (150 percent of time); graduated 200 percent time; college/university; school type (community college, four-year university/college); date earned credits required to transfer; gender; race/ethnicity; date of birth; Pell eligible; U.S. veteran; parent/guardian 1 and 2 education (four-year college or university degree, AA or certificate, high school/GED, less than high school, some college, high school, or GED; Other/Unknown; <blank>); full-time

student status (0; 1; <blank>); start date; graduation date; credential earned (advanced certificate, associate degree, bachelor's degree, basic certificate, master's degree, required credits to transfer, <blank>); education when applying to OMD (current community college student, graduating high school senior, returning adult, <blank>).

### ADDITIONAL DATA SOURCES

NORC used national persistence rates from the NSC Snapshot Report for Persistence, fall 2016 entering cohorts. Persistence rates by race and ethnicity were not available for the fall 2015 entering cohort at the time of analysis. We used national completion rates from the U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), 2015 entry cohort.

## MEASUREMENTS

### DEMOGRAPHICS

Respondent sociodemographic characteristics in this study included gender (male, female, additional identity, unknown); age; race/ethnicity (Black or African American, Hispanic/Latinx, Non-Hispanic White, White, Asian/Pacific Islander, Bi/Multiracial, Other, Native American, unknown); first generation to attend college (yes, no, unknown) available for Beyond 12 (virtual) and OMD (hybrid) only; qualifying for free lunch (yes, no, unknown) available for Beyond 12 and OMD only; Pell eligible (yes, no, don't know/unsure) available for OMD only.

### ENROLLMENT IN COLLEGE

This is defined as enrollment at a higher education institution. The definition is intended to match with the Current Population Survey results. If an explicit college enrollment indicator (Yes/No) was not provided, one was created using the start date of college. College enrollment counted if the dates at the higher education institution were in the year of the student's mentorship or later. Thus, college experiences that ended before a student's cohort year were excluded. An explicit enrollment indicator (Yes/No) was provided and used for the virtual model. To align with other benchmark providers (e.g., NCES, NSC), the virtual model excluded uncompleted terms<sup>28</sup> when calculating matriculation. The face-to-face model provided a matriculation indicator and did not provide term-specific details. The hybrid model provided term-specific details from which an indicator was created by NORC using the start date of college (two-year or four-year program) and the graduation or last known end date for the degree. CPS college enrollment data are referenced by NCES. CPS is based on sample surveys of the civilian noninstitutionalized population. College enrollment statistics are based on survey replies about whether the person was attending or enrolled in school and the grade or school or year of college. Interviewers were instructed to count as enrolled anyone who had been enrolled at any time during the current term or school year, except those who had left for the remainder of the term. The college student did not need to be working toward a degree, but he/she must have been enrolled in a class for which credit would be applied toward a degree.

<sup>28</sup>An incomplete term is one with a Term Enrollment Status of "Dropped Out," "Withdrawn," or "Leave of Absence."

### PERSISTENCE

Persistence is continued enrollment (or degree completion) at any higher education institution, including one different from the institution of initial enrollment, in the second year of a student's postsecondary studies. The definition is intended to match with the NSC persistence report. To align with benchmark providers (e.g., NCS, NSC), the virtual model excludes uncompleted terms<sup>29</sup> when calculating persistence. The face-to-face model provided a persistence indicator and did not provide term-specific details. The hybrid model provided StudentTracker term-specific details. NORC created an indicator using the start date of college (two-year or four-year program) and the graduation or last known end date for the degree.

NSC calculates persistence based on reporting schools. NSC defines persistence as continued enrollment (or degree completion) at any higher education institution — including one different from the institution of initial enrollment—in the fall semesters of a student's first and second year. The NSC Snapshot Report for Persistence does not rely on StudentTracker data but rather the matriculation and persistence data directly from the schools. This ensures the National Student Clearinghouse Research Center does not count a student in a cohort if they withdrew before the add/drop deadline and does not count a student as having persisted if they withdrew before the add/drop deadline. NSC reports persistence by beginning degree intensity (full-time, part-time, non-degree seeking, and overall). In this report NSC persistence represents the overall persistence rate. International students are included in NSC estimates.

NSC excludes students with previous college enrollment experience prior to the entering cohort year unless it was a high school dual enrollment. OMD persistence, however, includes students with previous college enrollment experience.

### COMPLETED TWO-YEAR PROGRAM OR TRANSFER TO A FOUR-YEAR INSTITUTION

Students were labeled as having completed a two-year program or transferred to a four-year institution if the student graduated with one or more associate degrees or credits for transfer were labeled as requested and transfer was listed as complete, regardless of the number of years after starting the two-year program. Associate degrees and transfers were counted if the date requested was in the year of the student's mentorship or later. Thus, if a student requested a transfer in 2014 and started the mentorship program in 2015, the degree from 2014 would be out of scope and data on this degree are not included in the analysis. Students who did not transfer to a four-year program and were still in school, or for whom graduation information was not provided were assigned to the value of "Noss". The CPS reports rates based on the starting institution (two-year) and the outcome within three years after entry. Completion and transfer rates were summed to create a single measure.

<sup>29</sup>An incomplete term is one with a Term Enrollment Status of "Dropped Out," "Withdrawn," or "Leave of Absence."

## INSTITUTION TYPE

Students were labeled as beginning enrollment in a two-year institution if their first college enrollment experience at the time of entering the mentorship program was at a two-year institution. Similarly, students were labeled as beginning enrollment in a four-year institution if they were enrolled in a program at a four-year public or private institution as their first college enrollment experience at or after the time of entering the mentorship program. This definition closely mirrors the NSC definition used to calculate persistence and CPS completion rates by institution type.

## ANALYSIS

We considered associations, covariates, and differences significant across all statistical tests at the  $p < 0.05$  level. The data analysis for this report was generated using SAS® 9.4 software, 2002-2012 by SAS Institute Inc. Cary, North Carolina, USA. Graphics were generated using Open Source R software.

## CHARACTERISTICS OF MENTORING PROGRAMS

Chi-squared tests were used to compare distributions of demographics, socioeconomic characteristics, and students served by institution type across grantees.

## HOW CHARACTERISTICS OF DIFFERENT MODELS IMPACT OUTCOMES

### First-Year Persistence in Two-Year Institutions

We found evidence that students in the participating programs who enrolled in two-year institutions outperformed the national average in first-year persistence. We used a mixed-methods design that explores both the outcome measures (RQ2, RQ3) and the reasons why those program features may have had an impact (RQ3). Data collection occurred between June 2019 and October 2020 and included one-on-one interviews and focus groups with program staff, mentors, students, and alumni, as well as analysis of extant data.

Weighted Z-tests were used to compare the proportion of students who persisted in two-year programs between each program and the national average. Wald confidence intervals were calculated using the relative difference between the program proportion and NSC proportions. The relative difference was calculated using the following formula:

$$\hat{d}_i = \frac{(\hat{p}_i^j - \bar{p}_i)}{\bar{p}_i}$$

Where

$d_i$  = relative difference of persistence in two – year institutions for program  $i$

$\hat{p}_i^j$  = proportion of students who persisted for mode  $i$  within Cohort(s)  $j$  in two – year institutions

$\bar{p}_i$  = weighted proportion of students who persisted in the US in two – year institutions; using weights for program  $i$ .

### First-Year Persistence in Four-Year Institutions

We were unable to find impacts on persistence in four-year institutions based on the time period of the extant data. To estimate the overall impact, we calculated the effect by comparing mode-specific estimates with national estimates. The effect is the relative difference between the outcome and the weighted national estimate for a single mode. A positive and statistically significant effect indicates there is enough evidence to support the finding that the program's students outperformed the national average. National estimates of persistence are from the NSC Snapshot Report for Persistence, fall 2016 entering cohorts. Persistence rates were not available by race and ethnicity for entry year 2015 at the time of analysis.

Statistical weights were applied to national estimates prior to analysis. Weights were applied as the inverse of inclusion within the program. We adjusted the weighting variables according to their conditional distributions for all variables (program type, race and ethnicity, starting institution, and cohort). The ratios applied for the four-year persistence analysis are not equal to the ratios applied for the two-year persistence analysis.

Weighted Z-tests were used to compare the proportion of students who persisted in four-year programs between each program and the national average. Wald confidence intervals were calculated using the relative difference between the program proportion and NSC proportions. The relative difference was calculated using the following formula:

$$\hat{d}_i = \frac{(\hat{p}_i^j - \bar{p}_i)}{\bar{p}_i}$$

Where

$d_i$  = relative difference of persistence in four – year institutions for program  $i$

$\hat{p}_i^j$  = proportion of students who persisted for mode  $i$  within Cohort(s)  $j$  in four – year institutions

$\bar{p}_i$  = weighted proportion of students who persisted in the US in four – year institutions; using weights for program  $i$ .

### Completed Two-Year Degree Program

Virtual models provided substantial positive impacts on two-year degree program completion. To estimate the overall impact, we calculated the effect by comparing mode-specific estimates with national estimates. The effect is the relative difference between the outcome and the weighted national estimate for a single mode. A positive and statistically significant effect indicates there is enough evidence to support the finding that the program's students outperformed the national average. National estimates for the completion rates are from the U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), 2015 entry cohort.

Statistical weights were applied to the national estimates prior to analysis to resemble the program's target population. The statistical weights applied for the analysis are equal to the ratios applied for the two-year persistence analysis.

Weighted Z-tests were used to compare the proportion of students who completed their degree in a two-year program between each program and the national average. Wald confidence intervals were calculated using the relative difference between the program proportion and NSC proportions. The relative difference was calculated using the following formula:

$$\hat{d}_i = \frac{(\hat{p}_i^j - \bar{p}_i)}{\bar{p}_i}$$

Where

- $\hat{d}_i$  = relative difference of completion in two – year institutions for program  $i$
- $\hat{p}_i^j$  = proportion of students who completed their degree for mode  $i$  within Cohort( – year institutions
- $\bar{p}_i$  = weighted proportion of students who completed their degree in the US in two – year institutions; using weights for program  $i$ .

### ADDITIONAL ANALYSIS

#### Enroll in College

To estimate the impact, an analysis was performed comparing student enrollment rates with the Census Bureau’s estimates of college enrollment in the Current Population Survey (2016). The analysis was performed by race and ethnicity.

#### Potential Influences

An additional analysis examined the potential influence that a student’s socioeconomic or demographic characteristics could have on college enrollment, persistence, and two-year completion rates. A stepwise multivariate logistic regression analysis was used by mode to compare:

- Students who enrolled in college with students who did not enroll in college
- Students who persisted with students who did not persist

Samples were controlled for cohort, age, gender, race/ethnicity, historically disadvantaged students, and/or institution type.

### ADDITIONAL ANALYSIS RESULTS

#### ENROLL IN COLLEGE

Enrollment in college analytic results are only reported for College Crusade of Rhode Island (face-to-face), as OMD (hybrid) did not provide college enrollment information and Beyond 12 (virtual) enrollment rates were near perfect (99 percent), which may indicate that the selected students were already enrolled in college. College Crusade of Rhode Island reported 68 percent of all students enrolled in college, which is 38 percent greater than the national average.

### EXHIBIT 17

#### Face-to-Face College Crusade of Rhode Island Enrolled in College – Number of Students and Rate

Characteristic	Details	Face-to-Face		National Average	
		College Crusade of Rhode Island		Enrollment Rate	Difference
		Total Students	Enrollment Rate		
Race/Ethnicity	Black	62	68%	35%	33%
	Hispanic/Latinx	297	66%	37%	29%
	White	23	64%	42%	22%
	Asian/Pacific Islander	17	65%	63%	2%
	Bi/Multiracial	66	75%	38%	37%
	Other/Unknown	16	72%	Unknown	NA
<b>Total</b>		<b>481</b>	<b>68%</b>	<b>38%</b>	<b>30%</b>

### POTENTIAL INFLUENCES

#### Enroll in College

A stepwise multivariate logistic regression analysis was performed on college enrollment rates among College Crusade of Rhode Island (face-to-face) students. Females were more likely to enroll in college and students age 18 were less to enroll in college.

### EXHIBIT 18

#### Face-to-Face College Crusade of Rhode Island Enrolled in College – Adjusted Odds Ratios

Characteristic	Details	Adjusted Odds Ratio	p value <sup>a</sup>
Gender	Female vs. Male	1.4	<0.001
Age	18 vs. 19+	0.3	<0.001

<sup>a</sup>Wald chi-squared p value

**Persist**

A stepwise multivariate logistic regression analysis was performed on students who enrolled in college to determine possible influences on one-year persistence rates. Students whose mentoring program had a face-to-face component were less likely to persist than students with only a virtual component. Females were more likely to persist (AOR = 1.3,  $p < 0.05$ ) as were Asians (AOR = 2,  $p < 0.05$ ). Students in a two-year program were less likely to persist (AOR = 0.8,  $p < 0.05$ ) and Black students were less likely to persist (AOR = 0.7,  $p < 0.05$ ).

**EXHIBIT 19**

**Persist - Adjusted Odds Ratios**

Characteristic	Details	Adjusted Odds Ratio	
		OR	p value
Mode	Had a Face-to-Face Component	0.5	<0.05
Gender	Female vs. Male	1.3	<0.05
Starting Program Type	Two-Year vs. Four-Year	0.8	<0.05
Race/Ethnicity	Black	0.7	<0.05
	Asian	2.0	<0.05





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### ABOUT NORC

NORC at the University of Chicago is a nonprofit research organization that delivers reliable data and rigorous analysis to guide critical programmatic and policy decisions. Since 1941, NORC has conducted groundbreaking studies, created and applied innovative methods and tools, and advanced principles of scientific integrity and collaboration. NORC conducts research in five main areas: Economics, Markets, and the Workforce; Education, Training, and Learning; Global Development; Health and Well-Being; and Society, Media, and Public Affairs. For more information, visit [www.norc.org](http://www.norc.org).

### ABOUT ECMC FOUNDATION

Based in Los Angeles, CA, ECMC Foundation is a national foundation working to improve postsecondary outcomes for students from underserved backgrounds. It is one of several affiliates under the ECMC Group enterprise based in Minneapolis, MN, which together work to help students succeed.

The Foundation makes investments in two focus areas—college success and career readiness—and uses a spectrum of funding structures, including strategic grantmaking and program-related investments, to fund both nonprofit and for-profit ventures. For more information, visit [www.ecmcfoundation.org](http://www.ecmcfoundation.org).

