Massachusetts Resource Allocation and Expansion Feasibility Study

Early College Program Report

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Introduction

Background

College and career readiness remains a critical policy priority for states and the nation. The future of work requires students to demonstrate the necessary skills and competencies often earned through postsecondary education and work-based learning. Massachusetts, already a national leader in educational outcomes for its residents, has responded to this need by setting a postsecondary degree attainment goal of 70% of the state's working-age population (Massachusetts Department of Higher Education, 2020). As of 2019, approximately 57% had attained an associate's degree or higher (62% if short-term credentials are included), an 11-percentage-point increase of its overall attainment rate from 2009 (Lumina, 2022). However, the data also show significant attainment gaps by race and ethnicity. For example, there is an 18.5% attainment gap between White and Black residents, a 32% attainment gap between White and American Indian or Alaska Native residents, and a 31% attainment gap between White and Hispanic residents (Lumina, 2022).

Beyond setting goals and standards, Massachusetts has adopted a number of strategies to ensure the college and career readiness of their students with an intentional focus on reducing attainment gaps and prioritizing underrepresented students. These programs expose students to postsecondary opportunities early and provide work-based learning to simultaneously increase academic competencies as well as real-world skills applicable in the workplace.

Massachusetts launched the High-Quality College and Career Pathways (HQCCP) initiative in 2017, which seeks to provide all students with access to an increased number of Early College (EC) and Innovation Pathways (IP) programs. This initiative was implemented by the Massachusetts Department of Elementary and Secondary Education (DESE) and the Massachusetts Department of Higher Education (DHE). EC and IP programs were created with the intention to provide high school students, especially underrepresented students, with access to valuable experiences that could make a lasting impact on the next stage of their lives and that could be an important, equalizing opportunity for diverse groups of high school students within the Commonwealth (DESE, 2022). Since 2017, DESE and DHE have funded and maintained EC programs in 39 high schools and IP programs in 52 high schools (DESE, 2022). In the coming years, DESE and DHE hope to expand the number of EC and IP programs they offer.

Early College Programs

Within EC programs, high schools partner with institutions of higher education (IHEs) and provide secondary students the opportunity to enroll in postsecondary courses and earn

recognized college-level credits (Hoffman et al., 2021). These partnerships are beneficial to students and can foster a seamless transition from high school to college, with the intended goals to increase the likelihood that a student will enroll and succeed in college upon high school completion. Massachusetts's EC programs share five foundational design principles: equitable access targeting students underrepresented in higher education; academic pathways that are well integrated and aligned with college and career; robust student support in both academics and advising; connections to career through workplace and experiential learning experiences; and high-quality and deep partnerships between high schools and colleges (Forman & Ngongi-Lukula, 2021).

Massachusetts EC programs were intentionally designed to reduce postsecondary education gaps by reducing the financial burden of a postsecondary degree and increasing the number of traditionally underserved students and first-time college students who earn a postsecondary degree (Williams & Hunt, 2022). By enrolling in Massachusetts EC courses, students can earn a minimum of 12 transferable college credits and up to an associate degree by the time they graduate from high school, generally at no cost to themselves (Hoffman et al., 2021).

Cost Analysis of EC Programs

Within the past 5 years, Massachusetts has commissioned several studies to understand the impacts of its EC programs as well as the challenges associated with maintaining and expanding program offerings (e.g., ICF, 2020a; ICF, 2020b). Prior studies have found that EC programs are associated with positive student outcomes such as academic motivation, knowledge of college and career opportunities, being career ready upon high school completion, and enrolling in postsecondary education (ICF, 2020b). Additionally, research has shown that Latinx students who are enrolled in Massachusetts' EC programs enroll in college at a rate 23 percentage points higher than their peers, and Black EC students enroll in college at a rate 22 percent higher than their peers (Forman & Ngongi-Lukula, 2021). Despite these promising findings, some EC programs report not having met their enrollment targets, and the number of newly participating high schools tapered in a post-pandemic environment. According to staff and administrators involved with EC programs, financial and staffing resources are the largest barriers to scaling these programs (ICF, 2020a). As DESE and DHE look to expand access to EC programs to support even more students, a key component will be to better understand the cost-related factors and funding mechanisms that support or hinder expansion of these programs.

Purpose

DESE contracted with the American Institutes for Research (AIR) to conduct the Massachusetts Resource Allocation and Expansion Feasibility Study to inform efforts to expand access to EC and IP programs across the Commonwealth. The objective of the study is to analyze the factors

contributing to cost and the sources of funding that either facilitate or obstruct the growth of these programs. This report includes findings related to Massachusetts' EC programs.

Three research questions guided the study of EC programs:

- **Program Typology.** How can EC programs be categorized to examine costs and funding?
- **Program Costs and Funding.** What are the costs and funding mechanisms for current EC programs?
- **Program Implementation and Scaling.** What cost and funding factors may influence the expansion of EC programs?

Considerations and Limitations

The primary goal of this study was to identify the cost and scaling factors that could inform plans for the expansion of EC programs in Massachusetts. The AIR research team used a cost-feasibility approach to identify the resources used to implement EC programs as well as their related costs. This approach can inform discussions about the expansion of the EC program given its focus on implementation and scaling costs. This approach, however, does not incorporate program quality dimensions like a cost-effectiveness or benefit-cost approach might.

The study approach also relies on self-reported data from EC high school and higher education staff, since cost data are not collected in existing financial or budget systems. A few factors impacting the accuracy of the self-reported data to put study findings into context include:

- This study focused on EC program implementation during the 2021–22 school year. Study participants often relied on their memory to identify and allocate time and resources used to implement the EC program.
- Survey and interview participants were not asked to provide information related to overhead costs such as facility or classroom usage. It is an open question whether these costs are incurred due to increased enrollment in EC programs at their current scale, as information on space utilization would have to be collected.
- While some course-level information was collected through the survey and interviews, respondents often left these fields blank on the survey. As a result, the data presented are often reflective of program-level information.
- While the survey asked respondents to identify academic, nonacademic, and college and career readiness supports, the data does not identify the depth of tiered supports provided to students (e.g., language acquisition support for English learners).

To supplement and contextualize the self-reported data, AIR collected extant data related to EC program characteristics. While there are substantial extant data related to EC programs, the data are not readily available or systematically collected, and they are not necessarily relevant to identifying costs.

Methodology

The methodology consists of five components that answer the study's three research questions. First, we collected and examined extant data to build our understanding of the design of current EC programs and variation across EC programs. Second, we developed a program typology of EC programs to guide the cost analysis. Third, we interviewed a sample of programs to learn more about what we found in the review of extant data and to inform the development of a programmatic survey that would be administered to all EC programs. Fourth, we surveyed all designated EC programs to capture detailed data on program costs. Last, we analyzed the data to identify program costs.

This section provides a brief overview of the methods. Appendix A provides a more detailed description of the study methodology.

Extant Program Data

AIR relied heavily on extant data sources to enhance our understanding of EC program models within Massachusetts and to build a program database for analyses. The extant data sources ranged from program information found on public-facing websites, to self-reported annual performance data shared with AIR by DESE, to memoranda of understanding between high schools and higher education partners, among others. Exhibit 1 lists the extant data sources AIR used to inform its research approach and analysis plan; it includes a description of the data source as well as how we used those sources within study activities.

Exhibit 1. Extant Data Sources for EC Program Information (2021-2022)

Data source	Description	Project use
Annual reports	EC program site self-reported annual program review.	Used to create EC program database for such key programmatic elements as industry sector pathways, employer partners, and institution of higher education (IHE) partners, among others.
Student Information Management System (SIMS) – data dashboards	EC program enrollment and demographic data.	Used to create EC program database to document program enrollment size by grade level.
K12 Enrollment Survey	Program enrollment data.	For a limited number of schools that did not have data in the SIMS data dashboards, enrollment surveys were used to provide total program enrollment count.

Data source	Description	Project use
DESE School and District Profiles	School profile information, including enrollment, demographics, and program offerings.	Used to create EC program database for key programmatic elements such as school-level demographic information and other pathways programs offered (e.g., Chapter 74, EC).
DESE EC website	Designation criteria and website information.	Used to create EC program database for key programmatic elements (e.g., designated EC programs, designation dates, IHE partners) and for background information on the pathway designation process and criteria.
IHE Credit Tracker	Tracker of EC program participants' postsecondary course taking and associated reimbursement costs.	Used to document the number of EC participants enrolled in postsecondary education courses and number of total credits attempted.
NCES Common Core data	National database of school and district demographic information.	Used to create EC program database for key school-level characteristics including locale (e.g., rural, suburban) and high school type (e.g., traditional public school, charter).

Exhibit 2 lists additional extant data used to provide background and context for EC programs in Massachusetts.

Exhibit 2. EC Background and Context Data

Data source	Description
Extant research studies and reports	Prior research studies and reports on EC programs (e.g., DESE-commissioned reports by MassINC and Jobs for the Future).
Pathway Partnership Review (PPR) data	Summary reports prepared by AIR for a related DESE-funded project. Data were collected from in-depth interviews and focus groups for the earliest designated EC programs.
Financial documents	Budget documents (e.g., stipends, staff salary) included as attachments to a limited number of annual reports and college credit reimbursement documents.
Designation applications	School applications to be considered for EC pathway designation.
Memorandum Of understanding (MOU)	MOU documenting partnership agreements between EC program and IHE partner.
Provisional designation survey	For recently designated schools, a self-reported reflection on the first year of EC program implementation.
Program artifacts	Various program documents that schools included as attachments to their annual report, including program flyers and marketing materials.
EC expansion grant reports	Reports summarizing programs that applied for an expansion grant and how they used the award and its related impacts.

Early College Program Typology

Understanding key design components and developing a clear program typology were core components of this project, as variation in programmatic design (e.g., program structure, staffing, services offered) impacts the costs associated with implementing and scaling these programs. In addition, organizing programs into types based on their design components allowed AIR researchers to draw a representative sample of programs for later data collection through in-depth interviews with key program staff and partners.

As a first step in developing the EC program typology, AIR and DESE established the universe of programs to include in the review. For the purposes of this study, the universe of EC programs is restricted to programs in operation during the 2021–22 academic year with enrolled program participants. We then reviewed extant data sources (e.g., DESE EC websites, program annual reports, EC program data dashboards), profiling each program by key design elements.

AIR researchers developed a database to systematically organize and document priority EC program characteristics. In addition to the key program design elements outlined for the purpose of developing program typologies, AIR aggregated additional extant information to build out the EC program databases. These additional data elements, though not used to organize programs into types, were used to describe additional program features (e.g., geographic region, locale) to better understand and contextualize unique program characteristics. Extant data sources did not contain all of the desired data elements to fully understand key program design elements for all designated EC programs. In these cases, program characteristics were coded as "Data Not Available" or "Could Not Be Determined." Appendix B includes a full list of data elements in the EC database that informed the study typology.

From the EC program database, AIR prepared an analytic data file and conducted descriptive analyses (e.g., summary statistics, cross tabulations) to identify patterns and naturally occurring groupings of EC programs based on priority design features. This analysis was exploratory to first discover variation, patterns, and trends in the program characteristics. Data elements that did not exhibit variation across programs (e.g., all or nearly all programs were similar across a dimension) were not used to organize programs into types. AIR investigated various combinations and operationalizations of data elements to separate the universe of EC programs into program types that meaningfully distinguished types of EC programs.

While there are many variations within EC programs across a number of program characteristics, for the specific purpose of conducting the cost analysis study, programs were categorized into four types, which are outlined in the *Results* section:

- Mature Program With Clustered Designation Design

- Mature Program With Single-Designation Design
- New Program With Clustered Designation Design
- New Program With Single-Designation Design

Interviews

To better understand the variation in EC program design and how that variation might impact the costing of programs, AIR interviewed a subset of EC programs. The interviews were an important part of the research process, as they provided valuable insights into the different program designs and the resources required for each type of program. AIR wanted to ensure that the survey would be comprehensive and cover all the relevant areas, so that a thorough analysis of the costs associated with each program could be conducted. This information was then used to develop a comprehensive survey that would be administered to all EC programs, to inform the cost analysis and help AIR to better understand the implications of the variations in EC program design.

AIR, in consultation with DESE, selected and invited staff from 12 designated EC programs across the three program types to participate in virtual 45–60-minute interviews. We requested interviews with the high school EC program coordinator or other primary contact at the high school or district as well as the key point of contact at the participating IHE. Of the 12 EC programs invited, at least one of the key partners (high school or IHE) participated (see Exhibit 3 below). AIR conducted interviews from September to October 2022 via Zoom and recorded those conversations with permission from the respondents. Recordings of the interviews were professionally transcribed, and transcripts were coded in NVivo to identify relevant themes, categories, and descriptions.

Exhibit 3 lists the number of respondents and program type associated with each of the 12 EC programs that participated in the interviews.

Exhibit 3. Interviewed EC Programs

EC programs	Number of high school or district interviews	Number of employer/industry partner interviews	Program type
A	1	1	New Program With Clustered Designation Design
B	0	2	Mature Program With Single-Designation Design
C	1	1	Mature Program With Clustered Designation Design
D	1	1	New Program With Single-Designation Design
E	1	1	Mature Program With Clustered Designation Design
F	1	2	Mature Program With Clustered Designation Design
G	1	2	New Program With Clustered Designation Design
H	1	1	Mature Program With Single-Designation Design
I	1	1	Mature Program With Single-Designation Design
J	1	1	New Program With Clustered Designation Design
K	0	1	New Program With Single-Designation Design
L	1	1	New Program With Single-Designation Design

The study team developed two semi-structured interview protocols—one for high school EC coordinators and one for IHE EC coordinators. Interview questions focused on identification of the resources or "ingredients" that were necessary to implement the EC program during the 2021–22 academic year, rather than what currently is or is not funded. Interview questions in both protocols were structured around five key cost categories: administration costs, instructional costs, advising/support costs, recruitment costs, and other costs (e.g., transportation, supplies). Respondents were asked to share information about staff members who provide support within each cost category, including their job title, program responsibilities, years of experience, highest level of education, and approximate time spent supporting the program or students. Additional questions addressed training and compensation

(in addition to their regular pay) for program staff as well as resources utilized within the cost category (such as materials, technology, and supplies for the instructional cost category). The high school protocol also included questions about sources of current funding for the program and plans for and needs related to expansion of EC at the school. Respondents were asked to focus on the designated EC program, not other dual credit or pilot EC programs that may be offered at the school, and to consider the 2021–22 school year only when responding. Appendix C includes the full EC program coordinator interview protocols for both K12 and IHEs.

Program Survey

AIR also administered an electronic survey to key program contacts at all designated EC programs to collect specific information related to program operations, staffing, and scaling efforts, among other topics. The survey for high school and IHE EC program coordinators/administrators included questions related to program context; activities and costs related to administration, instruction, advising and support, and outreach and recruitment; miscellaneous costs; and scaling and expanding EC programs.

Surveys were administered through Qualtrics in November 2022, with automatic weekly reminders sent to nonrespondents throughout the duration of survey administration. From the data collected in Qualtrics, AIR researchers identified and included quantities of resources in the resource cost model (RCM) for cost analyses. In addition, researchers also examined descriptive analyses of other key program elements (e.g., staffing levels) to triangulate newly collected data sources with prior extant data collected as part of the typology development process.

Appendix D includes the survey instruments administered to high school and IHE EC program personnel.

Cost Analysis

To determine EC programs costs, overall and per student, AIR researchers applied the ingredients approach (Levin et al., 2018) in an RCM framework. This approach includes program costs that are not typically identified within school or district budgets (e.g., equipment, staff time).

The AIR team identified all of the necessary resources, or “ingredients,” by collecting data through interviews and surveys to establish an in-depth understanding of a program’s implementation. In the case of Massachusetts’ EC programs, our approach included understanding the resources used at the district, state, and IHE partner levels. While staff time devoted to EC program implementation represents a substantial cost, the study also sought to

understand the nonpersonnel resources required for EC program implementation (e.g., classroom materials, facilities, staff equipment).

AIR then cataloged the identified resources within the RCM and assigned prices using national, state, and local pricing databases (e.g., Teachers College Center for Benefit-Cost Studies of Education [CBCSE] E$timator, Bureau of Labor Statistics, DESE School and District Profiles). The "price" of staff time was calculated by total compensation, including both salary and benefits; the price of equipment and other materials was gathered from national online retailers; and other costs (e.g., transportation, facilities) were collected from extant sources such as the CBCSE E$timator. Inflation adjustments were made to reflect the year in which the cost data are reported (2021–22 school year).

The comprehensive account of all resources and their prices within the RCM allowed AIR to conduct the analysis necessary to answer the research questions outlined by DESE related to program funding and cost. Appendix E provides additional information about data sources used for prices.

Results

This section outlines the results of each of the study's research questions, starting with the program typology developed for the study, followed by the cost analysis findings, and concluding with a summary of the program implementation and scaling factors identified.

Early College Program Typology

Research Question: How can EC programs be categorized to examine costs and funding?

In school year 2021–22, there were 46 active[1] designated Early College (EC) programs in Massachusetts, representing 40 unique high schools and 27 unique school districts.[2] In addition, there were 23 unique institutions of higher education (IHEs) serving as EC postsecondary partners. Most designated EC programs (*n*=33, 72%) had only one IHE partner, and the remaining 13 programs (28%) had two IHE partners. Quinsigamond Community College was the IHE partnering with the greatest number of EC programs (eight), followed by Worcester State University (seven), which is due to their partnerships with Worcester Public

[1] One designated EC program (Fecteau-Leary Alternative High School) was excluded from this analysis because it did not enroll program participants in school year 2021–22.
[2] Twenty-five districts reflect traditional public schools, and two districts reflect charter schools (i.e., New Heights Charter School of Brockton and A North Central Charter Essential).

Schools and their seven designated EC programs. Approximately three fifths (*n*=14, 61%) of IHE partners were 2-year community colleges, and the remaining nine (39%) were 4-year colleges and universities.

Approximately two thirds of designated EC programs (*n*=30, 65%) operated in suburban high schools, and more than one quarter (*n*=13, 28%) were offered at schools located in cities. Almost half (*n*=21, 46%) of programs were geographically clustered in Northeast[3] Massachusetts, followed by more than one quarter (*n*=13, 28%) of programs located in Central[4] Massachusetts.

Half of all designated EC programs enrolled between 55 and 159 students, with a median program enrollment of 100 students. EC programs were likely to be offered at high schools with large proportions of students of color and those with economic disadvantage, which aligns with the equity-focused mission of the EC model. For example, half of the EC programs operated at high schools where Black/African American and Hispanic/Latino students combined accounted for nearly half (46%) or more of the total student body. Similarly, half of the EC programs were at high schools where 80% or more of the total student body consisted of "high needs" students.[5] EC programs were administered at high schools that also offered other DESE-designated career readiness programs, including Chapter 74–approved vocational technical education programs (*n*=22, 48%) and Innovation Pathways programs (*n*=20, 43%).

Program Characteristics Informing EC Typology

- Designation Year
- Location
- Number of Program Participants
- High School Demographics
- Other DESE Pathways Programs Offered
- Number and Sector of Higher Education Partners
- Postsecondary Instruction Location and Modality

Regarding postsecondary instruction, a plurality of designated EC programs (*n*=15, 33%) included both high school teachers and college-level instructors, followed by programs with only college instructors (*n*=13, 28%). Note, however, that EC instructor type could not be determined for more than a quarter of EC programs. Approximately two thirds of programs (*n*=29, 63%) offered only in-person college-level instruction, followed by approximately one third (*n*=14, 30%) offering both in-person and online (i.e., hybrid) course instruction.[6] Nearly half (*n*=21, 46%) of EC programs offered college-level instruction at both the high school and partner postsecondary institution locations.[7] Most programs (*n*=37, 80%) offered pre-EC

[3] Operationalized as Essex, Middlesex, and Suffolk Counties.
[4] Operationalized as Worcester County.
[5] A student is classified as "high needs" if he or she is designated as either economically disadvantaged, English learner/former English learner, or a student with disabilities (https://profiles.doe.mass.edu/help/data.aspx?section=students).
[6] Modality of instructional delivery could not be determined for two EC programs.
[7] EC programmatic elements are nuanced and may vary by grade level and IHE partner, among other dimensions. For the purposes of the typology, program characteristics reflect the program as a whole and may not reflect the exact detail or within-program variation by grade level.

programming for students before they officially enrolled in the EC program, typically as a college readiness elective course in the ninth or 10th grade (e.g., “First Year Seminar”).

Early College Program Grouping

In developing our typology for the designated EC programs, we relied on two primary variables: years in operation and clustered (or multi-designation) program design. The costs associated with program start-up versus program maintenance are likely different, in that newer programs may require greater initial up-front costs and mature programs likely find cost efficiencies in later years resulting from already-established program services. Similarly, programs with clustered designs could potentially find efficiencies in program administration and operations: resources could be shared within the same district or school that has more than one designated EC program.

We conceptualized program maturity by the number of years in operation at the conclusion of the 2021–22 school year. Mature programs were those in operation for 3 or 4 years, and new programs were in operation for only 1 or 2 years. The number of newly designated EC programs has tapered over time, with a peak of 18 (39%) in the original designation year (2018–19), followed by 14 (30%) in 2019–20, and six (13%) and eight (17%) programs in 2020–21 and 2021–22, respectively. As of the time of this report, designation applications are being reviewed for the 2022-23 academic year.

We also examined EC programs that were “clustered” in their program design, operationalized as a school district with more than one high school with a designated EC program (seven school districts reflecting 22 EC programs) or as a high school with more than one designated EC program (six high schools reflecting 12 EC programs). Four designed EC programs exhibited both cluster types; Lynn Classical High School and Lynn English High School (both in Lynn Public Schools) implemented EC programs in 2019–20, partnering with North Shore Community College, and again in 2020–21, partnering with Salem State University.

Based on these two primary design criteria, we divided EC programs into types to assess whether these types varied across other dimensions of key program characteristics. We conducted descriptive analyses of programmatic elements by program type groups to understand meaningful differences in program characteristics and arrived at the following generalized program groupings.

Exhibit 4. EC Program Typology

Type	Number of designated EC programs	Description
Mature Programs With Clustered Program Designation Design	21	• More years in operation • Multiple EC designations per district or high school • Relatively large EC program enrollment • Typically, two IHE partners • Offer relatively more additional DESE pathways programs • Situated in high schools with large shares of underrepresented minority and "high needs" student populations
Mature Programs With Single-Designation Design	11	• More years in operation • Single EC designation per district or high school • Typically, one IHE partner • Relatively large EC program enrollment • Offer relatively more additional DESE pathways programs • Situated in high schools with medium shares of underrepresented minority and "high needs" student populations
New Programs With Clustered Designation Design	9	• Few years in operation • Multiple EC designations per district or high school • Typically, one IHE partner • Relatively moderate EC program enrollment • Offer relatively more additional DESE pathways programs • Situated in high schools with medium shares of underrepresented minority and "high needs" student populations
New Programs With Single-Designation Design	5	• Few years in operation • Single EC designation per district or high school • Typically, one IHE partner • Relatively small EC program enrollment • Offer relatively fewer additional DESE pathways programs • Situated in high schools with small shares of underrepresented minority and "high needs" student populations

Limitations of Early College Program Typology

Our findings related to EC program characteristics and typology may be limited due to the extant data available to our research team. As an example, the accuracy of program-reported enrollment numbers varied across extant data sources (e.g., enrollment reports versus SIMS data system). AIR researchers attempted to validate the most accurate program data through the assistance of DESE staff and, in some cases, emailed targeted programs with an information request. When extant data were unclear or difficult to discern, more than one AIR staff member reviewed the extant data source to reach consensus on how best to interpret the data source and code the relevant variable in our data set. In addition, our study period (i.e., 2021–22 school year) may not capture emerging program models represented by the most recently designated programs in the 2022–23 school year. Given the dynamic nature of EC programs, even by semester, their characteristics and operational practices may have evolved since the fixed study period.

Program Costs and Funding

Research Question: What are the costs and funding mechanisms for current EC programs?

The cost of EC programs is the monetary value of resources invested by school districts, high schools, and their IHE partner(s) to deliver instruction and support services to the students participating in an EC program. To calculate the overall costs associated with the EC program at each responding study site, we developed a resource cost model (RCM) to organize the resources identified in interviews, extant data, and survey responses and then apply prices to calculate costs across six cost categories:

- **Administration.** Personnel and nonpersonnel costs related to the management and coordination of the EC program (e.g., developing class schedules, managing relationships with partners, compiling and reporting EC-relevant data).
- **Instruction.** Personnel and nonpersonnel costs related to instruction within the EC program (e.g., staff salaries, program equipment, professional development).
- **Academic Advising.** Personnel and nonpersonnel costs related to providing supports that focus directly on academic content and are designed to encourage academic success (e.g., tutoring, embedded classroom student advocate).
- **Nonacademic Advising.** Personnel and nonpersonnel costs related to providing supports without a direct focus on academic content and are designed to encourage academic success (e.g., success seminars, check-in meetings, parent/family night).

- **College and Career Advising.** Personnel and nonpersonnel costs related to providing supports designed to encourage college and career success (e.g., career fairs, FAFSA workshop).
- **Recruitment and Outreach.** Personnel and nonpersonnel costs related to program recruitment and outreach (e.g., developing informational materials, hosting open house/information sessions).

The cost analysis delves into the personnel and nonpersonnel resources that are necessary for delivering EC courses to students across these six cost categories. It collects the quantity and types of resources required, as well as their corresponding costs. A comprehensive understanding of the cost of providing EC programs is an essential input into improving EC program implementation as well as expanding and sustaining EC programs.

Cost Analysis Sample

To gather the necessary data, the AIR team administered surveys to all 46 EC programs that existed during the 2021–22 academic year. From these surveys, we received responses from 20 K–12 EC coordinators, with 18 of those responses including sufficient detail to be included in the cost analysis. In addition, we received responses from 21 IHE EC coordinators, of whom 15 included the information necessary to conduct cost analyses.

The 18 EC K–12 programs in the sample (Exhibit 5) are spread throughout Massachusetts but are predominately located in suburban areas (67%) and in the northeastern region of the state (61%). Relatedly, programs range in size from small to large but sizes are not evenly distributed across locales. For instance, four of the five city programs in our sample are considered small, while only one quarter of the suburban programs are small. By location in the state, all programs in the western region are small and all of the programs in the central region are considered to be medium at least. The majority of high schools have one IHE partner (78%), and other high schools have two partners. Regarding years in operation, the EC programs analyzed have a range of 1 to 4 years, with the majority having been designated for 3 or 4 years (67%), suggesting the majority can be viewed as mature programs. The mode in which students matriculate into the program is nearly evenly split between those having cohort models and those without cohort models.

Exhibit 5. Sample of EC Programs Used in Cost Analyses (High School)

EC high school program	Size of EC program	Clustered	Locale[8]	Number of IHE partners	Region	Cohorted	Years designated
A	Large	Clustered	City	2	Central	No	4
B	Small	Clustered	City	1	Northeast	Yes	1
C	Large	Clustered	Suburban	1	Southeast	No	2
D	Medium	Clustered	Suburban	2	Central	No	3
E	Large	Not Clustered	Suburban	1	Northeast	No	3
F	Small	Clustered	City	1	Western	No	1
G	Small	Clustered	City	1	Western	Yes	4
H	Large	Clustered	Suburban	1	Northeast	No	4
I	Large	Clustered	Suburban	1	Northeast	No	4
J	Large	Not Clustered	Suburban	1	Northeast	Yes	3
K	Small	Clustered	Suburban	1	Northeast	Yes	3
L	Medium	Not Clustered	Suburban	2	Central	Yes	3
M	Small	Not Clustered	Suburban	1	Northeast	Yes	3
N	Medium	Not Clustered	Suburban	1	Northeast	Yes	4
O	Small	Not Clustered	Suburban	1	Northeast	No	2
P	Small	Not Clustered	City	2	Northeast	No	1
Q	Small	Clustered	Suburban	1	Western	No	4
R	Medium	Not Clustered	Rural	1	Northeast	Yes	1

Regarding the 15 EC IHE partners in the sample (Exhibit 6), two thirds of participating institutions are located in suburban areas and nearly half (47%) are located in the central region of the state. Each of the three rural programs in the sample are considered small, while both city programs are medium in size. Two thirds of the IHE partners are a part of the 2-year sector. As for the maturity of IHE partner participation in EC programs, there is a range from 1 to 4 years; however, the vast majority have participated for at least 3 years (87%).

[8] The locale was determined by the National Center for Education Statistics locale classifications.

Exhibit 6. Sample of EC Programs Used in Cost Analyses (IHE)

EC IHE program	Size of EC program	Clustered	Locale	Sector	Region	Cohorted	Years designated
A	Medium	Clustered	City	4-year	Central	No	4
B	Medium	Clustered	City	2-year	Northeast	Yes	4
C	Large	Not Clustered	Suburban	2-year	Northeast	No	4
D	Small	Not Clustered	Rural	4-year	Central	No	3
E	Small	Not Clustered	Rural	2-year	Central	No	3
F	Medium	Clustered	Suburban	2-year	Central	No	3
G	Medium	Clustered	Suburban	2-year	Western	Yes	4
H	Small	Clustered	Suburban	4-year	Central	Yes	3
I	Medium	Clustered	Suburban	2-year	Central	Yes	3
J	Large	Clustered	Suburban	4-year	Northeast	Yes	2
K	Small	Clustered	Suburban	2-year	Northeast	Yes	3
L	Large	Not Clustered	Suburban	2-year	Northeast	No	3
M	Large	Not Clustered	Suburban	2-year	Southeast	Yes	4
N	Large	Clustered	Suburban	2-year	Southeast	Yes	1
O	Small	Not Clustered	Rural	4-year	Central	Yes	3

The sample of EC programs analyzed in this study represents the EC programs implemented across the state. The sample characteristics are consistent with the trends observed among all EC programs, with a lower proportion of mature programs (67% vs. 79%), similar suburban representation (67% vs. 65%), the same number of large programs (33% vs. 33%), and a smaller number of clustered programs (56% vs. 66%). These similarities provide confidence in the representativeness of the sample and the generalizability of our findings to all EC programs in Massachusetts during the 2021–22 academic year.

Average Costs of EC Programs

As mentioned earlier, the analysis focused on the following cost categories: administration, instruction, academic advising, nonacademic advising, college and career advising, and outreach and recruitment.

Among K–12 schools, the average cost per student served by an EC program during the 2021–22 school year was $1,879 (Exhibit 7). Note that this amount is *in addition to* average per-pupil funding in Massachusetts. Administration and instruction were the two largest expenditure

categories, costing $511 and $470 per student. Academic advising was a comparable cost of $388 per student. Nonacademic advising, college and career advising, and outreach and recruitment had similar costs to one another at $171, $160, and $179 per student, respectively.

In terms of proportional costs, in the 2021–22 academic year, administration (27%), instruction (25%), and academic advising (21%) each represented roughly of quarter of the costs per student (combined 73% of total costs). The remaining categories of cost, which included nonacademic advising (9%), college and career advising (8%), and outreach and recruitment (10%), were relatively lower, each accounting for 10% or less of the cost per student.

Exhibit 7. Average Costs per Student (K–12)

Cost component	Average cost per student	Proportional costs per student
Administration	$511	27%
Instruction	$470	25%
Academic advising	$388	21%
Nonacademic advising	$171	9%
College and career advising	$160	8%
Outreach and recruitment	$179	10%
Total	**$1,879**	**100%**

At IHE partner institutions, the average cost per student served by an EC program during the 2021–22 school year was $1,803 (Exhibit 8). Administration and instruction were the two largest expenditure categories, costing $417 and $713 per student. Academic advising, college and career advising, and outreach and recruitment had similar costs to one another, at $208, $232, and $233 per student.

In terms of proportional costs, in the 2021–22 academic year, instruction was the highest cost category, representing 40% of total cost per student. Administration was a distant second, representing 23% of total cost per student. The remaining categories of cost, which include academic advising (11%), college and career advising (13%), and outreach and recruitment (13%), are relatively lower, each accounting for less than 15% of the cost per student in the 2021-22 academic year.

Exhibit 8. Average Costs per Student (IHE)

Cost component	Average cost per student	Proportional costs per student
Administration	$417	23%

Instruction	$713	40%
Academic advising	$208	11%
Nonacademic advising	$232	13%
College and career advising	$233	13%
Total	**$1,803**	**100%**

Average Cost per Student: By Years Designated

The number of years the EC program had been in operation ranged from 1 to 4 years across the programs in our sample. The cost of each program changed related to the years of operation and thus represents a different level of cost per student, as shown in the data. There also exist differences in costs and the changes in cost over time between EC programs at K–12 (Exhibit 9) schools relative to IHE partners (Exhibit 10). It is important to note that while cost may decrease over time, it still requires substantial financial investment to operate an EC program.

Exhibit 9. Average Costs per Student: By Years Designated (K–12)

	Years designated			
	1 year (n=4)	2 years (n=2)	3 years (n=6)	4 years (n=6)
Administration	$1,046	$2,039	$459	$307
Instruction	$524	$1,488	$441	$378
Academic advising	$1,639	$416	$199	$299
Nonacademic advising	$687	$0	$125	$134
College and career advising	$535	$170	$135	$116
Outreach and recruitment	$626	$441	$75	$144
Total	**$5,057**	**$4,554**	**$1,434**	**$1,378**

For K—12 programs that had been operational for 1 year, the highest costs were associated with academic advising, at $1,639 per student. This was followed by administration costs, at $1,046 per student. Costs of instruction, nonacademic advising, college and career advising, and outreach and recruitment costs were $524, $687, $535, and $626 per student, respectively. The total cost among EC programs that had been operational for 1 year was $5,057 per student.

For EC programs that had been operational for 2 years, the costs were only slightly lower, with administration again being the highest cost at $2,039 per student. For these programs, instruction becomes the second highest category, at $1,488 per student. Academic advising and outreach and recruitment were lower, at $416 and $441 per student. The costs of college and career

advising and nonacademic advising were substantially lower, at $170 and $0 per student, respectively. The total cost for EC programs that had been operational for 2 years was $4,554 per student.

For EC programs that had been operational for 3 years, the cost was significantly lower, with administration being the highest cost and instruction being the second highest cost, at $459 and $441 per student. Academic advising and outreach and recruitment costs were greatly reduced, at $199 and $75 per student, respectively. College and career advising was moderately lower, at $135 per student. Nonacademic advising increased in cost to $125 per student. The total cost among EC programs that have been operational for 3 years was $1,434 per student.

For EC programs that had been operational for 4 years, the cost was similar to that of those operating for 3 years. Instruction was the highest cost and administration was the second highest cost, at $378 and $307 per student. College and career advising also decreased in expense to $116 per student. Academic advising, nonacademic advising, and outreach and recruitment all moderately increased in cost, at $299, $134, and $144 per student. The total cost among EC programs that have been operational for 4 years was $1,378 per student.

Exhibit 10. Average Costs per Student: By Years Designated (IHE)

	Years designated		
	1–2 years (n=2)	3 years (n=8)	4 years (n=5)
Administration	$547	$502	$324
Instruction	$615	$646	$786
Academic advising	$291	$369	$76
Nonacademic advising	$83	$374	$175
College and career advising	$201	$484	$70
Total	**$1,737**	**$2,375**	**$1,431**

For IHE programs that had been operational for 1 to 2 years, the highest costs were associated with instruction and administration, at $615 and $547 per student. This was followed by academic advising and outreach and recruitment costs, at $291 and $201 per student. Costs of college and career advising were much lower, at $83 per student. The total cost among EC programs that had been operational for 1 to 2 years was $1,737 per student.

For EC programs that had been operational for 3 years, the costs were slightly higher. Instruction was again the highest cost category at $646 per student. Administration was the

second highest cost at $502 per student. The remaining categories of academic advising, college and career advising, and outreach and recruitment were $369, $374, and $484 per student. The total cost among EC programs that had been operational for 3 years was $2,375.

For EC programs that had been operational for 4 years, the cost decreased from those operational for 3 years and was slightly less than those that have been operational for only 1 year. Instruction was the highest cost category, making up nearly half of the cost per student, at $786 per student. Administration was the second highest cost category, at $324 per student. Academic advising, college and career advising, and outreach and recruitment all decreased substantially, at $76, $175, and $70 per student, respectively. The total cost among EC programs that had been operational for 4 years was $1,431 per student.

Average Cost per Student: By Locale

Findings from this study suggest few differences in cost for EC programs based on their urbanicity for the K—12 partners.

Exhibit 11. Average Costs per Student by Locale (K–12)

	Locale[9]	
	City (n=5)	Suburban (n=12)
Administration	$463	$545
Instruction	$434	$520
Academic advising	$332	$332
Nonacademic advising	$160	$170
College and career advising	$282	$106
Outreach and recruitment	$175	$176
Total	**$1,846**	**$1,849**

For students participating in K–12 EC programs, the costs per student in urban areas were similar overall to the costs per student in suburban areas, at $1,846 and $1,849 per student, respectively. When examining costs by category, there were some slight differences between these two urbanicities. Administrative and instruction costs were lower at city programs ($463 and $434 per student, respectively) compared to suburban programs ($545 and $520 per student, respectively). However, the cost of college and career advising was more than twice as expensive at city programs ($282) compared to suburban programs ($106). These differences

[9] The one rural K—12 site is not shown here to protect anonymity and ensure skewed estimates are not reported.

may relate to most suburban EC programs being more mature in terms of years designated, as many of them had existed for at least 3 years, while the city programs were more varied in being either in year 1 or year 4. Differences may also relate to program size, as four out of the five city programs were considered small, as opposed to only 25% of suburban programs being small.

Unlike the K–12 program data discussed previously, the costs by locale among IHE partners (Exhibit 12) were far more varied. When examining the cost per student for administration, the results suggest substantial differences between city ($559), suburban ($353), and rural ($843) programs. For this cost category, rural programs had the highest costs.

Exhibit 12. Average Costs per Student by Locale (IHE)

	Locale		
	City (n=2)	Suburban (n=10)	Rural (n=3)
Administration	$559	$353	$847
Instruction	$1,045	$651	$854
Academic advising	$183	$175	$584
Nonacademic advising	$535	$157	$544
College and career advising	$174	$200	$648
Total	**$2,496**	**$1,536**	**$3,477**

However, city EC programs had much higher cost of instruction, at $1,045 per student, compared to rural and suburban EC programs, at $854 and $651 per student. This finding suggests possible challenges facing city programs in providing quality instruction, perhaps driven by class sizes or cost of living, while administrative needs may be easier to resolve in the city context relative to rural programs.

Rural programs had a substantially higher cost for academic advising ($584) and outreach and recruitment ($648) relative to city programs ($183 and $174, respectively) and suburban programs ($175 and $200, respectively). However, the cost of college and career advising was similar at rural ($544) and city ($535) programs relative to suburban programs ($157). This finding suggests consistent challenges facing rural programs in providing student-oriented supports relative to the other two locales. City programs specifically may have had challenges related to college and career advising, while each of these categories seems to have been offered at a lower cost among the suburban programs.

These data demonstrate differences in costs by locale among EC programs, highlighting what could be unique challenges facing each location. In particular, these data display the challenges faced by rural programs when it comes to costs incurred by IHEs in providing EC programs to students. Across all cost categories other than instruction, rural programs have the highest costs per student. Since the costs discussed are per student, the higher costs could reflect the rural programs being categorized as small, meaning there are fewer students across which to spread the cost of personnel and non-personnel expenses. Though not as consistent when compared to other locales, there also exist challenges of higher costs at city schools relative to their suburban counterparts when it comes to instruction and college and career advising.

Average Cost per Student: By Program Size (Student Enrollment)

The possible importance of program size has been alluded to in previous cost sections. What follows is an explicit discussion of the relationship between program size category and cost per student. Beyond differences in cost by program size, there are also differences within EC programs offered at K–12 (Exhibit 13) and IHE EC programs (Exhibit 14).

Exhibit 13. Average Costs per Student by Enrollment (K–12)

	Enrollment size		
	Small (n=8)	Medium (n=4)	Large (n=6)
Administration	$1,381	$619	$350
Instruction	$1,507	$389	$320
Academic advising	$1,638	$719	$122
Nonacademic advising	$794	$262	$53
College and career advising	$1,011	$111	$34
Outreach and recruitment	$996	$188	$47
Total	**$7,327**	**$2,288**	**$926**

Small K–12 EC programs have had the highest total cost, at $7,327 per student. This is a significant difference when compared to the medium EC programs, which incur a cost of $2,288 per student, and the large EC programs, with a cost of $926 per student. Administration costs are the third highest cost among small programs ($1,381), but the second highest cost for medium programs ($619) and the highest cost for large programs ($350). Despite the large dollar amount, administration costs represented a smaller share of total costs at smaller programs (19%) relative to medium (27%) and large (38%) programs. This is similar to what is seen in the instruction costs, which were the second highest cost category for small programs

($1,507; 21%) and large programs ($320; 35%) but were only the third highest cost category for medium programs ($389; 17%). Rounding out the top three highest cost categories across the program sizes was academic advising, which is the highest cost of small ($1,638; 22%) and medium programs ($719; 31%) and a distant third highest cost for large programs ($122; 13%).

Though the magnitudes and proportions of these top three cost categories vary, small programs had particularly high costs in providing nonacademic advising, college and career advising, and outreach and recruitment. These three categories accounted for 38% of total costs at small programs but only 25% of costs at medium programs and 14% of costs at large programs. Many of these differences by size could reflect the differences in the number of students costs are being spread across but may also warrant further analysis of access to personnel in certain areas of the state.

Exhibit 14. Average Costs per Student by Enrollment (IHE)

	Enrollment size		
	Small (n=5)	Medium (n=5)	Large (n=5)
Administration	$640	$394	$376
Instruction	$857	$989	$546
Academic advising	$419	$339	$96
Nonacademic advising	$383	$547	$44
College and career advising	$467	$420	$88
Total	**$2,766**	**$2,689**	**$1,150**

Though not as dramatically different, small IHE EC programs had the highest total cost, at $2,766 per student. This difference was substantial when compared to the medium EC programs, which incurred a cost of $2,689 per student, and the large EC programs, with a cost of $1,150 per student. Similar to the cost breakdown above, cost of administration and instruction represent two of the larger categories across program sizes. Instruction was the highest cost category, at $857, $989, and $546 per student at small, medium, and large programs. Administration was the second highest cost category, at $640, $394, and $376 per student at small, medium, and large programs. For the remaining cost categories, academic advising, college and career advising, and outreach and recruitment, the costs were fairly comparable between small (46%) and medium programs (49%). However, these categories only accounted for 20% of costs at large programs. This may suggest that larger programs reached some form of economies of scale in advising and outreach categories, but faced higher

instruction costs, as more students required more class offerings. This stands to reason, as an advisor's caseload is likely larger than what is acceptable as an average class size.

In examining the patterns in these data, it seems program size influenced overall cost, with smaller programs incurring the highest costs and larger programs incurring the lowest costs per student. Exhibit 15 and Exhibit 16 show the correlation between the number of students enrolled and the cost per student in the EC program by plotting these measures for each program in the sample.

The trend observed in the data suggests that as the program size increases, the cost per student decreases. This trend can be seen for both the K–12 EC programs and the IHE EC programs. Aside from one outlier, the cost even among smaller programs is less varied and is generally less expensive among IHE EC programs than K–12 EC programs. The downward slope of the fitted line indicates that for every additional EC student enrolled, the cost per student decreases by approximately $10 for K–12 EC programs and $6 IHE EC programs. This trend suggests that while the costs for smaller programs may be higher for K–12 programs, as the size of the program grows the reduction in cost occurs more rapidly.

These findings suggest that larger programs may have access to economies of scale, decreasing the cost per student as the program grows. Though starting at different magnitudes and decreasing at slightly different rates, this trend is consistent among K–12 EC programs and IHE EC programs.

Exhibit 15. Scatterplot of Cost per Student and Number of Students Enrolled (K–12)

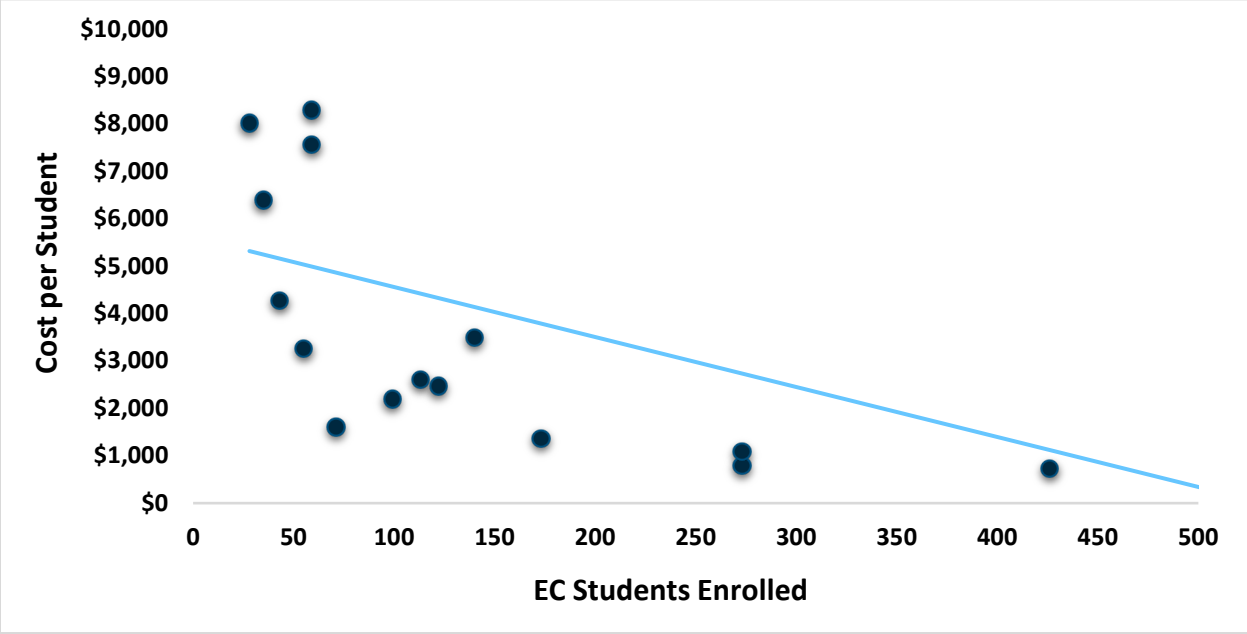
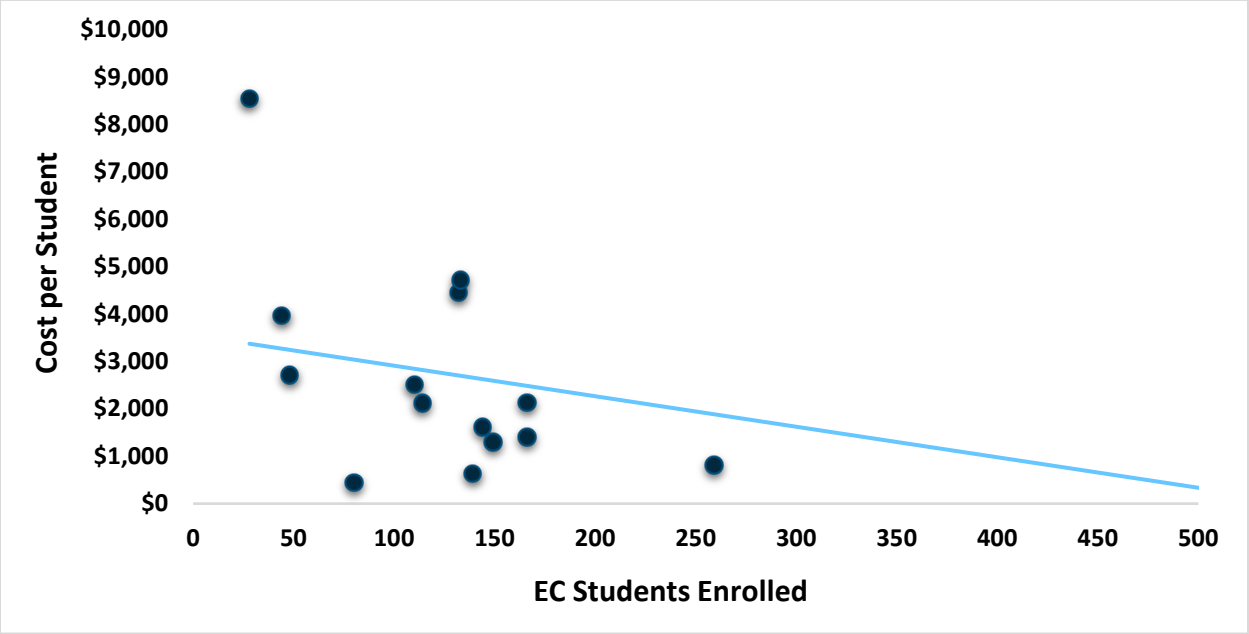


Exhibit 16. Scatterplot of Cost per Student and Number of Students Enrolled (IHE)



Average Cost per Student: By EC Typology

While program size has a clear relationship with cost per student, there does exist nuance within each size category. The developed EC typology, which links program size with years in operation and number of programs/paths, is a useful tool for understanding variation that exists within each size category. This variation can be seen in both the K–12 EC programs (Exhibit 17) and the IHE EC programs (Exhibit 18).

Exhibit 17. Average Costs per Student: By EC Typology (K–12)

	EC typology			
	Type A Larger, Mature Programs With Clustered Design (n=8)	Type B Larger, Mature Programs With Single-Designation (n=4)	Type C Smaller, New Programs With Clustered Design (n=3)	Type D Smaller, New Programs With Single-Designation (n=3)
Administration	$313	$583	$1,877	$781
Instruction	$333	$700	$1,480	$48
Academic advising	$263	$262	$666	$1,896
Nonacademic advising	$89	$313	$393	$463
College and career advising	$120	$137	$367	$432
Outreach and recruitment	$111	$155	$330	$882

	EC typology			
	Type A Larger, Mature Programs With Clustered Design (n=8)	Type B Larger, Mature Programs With Single-Designation (n=4)	Type C Smaller, New Programs With Clustered Design (n=3)	Type D Smaller, New Programs With Single-Designation (n=3)
Total	**$1,229**	**$2,150**	**$5,113**	**$4,502**

These cost data by EC program typology demonstrate a similar trend related to program size. The two small program categories, Type C and Type D, had the highest cost per student, at $5,113 and $4,502, respectively. These two program types were also both newer programs. The key difference between Type C and Type D is that Type C had a clustered design where Type D did not. Based on the programs in our sample, having a single designation (Type D) seems to have generated a cost efficiency when it comes to administration and instruction. However, costs of nonacademic advising, college and career advising, and outreach and recruitment are all higher among the Type D programs relative to Type C programs.

Looking at the two types of larger, mature programs, Type A had a clustered design while Type B has only a single designation. Unlike the smaller programs, the single-designation type (Type B) had a higher total cost at $2,150 relative to the clustered design (Type A) at $1,229. Like the smaller programs, the single-designation program had the higher costs per student for nonacademic advising, college and career advising, and outreach and recruitment. Unlike the smaller programs, the clustered design for larger mature programs seemed to offer a cost efficiency for administration and instructional costs.

Unlike the K–12 EC program costs by typology, the IHE EC program typology was far less varied, and showed a clearer efficiency for single- designation programs. Interestingly, Type A, the larger, mature program with a clustered design, had the highest cost per student at $2,531. Type C, the smaller, new program with clustered design, was the second highest cost per student at $1,353. Type B, the larger mature program with only a single designation, had the lowest cost per student at $1,353. As had been the case when viewing costs broken out by other program characteristics, administration and instruction combined represented the bulk of the cost per student in all program types.

Exhibit 18. Average Costs per Student: By EC Typology (IHE)

	EC typology		
	Type A Larger, Mature Programs With Clustered Design (n=7)	Type B Larger, Mature Programs With Single-Designation (n=6)	Type C Smaller, New Programs With Clustered Design (n=2)
Administration	$384	$404	$547
Instruction	$968	$575	$615
Academic advising	$312	$120	$291
College and career advising	$483	$110	$83
Outreach and recruitment	$384	$144	$201
Total	**$2,531**	**$1,353**	**$1,737**

When comparing the two larger, mature programs, the single designation (Type B) programs seemed to have an efficiency regarding instruction, advising, and outreach. Comparing the two programs with clustered design, the smaller and new program type (Type C) had a lower cost per student in all categories except for administration. This finding could reflect the location of programs in the category leading to challenges in filling administrative positions or high salaries not being spread across as many students. For IHE expenses, it would seem that the single designation has a cost efficiency, which is not necessarily the case among K–12 EC programs.

Average Cost per Student: By IHE Partner Sector

The data also provide insight into the differences in costs by which IHE is supporting or offering the EC program courses.

Exhibit 19 shows the average costs per student among K–12 EC programs by sector of their partnering IHE. Though the total costs per student were similar between 2-year ($1,887) and 4-year ($1,722) sector partners, there exist some differences by cost category.

Among 2-year sector partners, administration was the highest cost per student ($570) and instruction was the second highest ($497). Academic advising was slightly lower, at $370 per student. Nonacademic advising, college and career advising, and outreach and recruitment costs were the lowest, at $164, $161, and $125 per student.

These costs are slightly different from the K–12 costs incurred with a 4-year partner, where instruction was the highest cost per student ($427) and academic advising was a close second ($415). Administration was still in the top three highest costs, at $350. Nonacademic advising and college and career advising were the lowest, at $163 and $144 per student. Outreach and

recruitment costs were slightly higher, at $223 per student. The differences in cost incurred for K–12 programs based on the sector of IHE partner suggest that when partnering with a 2-year institution, the K–12 institution incurred more costs to meet administrative and instruction needs. Meanwhile, K–12 programs that partnered with a 4-year institution provided more advising and recruitment resources. Depending on the capacity of the K–12 institution and the IHE, there could be a strategic way to match these two groups based on needs and resources.

Exhibit 19. Average Costs per Student: By IHE Partner Sector (K–12)

	IHE sector[10]	
	2-year (n=9)	4-year (n=7)
Administration	$570	$350
Instruction	$497	$427
Academic advising	$370	$415
Nonacademic advising	$164	$163
College and career advising	$161	$144
Outreach and recruitment	$125	$223
Total	**$1,887**	**$1,722**

Exhibit 20 shows the average costs per student among IHE EC programs by sector. Examining IHE EC programs, there was a substantial difference in the total costs per student and by cost categories. Overall, the cost per student for 2-year IHE EC programs was $1,490—about half of the cost per student for 4-year IHE EC programs ($2,913).

When looking at these costs by category, 2-year sector IHE EC programs spent roughly one third of their total cost on instruction ($585). Administration was the second highest category, at $288 per student. Academic advising, college and career advising, and outreach and recruitment were the lowest categories, at $197, $185, and $235 per student.

Looking at 4-year sector IHE EC program costs, instruction was 40% of the total cost ($1,150) and administration makes up another 30% ($899). Academic advising ($213), college and career advising ($448), and outreach and recruitment ($203) were the lowest three categories, though all higher than their associated costs per student in the 2-year sector.

[10] A couple of programs have 2- and 4-year partnerships and, as a result, are omitted from this table.

Exhibit 20. Average Costs per Student: By IHE Partner Sector (IHE)

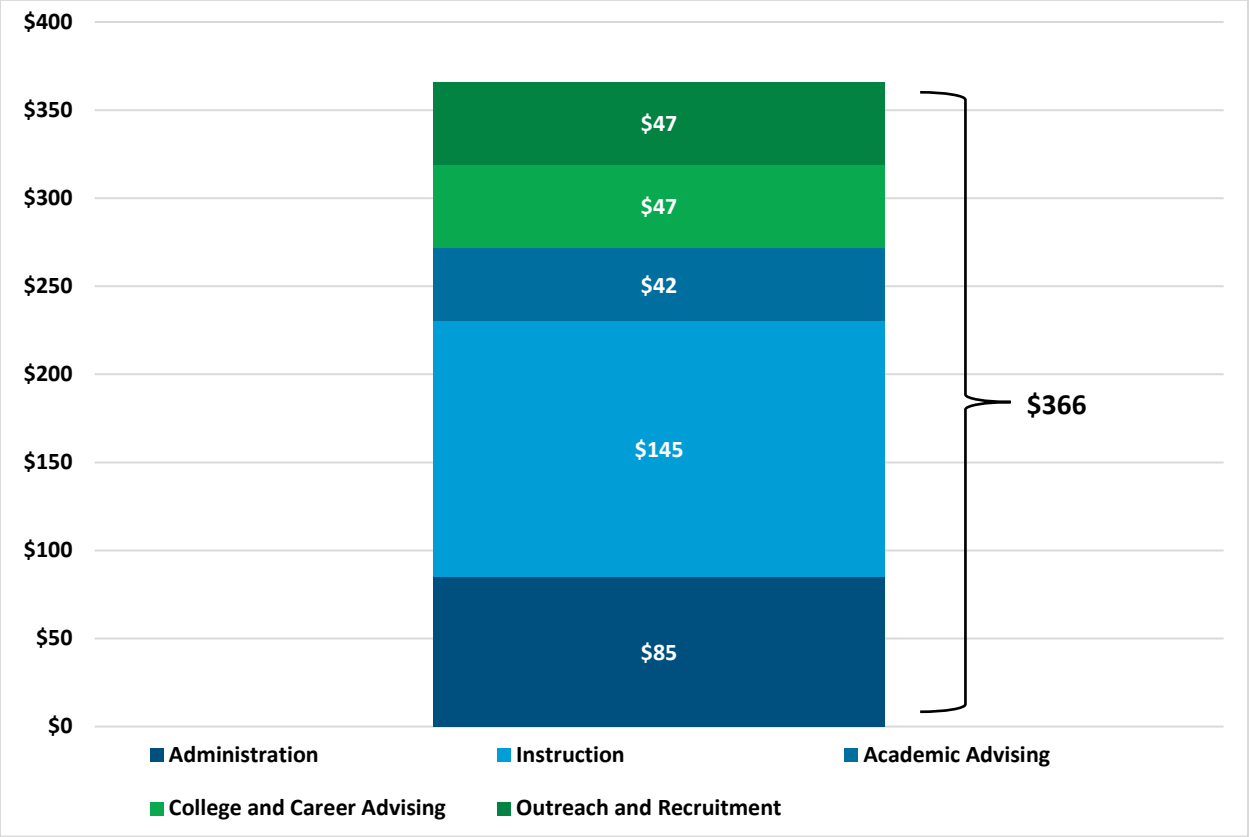
	IHE sector	
	2-year (n=10)	4-year (n=5)
Administration	$288	$899
Instruction	$585	$1,150
Academic advising	$197	$213
Nonacademic advising	$185	$448
College and career advising	$235	$203
Total	**$1,490**	**$2,913**

The higher costs incurred in each category within the 4-year sector likely reflects differences in salaries among faculty, staff, and other associated personnel.

Costs per Credit Hour

Since IHE partners are reimbursed per credit hour, we are able to analyze credit hour information for courses taught through an IHE partner. Exhibit 21 provides a breakdown of college costs per credit hour for all IHEs in our sample. Overall, the average cost per credit hour during the 2021–22 school year was $366. The bulk of these costs were instruction ($145 per credit hour), with administration having the second highest cost per credit hour, at $85. Academic advising, college and career advising, and outreach and recruitment each cost similar amounts, at $47, $47, and $42, respectively.

Exhibit 21. Average Costs per Credit Hour for IHEs



Program Implementation and Scaling

Research Question: What cost and funding factors may influence the expansion of EC programs?

Early College Program Funding

Survey respondents from high school EC programs reported that the primary source of funding at the high school during the 2021–22 academic year was grant funding from DESE (covering 25%–100% of the total costs). Remaining program funds were provided by school and city budgets, ESSER funding, private philanthropy, and general funds (Chapter 70).

IHE survey respondents reported that the main source of EC funding was the state tuition reimbursement, which is $150 per credit—below what is received through regular tuition for a similar course. Three IHEs fund 100% of their EC program with the state tuition reimbursement, two IHEs fund 75%, and six IHEs fund 40%–55%. Other sources of funding for IHEs included DESE/DHE grants, internal funding from the IHE, and external grants from the Commonwealth Dual Enrollment Partnership and State Street Foundation.

These findings were echoed by EC coordinators in interviews, who said that the designation grant from the state was the main source of funding for the program. Several programs were able to secure additional funding from business partners and private foundations, and some program expenses, such as staff time and transportation, were at least partially covered by school or district operating budgets. Respondents noted that the lack of adequate, secure, and consistent funding for Early College made it difficult for programs to invest in staffing, professional development, student-centered services, and equipment. They also noted that current state funding only supports Early College tuition, so other expenses must be absorbed by the school or district or covered by other grant funding. Some interview respondents described a web of 10 or more different types of funding to source support their EC programming.

Program Improvements With Additional Funds

Programs cited many ways they would improve their EC programs if additional funding were available. Survey and interview respondents agreed that increasing the number of staff to support the program at the high school and college is critical. Multiple programs indicated the need for additional **administrative support**. Some programs noted that this could include hiring a full-time administrative assistant for data entry, recruitment support, and general office work. One respondent noted that “having funding for a dedicated Early College administrative staff would take a lot of the data entry and general office work off of the coordinator and director.” High school respondents also felt that most programs need stable and sustained funding for an

EC director or coordinator to ensure consistent implementation that grounds the program over time.

Program respondents reported that additional funding could be used for **academic preparation and support**, including support to ensure curricular alignment between the high school and IHE, embedded tutors, academic coaches, and opportunities for students to prepare for college-level coursework as early as freshman year (e.g., an online course students would take prior to starting the EC program). All programs would like additional funding to expand their EC tutoring network, especially for English learners and students with disabilities. Some respondents also expressed interest in implementing an overnight summer program to help prepare incoming EC students. One IHE respondent stated, "Currently, academic supports are provided by the university, at the university's expense. No EC funding currently exists to fund the academic supports."

Programs also indicated that additional funding would be used to **support events and activities that bring awareness to the EC program** and help **establish a college-going culture** within a school, such as college visits and recruitment events. One respondent reported, "Events is an area we have not developed because there is not enough funding once classes and books are taken into account." In addition, all programs reported that funding for resources such as textbooks, laptops, and internet hotspots would help increase access to EC courses for all students and enhance college course completion. Survey and interview respondents also expressed a desire for more EC marketing materials and branded gear to help "build identity" among EC students.

Lastly, all surveyed high school and IHE respondents noted that additional funding would allow them to **transport students** to and from courses and events held on the college campus. Some programs would like additional bus routes so students can access courses at different times of the day. Others would like a dedicated EC van to take students on college visits and field trips.

Early College Program Expansion

Based on survey responses, at full scale, programs could serve between 40 and 300 students, with one district-wide program indicating a capacity of 1,000 students. Most programs, however, were unable to reach their enrollment goals for various reasons, including challenges related to the COVID-19 pandemic, the need for more EC courses and teachers, and scheduling conflicts between the high school and IHE partner. Still, all but four programs reported achieving their goal of enrolling students from underrepresented populations. One respondent, however, reported that a significant challenge for their program has been the COVID-19 vaccine

requirement, which disadvantages underrepresented populations, who are less likely to be vaccinated.[11]

All but five programs that responded to the survey expressed interest in expanding their EC programs, and are hoping to enroll more students, work with more IHEs, provide more intentional student support services, and offer more EC courses and academic pathways.

Challenges. Programs identified several challenges impacting expansion of EC programs. These challenges include a general need for more staff to help manage the program and support students—at the high school and at the partner IHE—as well as more staff to specifically participate in outreach to and recruitment of potential students, starting as early as middle school. A majority of surveyed programs expressed being extremely understaffed and lacking reliable funding to maintain staff members in the long term. One respondent reported that "staff are maxed out with responsibility," and another noted that it is "difficult to balance staffing given that we have to share people across programs and many programs want support at the same time of day."

Reflecting what was shared by many respondents in interviews and surveys, one respondent said, "Funding instability, complexity, and limitations have hindered program growth." As noted earlier, the limited funds for EC programs prohibit investments in staffing, professional development, student support, and equipment needed for expansion. In addition, some programs reported that the lack of funding limits students' access to textbooks or courses where tuition is not fully covered. Five programs reported that a lack of funding for transportation limits students' ability to attend in-person, on-campus EC classes.

Student interest in Early College can also limit a program's ability to expand. Respondents noted that students do not always know or understand what EC is, which limits students' interest, enrollment, and retention in the program. Interview respondents noted a need to support more intentionally participating students so that they persist in the program and can see a clear path forward to obtain a degree or certification. High school respondents said that providing more intentional and personalized student support would require greater commitment and resources from college partners, especially since high school staff are already stretched thin.

Finally, multiple programs struggle to enroll students due to scheduling. Additionally, many programs struggle to find faculty to teach EC courses. For some programs, there are few IHE faculty willing to teach EC courses due to the "perception among faculty that high school students require additional work." At the same time, high school faculty interested in teaching

[11] Since the time at which this report was originally drafted, the COVID-19 vaccine mandate for colleges has been lifted.

an EC course may not be able to because they lack a graduate degree in the target content area, which is required for teaching in some community colleges.

Opportunities. Although the COVID-19 pandemic further challenged EC programs, staff, and participating students, programs learned to adapt in numerous ways to maintain and sustain EC activities and supports through uncharted territory. All programs offered online courses and provided an array of virtual and in-person academic and nonacademic support services, including advising check-ins and tutoring services. Some programs also had dedicated blocks during the school day where EC students could receive academic support. Nonacademic support offerings included access to a food pantry and disability services, career workshops, virtual student–parent meetings, access to social workers and guidance counselors, and EC community events.

In addition, most programs shifted their recruitment strategies to offer in-person and virtual options for students and their families to learn about EC programming. Multiple programs offered EC information sessions and open house presentations in person and over Zoom. Some programs also took advantage of being virtual to reach out to parents and caregivers in the evening and through Zoom recordings.

These adaptations to highly challenging circumstances are evidence of the resilience of programs and the persistence and commitment of EC staff and students, all of which are intrinsic ingredients for the expansion of EC programs. As reported by survey respondents, some of the adaptations remain in the current school year and can buttress expansion efforts. For example, most programs continue to offer hybrid and virtual EC courses, increasing course-taking options for students. Across programs, all academic and nonacademic support services are now offered in person and virtually. Counselors are making a concerted effort to host virtual meetings in the evenings to accommodate students' after-school activities and parents' schedules. Regarding recruitment, all programs have continued to offer in-person and virtual information sessions, and are maintaining remote outreach "because it works well with parents."

Conclusion

Understanding the costs and scalability of EC programs is an essential first step in determining where additional fiscal and programmatic support is most needed. Carefully quantifying the resources necessary to implement and execute these programs can reveal a great deal about how they are serving students in the Commonwealth and what might make sense for future program design. Our analyses revealed several insights that could inform the EC program moving forward.

Across EC programs, the average cost per student served by an EC program during the 2021–22 school year was $3,682, with an average cost per student of $1,879 for high school EC programs and $1,803 for IHE EC programs. On average, instruction was the most expensive cost component, followed by administration costs. Together these categories account for over half of EC program costs.

Differences in programs costs emerged based on various program characteristics:

- **Program Maturity.** More mature EC programs spend less per student, with the largest reduction in administration costs, followed by instruction costs. Differences in costs between program types could be due to high startup costs for new programs and the development of economies of scale as programs mature.
- **Sector.** Costs per student are significantly higher in EC programs with 4-year IHE partners versus 2-year IHE partnerships. Differences in costs between these IHE sectors are predominantly driven by staff and faculty compensation, as 4-year colleges provide higher salaries and benefits to their employees than their 2-year counterparts. It is an open question whether 4-year institutions can offset some of these increased costs with increased recruitment of EC students.
- **Program Size (Student Enrollment).** The size of EC programs is related to their overall cost, with small EC programs incurring the highest costs and large EC programs incurring the lowest costs. The trend observed in the data suggests that as the program size increases, the cost per student decreases. These findings suggest that larger programs may have access to economies of scale, decreasing the cost per student as the program enrollment grows.
- **Cost per Credit Hour**. The average cost per credit hour to IHEs is approximately $366, which is considerably higher than the current tuition reimbursement rate of $150 per credit hour. The $366 cost per credit hour is an average across the IHE programs that provided data. The per-institution costs varied within the sample (and likely outside of the sample). It does seem evident that the costs to IHEs are more than the reimbursements they received.

In order to gain a more complete understanding of the cost of EC programs, future research should focus on:

- **Cost-Effectiveness of EC Programs.** By collecting more detailed information on student enrollment and outcomes, stakeholders in Massachusetts can conduct a cost-effectiveness study that assesses the return on investment for these programs. Such analysis is crucial, as it helps decision-makers allocate limited programmatic funds to the areas that require more investment or identify those programs that are extraordinary and most worthy of replication.

- **Intensive Student Support Costs.** Survey respondents identified the academic, nonacademic, and college and career readiness supports their EC program provides. On whole, program provided those supports universally to all EC participants (e.g., tutoring, success seminars, career fairs). For example, there are costs for supplemental instruction to accelerate student learning and readiness to participate successfully in EC programs, and costs related to investments in more robust and targeted outreach and recruitment activities to ensure equitable access to EC programs by underrepresented students. Future research can identify what those targeted and intensive supports are that EC programs provide students and their associated costs.

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Appendix A. Detailed Methodology

The cost of EC programs refers to the monetary value of resources invested by colleges, school districts, and high schools to provide EC programming. It is important to note that state funding for colleges and K-12 school districts, as well as tuition payments, are not considered costs but rather cash transfers that shift the burden of cost. It was our aim to capture all of the resources (e.g., ingredients) required to operate the average EC program in the state, rather than focusing on which entities bear the financial burden of the resources employed. To our knowledge, our studies represent the state's first efforts to explicitly quantify the detailed costs devoted to EC.

Our analysis examines the personnel and nonpersonnel resources required to deliver EC programs, as well as the corresponding costs associated with these resources. The cost information provided in this report potentially can be used to inform EC program development at a new site and assess its feasibility, whether that site was in Massachusetts or in a comparable state, aiming to develop and deploy an EC program similar to the designated programs discussed in this report. These data are not only important for estimating costs, but also for making resource allocation decisions that can enhance the delivery of EC programs. Understanding the cost of providing EC also is essential for ensuring the sustainability of such programs over time.

We utilized the ingredients approach to cost out educational services as developed by Levin et al. (2018). This involved identifying the additional costs associated with providing EC programs, such as personnel and nonpersonnel resources, and costing out each ingredient based on quantities and unit prices. We categorized the ingredients by personnel and nonpersonnel resources and by functional cost categories. This approach allowed us to break down the overall costs and costs per student in several ways. The costs we considered were solely related to the provision of EC and were not part of the general operation of schools.

To conduct the cost analysis, we made use of both extant and primary data sources. The extant data included statewide data obtained from DESE and DHE on Early College enrollment as well as program characteristics such as location, IHE and K-12 district partnerships, and years in operation. We also analyzed self-reported data from surveys and interviews. These primary data collection efforts with postsecondary partners and K-12 sites allowed us to gather more detailed information on the design and implementation of EC programs. The interviews helped us to understand how EC was delivered at each responding site and to identify the specific resources required for delivery. For instance, we learned that each K-12 partner had at least one administrator responsible for overseeing Early College (though often more), but the extent

of their responsibilities and support varied between schools and districts. We asked interviewees and survey respondents to estimate the percentage of time spent by the various staff involved with EC activities to calculate the cost of delivering EC programs.

We developed a resource cost model (RCM) to determine the overall costs associated with the EC programs. The RCM was created using Microsoft Excel and involved organizing resources identified through interviews, surveys, and extant data, applying prices, and calculating overall costs, costs per student, and costs per credit hour. To determine costs accurately, we needed prices and quantities of resources. Interviews, surveys, and extant data provided this information in most cases. In the remaining cases, we made assumptions based on estimates or used alternative sources of information to determine prices.

Personnel costs, primarily in the form of salaries and benefits, comprised the bulk of resources allocated, according to survey and interview respondents. Respondents, through primary data collection, provided information on each staff member devoting time and resources to EC programs. These roles primarily included administrators, instructors, advisors, and counselors at both K-12 and IHE sites. The information collected included position title, years of experience, highest credential earned, and time allocated to EC programmatic efforts, broken out across the 6 cost categories:

- **Administration.** Personnel and nonpersonnel costs related to the management and coordination of the EC program (e.g., developing class schedules, managing relationships with partners, compiling and reporting EC-relevant data).
- **Instruction.** Personnel and nonpersonnel costs related to instruction within the EC program (e.g., staff salaries, program equipment, professional development).
- **Academic Advising.** Personnel and nonpersonnel costs related to providing supports that focus directly on academic content and are designed to encourage academic success (e.g., tutoring, embedded classroom student advocate).
- **Nonacademic Advising.** Personnel and nonpersonnel costs related to providing supports without a direct focus on academic content and are designed to encourage academic success (e.g., success seminars, check-in meetings, parent/family night).
- **College and Career Advising.** Personnel and nonpersonnel costs related to providing supports designed to encourage college and career success (e.g., career fairs, FAFSA workshop).

- **Recruitment and Outreach.** Personnel and nonpersonnel costs related to program recruitment and outreach (e.g., developing informational materials, hosting open house/information sessions).

We then used the information collected to price out the salaries and benefits of each staff member reported in an interview or survey. Salary information was collected from a variety of sources including individual data on GovSalaries.com as well as aggregated information from DESE School and District Profiles, Glassdoor, and the Integrated Postsecondary Education Data System, among others[12]. We supplemented the salary information with district-level benefit rate information collected and published by the United States Census Bureau. These detailed benefit rates allowed us to capture the variation across finely grained geographic regions within the state to ensure that our personnel costs were estimated as accurately as possible.

Though personnel costs comprise the majority of costs incurred by each EC program, significant efforts were made to capture nonpersonnel costs as well. Some of the most prominent nonpersonnel costs included textbooks, computer software, and transportation. These items were reported by programs through interviews and on the surveys administered. Reported details were then used to find market prices from a variety of sources, including a database of education-related products published for the explicit purpose of conducting cost studies by Teachers College (e.g., E$timator). We also found prices for transportation from various transportation providers in Massachusetts, and, when necessary, priced monthly bus pass rates in those regions with more readily accessible public transportation. In some instances, respondents indicated a specific transportation or recruitment cost, rather than discussing the resources necessary in detail. In those instances, we included the costs enumerated, as doing so ensured that all potential costs were captured.

Acquiring personnel and nonpersonnel costs from the most accurate sources is paramount, though a sometimes overlooked component of that costing process is ensuring all costs are expressed or adjusted to the same year and adjusted to reflect regional differences in costs. Thus, each cost collected from the sources mentioned is inflated to the 2022 fiscal year using Bureau of Economic Analysis's inflation calculator. This approach ensures that all estimates are presented in 2022 constant dollars. Moreover, to account for differences in costs that vary across the state (e.g., rural vs. urban), we make use of the American Community Survey's Comparable Wage Index for Teachers (ACS-CWIFT). The ACS-CWIFT was created for the explicit purpose of facilitating comparisons of educational expenditures across locales. The data are publicly available and aggregated across several geographic units. For the purposes of our study, we adjusted at the smallest geographic unit available: the K-12 school district. This

[12] For a complete list, see Appendix E.

approach helps ensure that we are accounting for cost differences as accurately as available data will allow.

Appendix B. Data Elements: Early College Program Characteristics Database

Exhibit B-1 lists the individual data elements used to inform the development of the EC typology used for the study.

Exhibit B–1. Typology Data Elements

Category	Data element
General information	District Name [Text] High School Name [Text] District with more than one high school [Yes/No]
Designation	Designation Season [Text] Earliest Designation Year [Text] Fall Year of Implementation [Text] Years in Operation [Count]
Location	Locale [Text] County [Text] Region [Text] School Enrollment [Count]
EC program participants (overall, race, economically disadvantaged)	Grade 9 EC Program Enrollment (2021–22) [Count] Grade 10 EC Program Enrollment (2021–22) [Count] Grade 11 EC Program Enrollment (2021–22) [Count] Grade 12 EC Program Enrollment (2021–22) [Count] Total EC Program Enrollment (2021–22) [Count]
School enrollment (overall, race, URM, high needs)	Grade 9 Enrollment (2021–22) [Count] Grade 10 Program Enrollment (2021–22) [Count] Grade 11 Program Enrollment (2021–22) [Count] Grade 12 Program Enrollment (2021–22) [Count] Total Program Enrollment (2021–22) [Count]
Institution of higher education (IHE) partners	College Name [Text] Sector [Text] Control [Text]

Category	Data element
Credits attempted	HS to IHE A: Fall 2021 Total Credits Attempted HS to IHE A: Spring 2021 Total Credits Attempted HS to IHE B: Fall 2021 Total Credits Attempted HS to IHE B: Spring 2021 Total Credits Attempted
Instruction	Type of Instruction [Text] Modality of Instruction [Text] Location of Instruction [Text]
Other pathway programs	After Dark Programs [Yes/No] Chapter 74 Approved Programs [Yes/No] Innovation Pathways [Yes/No] Non-Chapter 74 Programs [Yes/No] Other Pathway Programs [Yes/No]

Appendix C. Interview Protocols

AIR developed two semi-structured interview protocols – one for high school EC coordinators/administrators and one for IHE EC coordinators. As part of the protocol, AIR researchers asked participants to keep the following context in mind as they answered the questions:

- The interview focuses on the school's **designated** Early College program, not other dual credit or pilot Early College programs that are not designated.
- All questions are about the **2021–22 school year**.
- We are not specifically interested in what is funded and not funded. Rather, we would like to know about the **resources or "ingredients" that are necessary to implement the EC program**.

Early College Program High School Coordinators/Administrators

Exhibit C-1 lists the questions included within the interview protocol for Early College program high school coordinators/administrators.

Exhibit C–1. Interview Protocol: EC High School Coordinators/Administrators

Topic	Questions
Program Context	1. I would like to start by asking you to tell me about some of the key features of the EC program at your school. ○ Is there anything that is unique or different compared to other EC programs?
	2. Does the EC program share or leverage staffing or resources with any other pathway program at the school? ○ [If yes] What is the other program and resources shared?
Administration	3. Who at [SCHOOL] manages, oversees, or coordinates the EC program?
	4. For each person, please tell me: ○ What their job title is at the school/district ○ What their EC responsibilities are ○ Their years of experience in education ○ Their highest degree earned ○ The approximate percentage of time they spend supporting the program in a typical work week

Topic	Questions
	5. Do these individuals receive a stipend or other type of compensation for their EC work? ○ [If yes] Would you be able to estimate the amount given in the previous school year?
	6. Is there dedicated office space reserved for staff who manage, oversee, or coordinate the EC program at [SCHOOL]? ○ [If yes] Please describe the space.
Instruction	7. How many teachers at this school provide instruction for the EC program?
	8. For each person, please tell me: ○ What their EC responsibilities are ○ Their years of experience in education ○ Their highest degree earned ○ The approximate percentage of time they spend supporting the program in a typical work week
	9. Do instructional staff receive training to prepare them for their EC teaching responsibilities? ○ [If yes] Who provides the training? How much time does the training take?
	10. Do instructional staff receive a stipend or other type of compensation for teaching or supporting EC coursework? ○ [If yes] Would you be able to estimate the amount given in the previous school year?
	11. Do instructional staff typically have to devote additional time for EC students outside of school hours? ○ [If yes] How much time in a typical week?
	12. What types of instructional materials, technology, and/or supplies does [SCHOOL] or the district purchase to support EC instruction? ○ To what extent do the costs of materials and supplies differ across different pathways?
	13. Is there dedicated space reserved for EC instruction at [SCHOOL]? ○ [If yes] Please describe the space.
Advising and Support	14. What supports, services, or activities does the school provide to EC students to help them succeed in the program? ○ Who is involved in providing these supports, services, or activities?
	15. For each person, please tell me: ○ What their job title is at the school/district ○ What their EC responsibilities are

Topic	Questions
	○ Their years of experience in education ○ Their highest degree earned ○ The approximate percentage of time they spend supporting the program in a typical work week
	16. Do individuals providing support receive any training to prepare them for their EC responsibilities? ○ [If yes] Who provides the training? How much time does the training take?
	17. Do these individuals receive a stipend or other type of compensation for their EC work? ○ [If yes] Would you be able to estimate the amount given in the previous school year?
	18. Do these individuals providing support typically have to devote additional time EC students outside of school hours? ○ [If yes] How much time in a typical week?
Outreach and Recruitment	19. Briefly, what does outreach and recruitment to students and families for EC program look like at [SCHOOL]? ○ Who is involved in outreach and recruitment activities from the [SCHOOL]?
	20. For each person, please tell me: ○ What their job title is at the school/district ○ What the EC responsibilities are ○ Their years of experience in education ○ Their highest degree earned ○ The approximate percentage of time they spend supporting the program in a typical work week
	21. Do these individuals receive a stipend or other type of compensation for the EC work? ○ [If yes] Would you be able to estimate the amount given in the previous school year?
	22. What kinds of outreach and recruitment materials are typically produced by [SCHOOL]? ○ Do materials need to be translated?
Other Costs	23. Is transportation provided EC students? ○ [If yes] Who provides the transportation? How often is transportation provided? What is the average distance of each trip?
	24. Are students participating in internships as part of EC program compensated?

Topic	Questions
	○ [If yes] Who pays? What is the estimated cost in a typical school year?
	25. Are participating EC students given anything as rewards or incentives for performance? ○ [If yes] What is given to students? Who pays for it? What is the estimated cost in a typical school year?
	26. Are there any other EC- related costs that the school incurs or resources that the program uses that we haven't already talked about?
Funding	27. What are the main sources of funding for the EC program?
	28. What would you like to do, add, or improve upon if you had more funding for the program?
Expansion	29. Given the current level of resources for the EC program, what is the ideal number of students that the program could serve? ○ Is the program serving this many students? If not, why not?
	30. If [SCHOOL] wanted to expand the program to serve more students, what would you need to have in place that you currently don't have? ○ Does the school plan to expand?

Early College IHE Coordinators

Exhibit C-2 lists the questions included within the interview protocol for Early College IHE coordinators.

Exhibit C–2. Interview Protocol: IHE EC Coordinators

Topic	Questions
Partnership	1. I would like to start by asking you to tell me about some of the key features of the partnership between [IHE] and [HIGH SCHOOL] for the Early College program.
	2. Does [IHE] work with other schools as part of their EC program? ○ [If yes] Does your partnership with [HIGH SCHOOL] differ in any way compared to your partnership with other schools?
Administration	3. Who at the [IHE] manages, oversees, or coordinates the EC program with [HIGH SCHOOL]?
	4. For each person, please tell me: ○ Their job title at [IHE] ○ What their EC responsibilities are ○ Their years of experience in education

Topic	Questions
	○ Their highest degree earned ○ The approximate percentage of time they spend supporting the program in a typical work week
	5. Did these individuals receive training to prepare them for their EC responsibilities? ○ [If yes] Who provided the training? How much time did the training take?
	6. Did these individuals receive a stipend or other type of compensation for their EC work with [HIGH SCHOOL]? ○ [If yes] Who provided the stipend or compensation? Would you be able to tell me how much was given to each person?
Instruction	7. How many college faculty members provide instruction for the EC program at [HIGH SCHOOL]?
	8. For each person, please tell me: ○ What they teach ○ Their years of experience in education ○ Their highest degree earned ○ The approximate percentage of time they spend supporting the program in a typical work week
	9. Do these individuals receive training to prepare them for their EC responsibilities? ○ [If yes] Who provided the training? How much time did the training take?
	10. How are these individuals compensated for the EC classes they teach? ○ Who pays?
	11. Is there dedicated space reserved for EC instruction at [IHE]? ○ [If yes] Please describe the space
Advising and Support	12. Is there anyone at [IHE] who provides supports to EC students to help them succeed in the program?
	13. For each person, please tell me: ○ What their job title is at [IHE] ○ What their EC responsibilities are ○ Their years of experience in education ○ Their highest degree earned ○ The approximate percentage of time they spend supporting the program in a typical work week

Topic	Questions
	14. Do these individuals receive training to prepare them for their EC responsibilities? ○ [If yes] Who provided the training? How much time did the training take?
	15. Did these individuals receive a stipend or other type of compensation for their EC work with [HIGH SCHOOL]? ○ [If yes] Who provided the stipend or compensation? Would you be able to tell me how much was given to each person?
Outreach and Recruitment	16. Is there anyone at your institution working with [HIGH SCHOOL] to help recruit high school students to participate in the EC program?
	17. For each person, please tell me: ○ What their job title is at [IHE] ○ What their EC responsibilities are ○ Their years of experience in education ○ Their highest degree earned ○ The approximate percentage of time they spend supporting the program in a typical work week
	18. Do these individuals receive training to prepare them for their EC responsibilities? ○ [If yes] Who provides the training? How much time does the training take?
	19. Do these individuals receive a stipend or other type of compensation for their EC work with [HIGH SCHOOL]? ○ [If yes] Who provides the stipend or compensation? Would you be able to tell me how much is given to each person?
Other Costs	20. Does your institution provide transportation to EC students? ○ [If yes] How often is transportation provided? What is the average distance of each trip?
	21. Does your institution reward or incentivize EC students in any way? ○ [If yes] What is provided to students? What is the estimated cost to your institution in a typical school year?
	22. Does [IHE] reserve space on campus for EC students to use? ○ Please describe the space and how EC students use it.
	23. Does your institution provide anything else to support the EC program or participating students at [HIGH SCHOOL]?
	24. Is there anything else that we should know about [IHE's] support for the EC program and participating students at [HIGH SCHOOL]?

Topic	Questions
Partnership	1. I want to start by asking you to briefly talk about how the partnership between [COMPANY/ORGANIZATION] and [SCHOOL] came to be. – What was the impetus for the partnership?
	2. In the previous school year (2021–22), how did your company/organization/institution support the Early College program or students at [HIGH SCHOOL]?
Personnel	3. How many people in your company/organization/institution are involved in the EC program?
	4. For each person, please tell me: – Their job title at [COMPANY/ORGANIZATION] – Their years of experience in the industry or company/org/institution – Their educational background/highest degree earned – How much time they spend on IP
	5. Did these individuals receive training to prepare them for their EC responsibilities? – [If yes] Who provided the training? How much time did the training take?
	6. Did these individuals receive a stipend or other type of compensation for their EC work with [HIGH SCHOOL]? – [If yes] Who provided the stipend or compensation? Would you be able to tell me how much was given to each person?
Other Costs or Resources	7. Were students who interned at your company/organization compensated? – [If yes] How much were students compensated? Who paid for this? How many student interns?
	8. Did [COMPANY/ORGANIZATION] reward or incentivize EC students in any way? – [If yes] What was provided to students? What was the estimated cost to your company/organization in a typical school year?
	9. Did your company/organization provide anything else to support the EC program or participating students at [HIGH SCHOOL] in the previous school year?
	10. Is there anything else that I should know about the partnership between [COMPANY/ORGANIZATION] and [HIGH SCHOOL]?

Appendix D. Survey Instruments

AIR developed two surveys – one for high school EC coordinators and one for IHE EC coordinators. Surveys were administered through Qualtrics and included skip logic to display questions and response options based on the information provided by each respondent.

Early College High School Coordinators

Program Context

This survey focuses on [SCHOOL]'s **designated Early College**, not any other dual credit, concurrent enrollment, or pilot programs not officially designated by DESE.

All questions are about the most recently completed school year (2021-2022 academic year)

AIR is not specifically interested in allocated program funding (e.g., implementation grants) or program budget documents. Rather, AIR would like to collect information on the personnel and non-personnel resources or "ingredients" that are necessary to implement and operate the EC program. Since this is a partnership, we recognize that there may be some costs related to your program that are covered by your partner institution. Please only reference the costs associated with your institution.

The survey consists of six sections:

- Administration
- Instruction
- Advising & Support
- Outreach & Recruitment
- Miscellaneous
- Scaling & Expansion

To the best of your ability, please allocate the resources accurately within each of these cost categories. A description of each category is included at the beginning of each section.

During the 2021-22 academic year, did the EC program share or leverage staffing or resources with any other dual enrollment program at the school?

- ○ Yes, other designated Early College programs
- ○ Yes, other non-designated pathway or dual enrollment programs
- ○ No

[If yes, other designated Early College programs] The next set of questions ask about the resources shared with **OTHER** designated Early College programs during the 2021-22 academic year. We are interested in what you shared and the percentage of resources shared with **OTHER** designated Early College programs.

What were the resources shared with other designated Early College programs during the 2021-22 academic year? *Select all that apply.*

Staff

Equipment/materials (please specify) [Text box]

Other (please specify) [Text box]

[If staff] What was the percentage of **STAFF TIME** shared with other designated Early College programs during the 2021-22 academic year? *Include both full time and part time staff that are contributing hours to your designated Early College program.* [Text box]

[If equipment/materials] What was the percentage of **EQUIPMENT/MATERIALS** shared with other designated Early College programs during the 2021-22 academic year? [Text box]

[If other] What was the percentage of [**OTHER**] shared with other designated Early College programs during the 2021-22 academic year? [Text box]

[If yes, other non-designated pathway or dual enrollment program] The next set of questions ask about the resources shared with **NON-DESIGNATED** pathway or dual enrollment programs during the 2021-22 academic year. We are interested in what you shared and the percentage of resources shared with **NON-DESIGNATED** pathway or dual enrollment programs.

What were the resources shared with other non-designated pathway or dual enrollment programs during the 2021-22 academic year? *Select all that apply.*

- ○ Staff
- ○ Equipment/materials (please specify) [Text box]
- ○ Other (please specify) [Text box]

[If staff] What was the percentage of **STAFF TIME** shared with other non-designated pathway or dual enrollment programs during the 2021-22 academic year? *Include both full time and part time staff that are contributing hours to your non-designated pathway or dual enrollment programs.* [Text box]

[If equipment/materials] What was the percentage of **EQUIPMENT/MATERIALS** shared with other non-designated pathway or dual enrollment programs during the 2021-22 academic year? [Text box]

[If other] What was the percentage of [**OTHER**] shared with other non-designated pathway or dual enrollment programs during the 2021-22 academic year? [Text box]

Administration

The following questions ask about employees who **managed, oversaw, or coordinated** the EC program at [SCHOOL]. Responsibilities for these employees could include working on EC class schedules, managing relationships with partners, communicating with parents, compiling and reporting EC-relevant data, etc.

All questions are about the most recently completed school year (2021-2022 academic year).

In the **2021-2022 school year**, how many employees at [SCHOOL] **managed, oversaw, or coordinated** the EC program? Responsibilities could include working on EC class schedules, managing relationships with partners, communicating with parents, compiling and reporting EC-relevant data, etc. (*If zero, please enter 0*) [Text box]

Please include all full-time and part-time staff, and staff who are completely or partially dedicated to EC.

For each staff member that contributed **to the administration** of the Early College program, please provide the following information:

For the allocation of staff time below, please only include time spent on [SCHOOL]'s EC program.

Name	Job Title	Years of Professional Experience	Highest Degree Earned	% Weekly Time Spent on EC	Employee Status
	[Dropdown] Teacher, EC Coordinator/Director, Counselor, Assistant	[Dropdown] 1-30+	[Dropdown] Associate's, Bachelor's,	[Dropdown] 5%-100%	[Dropdown] Full-time grant-funded,

Name	Job Title	Years of Professional Experience	Highest Degree Earned	% Weekly Time Spent on EC	Employee Status
Staff Member [# 1-15}	Principal, Principal, Other		Master's, Doctorate		Part-time grant-funded, Full-time institutionally-funded, Part-time institutionally-funded

[If "Other" Job Title] What are the other job titles?

Staff Member	Other Job Title Please Specify
Staff Member [# 1-15}	[Textbox]

In addition to their regular pay, did these individuals receive a stipend or other type of compensation for their EC work during the 2021-2022 academic year?

- ○ Yes
- ○ No

[If yes] What was the estimated amount of stipend or compensation given during the **2021-2022 academic year**? [Text box]

Instruction

The next set of questions asks about staff who contributed to **instruction** in the designated EC program at [SCHOOL].

All questions are about the most recently completed school year (2021-2022 academic year).

In the **2021-2022 school year**, how many employees provided **instruction** for the EC program? Employees providing instruction can be high school instructors or college instructors. (If zero, please enter 0). *Please include all full-time and part-time staff, and staff who are completely or partially dedicated to EC.* [Text box]

For each staff member that contributed to **instruction** for [SCHOOL] in the **Early College** program in the **2021-2022 school year**, please provide their job title, years of experience, highest degree earned, and time spent on EC. *Please include all full-time and part-time staff, and staff who are completely or partially dedicated to EC.*

For the allocation of staff time below, please only include time spent on [SCHOOL]'s EC program.

Staff Member	Job Title	Years of Professional Experience	Highest Degree Earned	% Weekly Time Spent on EC	Employee Status
Staff Member [# 1-15}	[Dropdown] Teacher, EC Coordinator/Director, Counselor, Assistant Principal, Principal, Other	[Dropdown] 1-30+	[Dropdown] Associate's, Bachelor's, Master's, Doctorate	[Dropdown] 5%-100%	[Dropdown] Full-time grant-funded, Part-time grant-funded, Full-time institutionally-funded, Part-time institutionally-funded

[If "Other" Job Title] What are the other job titles?

Staff Member	Other Job Title Please Specify
Staff Member [# 1-15}	[Textbox]

For each staff member that contributed to **instruction** to the Early College program in the **FALL semester of the 2021-2022 school year**, please provide the number of courses taught, total number of students, and the modality for each class taught. *Please include all full-time and part-time staff, and staff who are completely or partially dedicated to EC.*

Staff Member	# Courses taught during the FALL semester	Total # of EC students taught/supported during the FALL semester	Modality of classes during the FALL semester. (Select all that apply)			
			In-person HS	In-person College	Remote	Hybrid
Staff Member [# 1-15}	[Text box]	[Text box]				

For each staff member that contributed to **instruction** to the Early College program in the **SPRING semester of the 2021-2022 school year**, please provide the number of courses taught, total number of students, and the modality for each class taught. *Please include all full-time and part-time staff, and staff who are completely or partially dedicated to EC.*

Staff Member	# Courses taught during the SPRING semester	Total # of EC students taught/supported during the SPRING semester	Modality of classes during the SPRING semester. (Select all that apply)			
			In-person HS	In-person College	Remote	Hybrid
Staff Member [# 1-15}	[Text box]	[Text box]				

Did instructional staff receive professional development to prepare them for their EC teaching responsibilities during the **2021-2022 academic year**?

- ○ Yes
- ○ No

[If yes] Who provided the professional development for instructional staff to prepare them for their EC teaching responsibilities during the **2021-2022 academic year**? For each role, please provide the total hours. *Enter all that apply.*

Role	Total PD Hours
High school leadership	[Dropdown] 1-60+
College leadership	[Dropdown] 1-60+
College faculty	[Dropdown] 1-60+
High school faculty	[Dropdown] 1-60+
Non-profit agency	[Dropdown] 1-60+
Other (please specify) [Text box]	[Dropdown] 1-60+

In addition to regular pay, did **instructional staff** receive a stipend or other type of compensation for teaching or supporting EC coursework during the **2021-2022 academic year**?

- ○ Yes
- ○ No

[If yes] What was the approximate amount of stipend or compensation given during the **2021-2022 academic year**? [Text box]

Did instructional staff devote additional time for EC students outside of instructional time in class?

- ○ Yes
- ○ No

[If yes] On average per week, how much additional time do staff devote to supporting EC students compared to their peers?

- ○ Less than 1 hour
- ○ Between 1-2 hours
- ○ Between 3-4 hours
- ○ 5 hours or more

What types of instructional materials, technology, and/or supplies did [SCHOOL] USE (not purchase) to support EC instruction? *Choose all that apply.*

Textbooks

Equipment

Hardware

Software

Open educational resources

Other (please specify) [Text box]

[If textbooks] About how many **TEXTBOOKS** did you provide to support EC instruction during the 2021-22 academic year? [Text box]

[If equipment] What kind of **EQUIPMENT** did you provide to support EC instruction during the 2021-22 academic year? [Text box]

[If hardware] What kind of **HARDWARE** did you provide to support EC instruction during the 2021-22 academic year? [Text box]

[If software] What kind of **SOFTWARE** did you provide to support EC instruction during the 2021-22 academic year? [Text box]

[If open educational resources] What **OPEN EDUCATIONAL RESOURCES** did you provide to support EC instruction during the 2021-22 academic year? [Text box]

How many course sections were taught in [SCHOOL] 's EC program **during the 2021-22 academic year**? [Text box]

What was the population of students in the course sections during the 2021-22 academic year?

- ○ Cohorted/EC students only
- ○ Mix of EC and other high school students (e.g., high school students only)
- ○ Mix of college and high school students
- ○ Other (please specify*)* [Text box]

Advising & Support

The next set of questions asks about staff who contributed to **advising and support** for the designated ECs program at [SCHOOL].

Support includes 3 sections:

- Academic supports are designed to encourage academic success and deal ***DIRECTLY*** with academic content and scholarly success. For example, weekly seminar/check-ins with staff concerning academics, and embedded classroom student advocate/high school teacher in classes with EC students, etc.
- Non-academic supports are designed to encourage academic success, but ***DO NOT DEAL DIRECTLY*** with academic content. For example, orientation, weekly success seminars/check-ins, open house/parent/family night, college student speaker panel, etc.

- College/career supports are designed to encourage college/career success. This may include resume workshops, virtual career fairs, FAFSA workshops, college application process workshops, etc.

All questions are about the most recently completed school year (2021-2022 academic year).

In the 2021-2022 school year, how many employees at [SCHOOL] were involved in providing **academic** supports, services, or activities to Early College students? (If zero, please enter 0). *Please include all full-time and part-time staff, and staff who are completely or partially dedicated to EC.* [Text box]

> Examples of academic support include tutoring services, weekly seminar/check-ins with staff concerning academics, and embedded classroom student advocate/high school teacher in classes with EC students.

For each staff member that contributed **to academic advising/supporting** Early College students in the **2021-2022 school year**, please provide their job title, years of professional experience, highest degree earned, percent weekly time spent on designated EC programs, and employee status. *Please include all full-time and part-time staff, and staff who are completely or partially dedicated to EC.*

For the allocation of staff time below, please only include time spent on [SCHOOL]'s EC program.

Staff Member	Job Title	Years of Professional Experience	Highest Degree Earned	% Weekly Time Spent on EC	Employee Status
Staff Member [# 1-15}	[Dropdown] Teacher, EC Coordinator/Director, Counselor, Assistant Principal, Principal, Other	[Dropdown] 1-30+	[Dropdown] Associate's, Bachelor's, Master's, Doctorate	[Dropdown] 5%-100%	[Dropdown] Full-time grant-funded, Part-time grant-funded, Full-time institutionally-funded, Part-time institutionally-funded

[If “Other” Job Title] What are the other job titles?

Staff Member	Other Job Title Please Specify
Staff Member [# 1-15}	[Textbox]

In the 2021-2022 school year, how many employees at [SCHOOL] were involved in providing **non-academic** supports, services, or activities to Early College students? (If zero, please enter 0). *Please include all full-time and part-time staff, and staff who are completely or partially dedicated to EC* [Text box]

> Examples of non-academic support include orientation, weekly success seminars/check-ins, open house/parent/family night, college student speaker panel, etc.

For each staff member that contributed to **non-academic advising/supporting** Early College students in the **2021-2022 school year**, please provide their job title, years of professional experience, highest degree earned, percent weekly time spent on designated EC programs, and employee status. *Please include all full-time and part-time staff, and staff who are completely or partially dedicated to EC.*

For the allocation of staff time below, please only include time spent on [SCHOOL]'s EC program.

Staff Member	Job Title	Years of Professional Experience	Highest Degree Earned	% Weekly Time Spent on EC	Employee Status
Staff Member [# 1-15}	[Dropdown] Teacher, EC Coordinator/Director, Counselor, Assistant Principal, Principal, Other	[Dropdown] 1-30+	[Dropdown] Associate’s, Bachelor’s, Master’s, Doctorate	[Dropdown] 5%-100%	[Dropdown] Full-time grant-funded, Part-time grant-funded, Full-time institutionally-funded, Part-time institutionally-funded

[If “Other” Job Title] What are the other job titles?

Staff Member	Other Job Title Please Specify
Staff Member [# 1-15}	[Textbox]

In the 2021-2022 school year, how many employees at [SCHOOL] were involved in providing **college/career** supports, services, or activities to Early College students? (If zero, please enter 0). *Please include all full-time and part-time staff, and staff who are completely or partially dedicated to EC.* [Text box]

> Examples of college/career support include resume workshops, virtual career fairs, FAFSA workshops, college application process workshops, etc.

For each staff member that contributed to **college/career advising/supporting** Early College students in the **2021-2022 school year**, please provide their job title, years of professional experience, highest degree earned, time spent on EC, and employee status. *Please include all full-time and part-time staff, and staff who are completely or partially dedicated to EC.*

For the allocation of staff time below, please only include time spent on [SCHOOL]'s EC program.

Staff Member	Job Title	Years of Professional Experience	Highest Degree Earned	% Weekly Time Spent on EC	Employee Status
Staff Member [# 1-15}	[Dropdown] Teacher, EC Coordinator/Director, Counselor, Assistant Principal, Principal, Other	[Dropdown] 1-30+	[Dropdown] Associate’s, Bachelor’s, Master’s, Doctorate	[Dropdown] 5%-100%	[Dropdown] Full-time grant-funded, Part-time grant-funded, Full-time institutionally-funded, Part-time institutionally-funded

[If “Other” Job Title] What are the other job titles?

Staff Member	Other Job Title Please Specify
Staff Member [# 1-15}	[Textbox]

What **ACADEMIC** supports, services, or activities did [SCHOOL] provide to EC students to help them succeed in the program in the **2021-2022 school year**?

For each **ACADEMIC** support, service, or activity that [SCHOOL] provided, please indicate the number of events held during the 2021-2022 school year.

Academic Support	Total Number of Events
College tutoring services, remote or in-person	[Dropdown] 1-20+
Peer tutoring, remote or in-person	[Dropdown] 1-20+
Access to Writing Center tutors	[Dropdown] 1-20+
Tutoring embedded into ESL courses	[Dropdown] 1-20+
Think Storm: an on-demand 24-hour tutoring service	[Dropdown] 1-20+
Dedicated EC program tutor through higher education program	[Dropdown] 1-20+
Weekly seminar/check-ins with support staff	[Dropdown] 1-20+
Virtual office hours with support person (counselor, program coordinator, college and career coach)	[Dropdown] 1-20+
EC program orientation	[Dropdown] 1-20+
Embedded classroom student advocate/high school teacher in classes with EC students	[Dropdown] 1-20+
"Stretch Classroom" support	[Dropdown] 1-20+
Other (please specify) [Text box]	[Dropdown] 1-20+

What **NON-ACADEMIC** supports, services, or activities did the school provide to EC students to help them succeed in the program **2021-2022 school year**? *Select all that apply.*

For each **NON-ACADEMIC** support, service, or activity that [SCHOOL] provided, please indicate the number of events held during the 2021-2022 school year.

Non-academic Support	Total Number of Events
Orientation	[Dropdown] 1-20+
Weekly success seminars/check-ins	[Dropdown] 1-20+
Open house/parent/family night	[Dropdown] 1-20+
Community service activities	[Dropdown] 1-20+
College student/speaker panel	[Dropdown] 1-20+
Virtual mental health awareness event specific for EC cohort	[Dropdown] 1-20+
Access to all college and high school clubs and events	[Dropdown] 1-20+
Consistent parent/family outreach to support students with SEL needs	[Dropdown] 1-20+
Other (please specify) [Text box]	[Dropdown] 1-20+

What **COLLEGE/CAREER** supports, services, or activities did the school provide to EC students to help them succeed in the program **2021-2022 school year**? *Select all that apply.*

For each **COLLEGE/CAREER** support, service, or activity that [SCHOOL] provided, please indicate the number of events held during the 2021-2022 school year.

College/Career Support	Total Number of Events
Virtual career fair/virtual hiring fair	[Dropdown] 1-20+
College/career guidance meetings/workshops	[Dropdown] 1-20+
College application process workshops	[Dropdown] 1-20+
MassHire events	[Dropdown] 1-20+
Guided help with school-specific scholarship applications	[Dropdown] 1-20+
FAFSA workshops and lessons	[Dropdown] 1-20+
Resume workshop	[Dropdown] 1-20+
Naviance career exploration	[Dropdown] 1-20+
Interview coaching workshop	[Dropdown] 1-20+
Virtual job shadow day	[Dropdown] 1-20+
Career assessment through MassCIS and career coach	[Dropdown] 1-20+
College student panel	[Dropdown] 1-20+
Virtual LinkedIn experience for EC students and alumni	[Dropdown] 1-20+
Virtual mentoring classroom career/job skill workshops	[Dropdown] 1-20+
Scholarship presentation	[Dropdown] 1-20+
Other (please specify) [Text box]	[Dropdown] 1-20+

Did individuals providing support receive any professional development to prepare them for their EC responsibilities during the 2021-2022 academic year?

- ○ Yes
- ○ No

[If yes] Who provided the professional development to prepare them for their EC responsibilities during the **2021-2022 academic year**? For each role, please provide the total professional development hours. *Enter all that apply.*

Role	Total PD Hours
High School Leadership	[Dropdown] 1-60+
College Leadership	[Dropdown] 1-60+
College Faculty	[Dropdown] 1-60+
High School Faculty	[Dropdown] 1-60+
Non-profit agency	[Dropdown] 1-60+
Other (please specify) [Text box]	[Dropdown] 1-60+

In addition to regular pay, did these individuals receive a stipend or other type of compensation for their EC work during the **2021-2022 academic year**?

- ○ Yes
- ○ No

[If yes] What was the approximate amount of stipend or compensation given during the **2021-2022 academic year**? [Text box]

Did these individuals providing support have to devote additional time for EC students outside of school hours?

- ○ Yes
- ○ No

[If yes] How much time in a typical week? *Please describe.*

- ○ Less than 2 hours
- ○ Between 3-5 hours
- ○ Between 6-8 hours
- ○ 8 hours or more

Outreach and Recruitment

The next set of questions asks about resources used for outreach and recruitment in your designated EC program at [SCHOOL].

All questions are about the most recently completed school year (2021-2022 academic year).

In the **2021-2022 school year**, how many employees were involved in Early College **outreach and recruitment** activities from [SCHOOL] If zero, please enter 0. *Please include all full-time and part-time staff, and staff who are completely or partially dedicated to EC.* [Text box]

Who was involved in outreach and recruitment activities from [SCHOOL] during the 2021-2022 school year? For each staff member that contributed to outreach and recruitment for the Early College program, please provide their job title, years of professional experience, highest degree earned, time spent on EC, and employee status. *Please include all full-time and part-time staff, and staff who are completely or partially dedicated to EC.*

For the allocation of staff time below, please only include time spent on [SCHOOL]'s EC program.

Staff Member	Job Title	Years of Professional Experience	Highest Degree Earned	% Weekly Time Spent on EC	Employee Status
Staff Member [# 1-15}	[Dropdown] Teacher, EC Coordinator/Director, Counselor, Assistant Principal, Principal, Other	[Dropdown] 1-30+	[Dropdown] Associate's, Bachelor's, Master's, Doctorate	[Dropdown] 5%-100%	[Dropdown] Full-time grant-funded, Part-time grant-funded, Full-time institutionally-funded, Part-time institutionally-funded

[If "Other" Job Title] What are the other job titles?

Staff Member	Other Job Title Please Specify
Staff Member [# 1-15}	[Textbox]

In addition to regular pay, did these individuals receive a stipend or other type of compensation for their EC work during the **2021-2022 academic year**?

- ○ Yes
- ○ No

[If yes] What was the approximate amount of stipend or compensation given during the **2021-2022 academic year**? [Text box]

What did **outreach and recruitment** to students and families for the EC program include at [SCHOOL]? For each activity, please provide the total hours spent on the activity during the 2021-22 academic year. *Enter all that apply.*

Outreach and Recruitment Activity	Total Hours Spent on Activity
Family nights for eligible students	[Dropdown] 1-60+
Information sessions with students	[Dropdown] 1-60+
Phone calls to parents/guardians	[Dropdown] 1-60+
Text messages to parents/guardians	[Dropdown] 1-60+
Emails to parents/guardians	[Dropdown] 1-60+
Informational brochures	[Dropdown] 1-60+
Field trips to college campus	[Dropdown] 1-60+
Other (please specify)	[Dropdown] 1-60+

Miscellaneous

The next set of questions asks about transportation, student rewards/incentives, and collective bargaining in the EC program at [SCHOOL].

All questions are about the most recently completed school year (2021-2022 academic year).

Was transportation provided for EC students to/from an IHE campus or business partner during the 2021-2022 academic year?

- ○ Yes
- ○ No

[If yes] How many students required transportation for their EC course(s) during the 2021-2022 academic year? [Text box]

How often was transportation provided for those students 2021-2022 academic year?

- ○ 1-2 times a day
- ○ 2-4 times a day
- ○ 5+ times a day
- ○ 1-2 times a week
- ○ 2-4 times a week
- ○ 5+ times a week
- ○ Other (please specify) [Text box]

What type of transportation was provided during the 2021-2022 academic year?

- ○ District school buses
- ○ Other buses
- ○ Public transportation
- ○ Ride sharing services
- ○ Other (please describe) [Text box]

What was the average distance of each trip? [Text box]

What activities, events, or other community-building experiences were provided to bolster EC student identity or create a bond between EC students? *Select all that apply.*

Small Prizes

Small Incentives/Rewards (e.g., movie tickets)

College Partner Swag

Celebrations

Field Trips

Other (please specify) [Text box]

No additional community-building activities were offered to students

Who paid for student rewards/incentives for performance during the **2021-2022 academic year**?

- ○ High school
- ○ District
- ○ College
- ○ Other (please specify) [Text box]

What was the estimated total cost in the **2021-2022 school year** for the activities, events, or other community-building experiences? [Text box]

During the 2021-2022 academic year, were there any additional fees that were charged to EC students?

- ○ Yes
- ○ No

[If yes] What were the additional fees? *Please describe.* [Text box]

Were there any other **EC-related costs** that [SCHOOL] incurred or resources that the program used **during the 2021-2022 academic year** that we haven't already talked about? For example, contracts with external organizations or vendors, insurance, etc.

- ○ Yes
- ○ No

[If yes] Please describe the other EC-related costs that [SCHOOL] incurred or resources that the program used during the **2021-2022 academic year** that we haven't talked about. For example, contracts with external organizations, vendors, insurance. [Text box]

Did collective bargaining agreements have any impact on your EC offerings during the 2021-2022 school year? For instance, did they impact who taught your EC courses and when those courses can be offered?

- ○ Yes (please explain) [Text box]
- ○ No

Scaling & Expansion

The next set of questions asks about funding and expansion in the designated EC program at [SCHOOL].

All questions are about the most recently completed school year (2021-2022 academic year).

What were the main sources of funding for the EC program during the **2021-2022 academic year**? *Select all that apply.*

State Targeted Assistance

ESSER Funding

DESE Grant

Other grants (please specify) [Text box]

Other (please specify) [Text box]

[If state targeted assistance] What percent of funding came from **State Targeted Assistance** during the **2021-2022 academic year**? [Text box]

[If ESSER funding] What percent of funding came from **ESSER Funding** during the **2021-2022 academic year**? [Text box]

What percent of funding came from **DESE Grant** during the **2021-2022 academic year**? [Text box]

What percent of funding came from [**OTHER]** during the **2021-2022 academic year**? [Text box]

What would you like to do, add, or improve upon if you had more funding for the program? *Select all that apply.*

Staffing (please describe) [Text box]

Events (please describe) [Text box]

Materials (please describe) [Text box]

Transportation (please describe) [Text box]

Academic preparation (please describe) [Text box]

Academic support (please describe) [Text box]

Administrative support (please describe) [Text box]

Other (please describe) [Text box]

What approaches/major elements of the EC program were in place during the 2021-2022 academic year in response to **COVID-19**? *Select all that apply.*

Location of coursework (High school, college, etc.) (please describe) [Text box]

Modality of instruction (in-person, remote, hybrid) (please describe) [Text box]

Transportation (please describe) [Text box]

Academic support services (please describe) [Text box]

Non-academic support services (please describe) [Text box]

Recruitment and outreach (please describe) [Text box]

Other (please describe) [Text box]

What approaches/major elements were changed for the **2022-23 academic year, if any**? *Select all that apply.*

None

Location of coursework (High school, college, etc.) (please describe) [Text box]

Modality of instruction (in-person, remote, hybrid) (please describe) [Text box]

Transportation (please describe) [Text box]

Academic support services (please describe) [Text box]

Non-academic support services (please describe) [Text box]

Recruitment and outreach (please describe) [Text box]

Other (please describe) [Text box]

Given the current level of resources for the EC program, what is the ideal number of students that the program could serve? *Please describe.* [Text box]

Is the program serving this many students? If not, why not? [Text box]

Has the program achieved its goal of enrolling students from underrepresented populations?

- ○ Yes
- ○ No

What are the potential reasons why the program has not achieved its original goal of enrolling students from underrepresented populations? [Text box]

In what areas are you limited in expansion? *Select all that apply.*

Lack of funds (please describe) [Text box]

Not enough student interest/participation (please describe) [Text box]

Limited staff availability (please describe) [Text box]

Limited faculty availability (please describe) [Text box]

Transportation issues (please describe) [Text box]

Other (please describe) [Text box]

Does [SCHOOL] plan to expand the EC program?

- ○ Yes
- ○ No

[If yes] How does [SCHOOL] plan to expand the EC program? *Select all that apply.*

Enroll more students

Offer more Early College courses

Expand number of academic pathways

Work with more colleges

Other (please describe) [Text box]

Early College IHE Coordinators

Program Context

This survey focuses on [SCHOOL]'s **designated Early College**, not any other dual credit, concurrent enrollment, or pilot programs not officially designated by DESE.

All questions are about the most recently completed school year (2021-2022 academic year)

AIR is not specifically interested in allocated program funding (e.g., implementation grants) or program budget documents. Rather, AIR would like to collect information on the personnel and non-personnel resources or "ingredients" that are necessary to implement and operate the EC program. Since this is a partnership, we recognize that there may be some costs related to your program that are covered by your partner institution. Please only reference the costs associated with your institution.

The survey consists of six sections:

- Administration
- Instruction
- Advising & Support
- Outreach & Recruitment
- Miscellaneous
- Scaling & Expansion

To the best of your ability, please allocate the resources accurately within each of these cost categories. A description of each category is included at the beginning of each section.

How many designated partnerships did ${e://Field/IHE} support during the 2021-2022 academic year?

- ○ 1
- ○ 2

- ○ 3
- ○ 4
- ○ 5 or more

During the 2021-22 academic year, did the EC program share or leverage staffing or resources with any other dual enrollment program at the college?

- ○ Yes, other designated Early College programs
- ○ Yes, other non-designated pathway or dual enrollment programs
- ○ No

[If yes, other designated Early College programs] The next set of questions ask about the resources shared with **OTHER** designated Early College programs during the 2021-22 academic year. We are interested in what you shared and the percentage of resources shared with **OTHER** designated Early College programs.

What were the resources shared with other designated Early College programs during the 2021-22 academic year? *Select all that apply.*

Staff

Equipment/materials (please specify) [Text box]

Other (please specify) [Text box]

[If staff] What was the percentage of **STAFF TIME** shared with other designated Early College programs during the 2021-22 academic year? *Include both full time and part time staff that are contributing hours to your designated Early College program.* [Text box]

[If equipment/materials] What was the percentage of **EQUIPMENT/MATERIALS** shared with other designated Early College programs during the 2021-22 academic year? [Text box]

[If other] What was the percentage of [**OTHER**] shared with other designated Early College programs during the 2021-22 academic year? [Text box]

[If yes, other non-designated pathway or dual enrollment program] The next set of questions ask about the resources shared with **NON-DESIGNATED** pathway or dual enrollment programs during the 2021-22 academic year. We are interested in what you shared and the percentage of resources shared with **NON-DESIGNATED** pathway or dual enrollment programs.

What were the resources shared with other non-designated pathway or dual enrollment programs during the 2021-22 academic year? *Select all that apply.*

Staff

Equipment/materials (please specify) [Text box]

Other (please specify) [Text box]

[If staff] What was the percentage of **STAFF TIME** shared with other non-designated pathway or dual enrollment programs during the 2021-22 academic year? *Include both full time and part time staff that are contributing hours to your non-designated pathway or dual enrollment programs.* [Text box]

[If equipment/materials] What was the percentage of **EQUIPMENT/MATERIALS** shared with other non-designated pathway or dual enrollment programs during the 2021-22 academic year? [Text box]

[If other] What was the percentage of [**OTHER**] shared with other non-designated pathway or dual enrollment programs during the 2021-22 academic year? [Text box]

Administration

The following questions ask about employees who **managed, oversaw, or coordinated** the EC program at [IHE]. Responsibilities for these employees could include working on EC class schedules, managing relationships with partners, communicating with parents, compiling and reporting EC-relevant data, etc.

All questions are about the most recently completed school year (2021-2022 academic year).

In the **2021-2022 school year**, how many employees at [IHE] **managed, oversaw, or coordinated** the EC program? Responsibilities could include working on EC class schedules, managing relationships with partners, communicating with parents, compiling and reporting EC-relevant data, etc. (*If zero, please enter 0*) [Text box]

Please include all full-time and part-time staff, and staff who are completely or partially dedicated to EC.

For each staff member that contributed **to the administration** of the Early College program, please provide the following information:

For the allocation of staff time below, please only include time spent on [IHE]'s EC program.

Staff Member	Job Title	Years of Professional Experience	Highest Degree Earned	% Weekly Time Spent on EC	Employee Status
Staff Member [# 1-15}	Director, Assistant Director, Dean, Assistant Dean, Coordinator, Advisor, Other	[Dropdown] 1-30+	[Dropdown] Associate's, Bachelor's, Master's, Doctorate	[Dropdown] 5%-100%	[Dropdown] Full-time grant-funded, Part-time grant-funded, Full-time institutionally-funded, Part-time institutionally-funded

[If "Other" Job Title] What are the other job titles?

Staff Member	Other Job Title Please Specify
Staff Member [# 1-15}	[Textbox]

In addition to their regular pay, did these individuals receive a stipend or other type of compensation for their EC work during the 2021-2022 academic year?

- ○ Yes
- ○ No

[If yes] What was the estimated amount of stipend or compensation given during the **2021-2022 academic year**? [Text box]

Instruction

The next set of questions asks about staff who contributed to **instruction** in the designated EC program at [SCHOOL].

All questions are about the most recently completed school year (2021-2022 academic year).

In the **2021-2022 school year**, how many employees provided **instruction** for the EC program? Employees providing instruction can be high school instructors or college instructors. (If zero, please enter 0). *Please include all full-time and part-time staff, and staff who are completely or partially dedicated to EC.* [Text box]

For each staff member that contributed to **instruction** for [SCHOOL] in the **Early College** program in the **2021-2022 school year**, please provide their job title, years of experience, highest degree earned, and time spent on EC. *Please include all full-time and part-time staff, and staff who are completely or partially dedicated to EC.*

For the allocation of staff time below, please only include time spent on [SCHOOL]'s EC program.

Staff Member	Job Title	Years of Professional Experience	Highest Degree Earned	% Weekly Time Spent on EC
Staff Member [# 1-15}	Adjunct Instructor/Professor/ Lecturer, Teaching Assistant, Assistant Professor, Associate Professor, Professor, Other	[Dropdown] 1-30+	[Dropdown] Associate's, Bachelor's, Master's, Doctorate	[Dropdown] 5%-100%

[If "Other" Job Title] What are the other job titles?

Staff Member	Other Job Title Please Specify
Staff Member [# 1-15}	[Textbox]

For each staff member that contributed to **instruction** to the Early College program in the **FALL semester of the 2021-2022 school year**, please provide the number of courses taught, total number of students, and the modality for each class taught. *Please include all full-time and part-time staff, and staff who are completely or partially dedicated to EC.*

Name	# Courses taught during the FALL semester	Total # of EC students taught/supported during the FALL semester	Modality of classes during the FALL semester. (Select all that apply)			
			In-person HS	In-person College	Remote	Hybrid
[Text box]	[Text box]	[Text box]				

For each staff member that contributed to **instruction** to the Early College program in the **SPRING semester of the 2021-2022 school year**, please provide the number of courses taught, total number of students, and the modality for each class taught. *Please include all full-time and part-time staff, and staff who are completely or partially dedicated to EC.*

Name	# Courses taught during the SPRING semester	Total # of EC students taught/supported during the SPRING semester	Modality of classes during the SPRING semester. (Select all that apply)			
			In-person HS	In-person College	Remote	Hybrid
[Text box]	[Text box]	[Text box]				

Did instructional staff receive professional development to prepare them for their EC teaching responsibilities during the **2021-2022 academic year**?

- ○ Yes
- ○ No

[If yes] Who provided the professional development for instructional staff to prepare them for their EC teaching responsibilities during the **2021-2022 academic year**? For each role, please provide the total hours. *Enter all that apply.*

Role	Total PD Hours
High school leadership	[Dropdown] 1-60+
College leadership	[Dropdown] 1-60+
College faculty	[Dropdown] 1-60+
High school faculty	[Dropdown] 1-60+
Non-profit agency	[Dropdown] 1-60+
Other (please specify) [Text box]	[Dropdown] 1-60+

In addition to regular pay, did **instructional staff** receive a stipend or other type of compensation for teaching or supporting EC coursework during the **2021-2022 academic year**?

- ○ Yes
- ○ No

[If yes] What was the approximate amount of stipend or compensation given during the **2021-2022 academic year**? [Text box]

Did instructional staff devote additional time for EC students outside of instructional time in class?

- ○ Yes
- ○ No

[If yes] On average per week, how much additional time do staff devote to supporting EC students compared to their peers?

- ○ Less than 1 hour
- ○ Between 1-2 hours
- ○ Between 3-4 hours
- ○ 5 hours or more

What types of instructional materials, technology, and/or supplies did [SCHOOL] USE (not purchase) to support EC instruction? *Choose all that apply.*

Textbooks

Equipment

Hardware

Software

Open educational resources

Other (please specify) [Text box]

[If textbooks] About how many **TEXTBOOKS** did you provide to support EC instruction during the 2021-22 academic year? [Text box]

[If equipment] What kind of **EQUIPMENT** did you provide to support EC instruction during the 2021-22 academic year? [Text box]

[If hardware] What kind of **HARDWARE** did you provide to support EC instruction during the 2021-22 academic year? [Text box]

[If software] What kind of **SOFTWARE** did you provide to support EC instruction during the 2021-22 academic year? [Text box]

[If open educational resources] What **OPEN EDUCATIONAL RESOURCES** did you provide to support EC instruction during the 2021-22 academic year? [Text box]

How many course sections were taught in [SCHOOL] 's EC program **during the 2021-22 academic year**? [Text box]

What was the population of students in the course sections during the 2021-22 academic year?

- ○ Cohorted/EC students only
- ○ Mix of EC and other high school students (e.g., high school students only)
- ○ Mix of college and high school students
- ○ Other (please specify*)* [Text box]

Advising and Support

The next set of questions asks about staff who contributed to **advising and support** for the designated ECs program at [SCHOOL].

Support includes 3 sections:

- Academic supports are designed to encourage academic success and deal ***DIRECTLY*** with academic content and scholarly success. For example, weekly seminar/check-ins with staff concerning academics, and embedded classroom student advocate/high school teacher in classes with EC students, etc.
- Non-academic supports are designed to encourage academic success, but ***DO NOT DEAL DIRECTLY*** with academic content. For example, orientation, weekly success seminars/check-ins, open house/parent/family night, college student speaker panel, etc.
- College/career supports are designed to encourage college/career success. This may include resume workshops, virtual career fairs, FAFSA workshops, college application process workshops, etc.

All questions are about the most recently completed school year (2021-2022 academic year).

In the 2021-2022 school year, how many employees at [SCHOOL] were involved in providing **academic** supports, services, or activities to Early College students? (If zero, please enter 0). *Please include all full-time and part-time staff, and staff who are completely or partially dedicated to EC.* [Text box]

> Examples of academic support include tutoring services, weekly seminar/check-ins with staff concerning academics, and embedded classroom student advocate/high school teacher in classes with EC students.

For each staff member that contributed **to academic advising/supporting** Early College students in the **2021-2022 school year**, please provide their job title, years of professional

experience, highest degree earned, percent weekly time spent on designated EC programs, and employee status. *Please include all full-time and part-time staff, and staff who are completely or partially dedicated to EC.*

For the allocation of staff time below, please only include time spent on [SCHOOL]'s EC program.

Staff Member	Job Title	Years of Professional Experience	Highest Degree Earned	% Weekly Time Spent on EC	Employee Status
Staff Member [# 1-15}	Director, Assistant Director, Dean, Assistant Dean, Coordinator, Advisor, Other	[Dropdown] 1-30+	[Dropdown] Associate's, Bachelor's, Master's, Doctorate	[Dropdown] 5%-100%	[Dropdown] Full-time grant-funded, Part-time grant-funded, Full-time institutionally-funded, Part-time institutionally-funded

[If "Other" Job Title] What are the other job titles?

Staff Member	Other Job Title Please Specify
Staff Member [# 1-15}	[Textbox]

In the 2021-2022 school year, how many employees at [SCHOOL] were involved in providing **non-academic** supports, services, or activities to Early College students? (If zero, please enter 0). *Please include all full-time and part-time staff, and staff who are completely or partially dedicated to EC* [Text box]

> Examples of non-academic support include orientation, weekly success seminars/check-ins, open house/parent/family night, college student speaker panel, etc.

For each staff member that contributed to **non-academic advising/supporting** Early College students in the **2021-2022 school year**, please provide their job title, years of professional experience, highest degree earned, percent weekly time spent on designated EC programs, and

employee status. *Please include all full-time and part-time staff, and staff who are completely or partially dedicated to EC.*

For the allocation of staff time below, please only include time spent on [SCHOOL]'s EC program.

Staff Member	Job Title	Years of Professional Experience	Highest Degree Earned	% Weekly Time Spent on EC	Employee Status
Staff Member [# 1-15}	Director, Assistant Director, Dean, Assistant Dean, Coordinator, Advisor, Other	[Dropdown] 1-30+	[Dropdown] Associate's, Bachelor's, Master's, Doctorate	[Dropdown] 5%-100%	[Dropdown] Full-time grant-funded, Part-time grant-funded, Full-time institutionally-funded, Part-time institutionally-funded

[If "Other" Job Title] What are the other job titles?

Staff Member	Other Job Title Please Specify
Staff Member [# 1-15}	[Textbox]

In the 2021-2022 school year, how many employees at [SCHOOL] were involved in providing **college/career** supports, services, or activities to Early College students? (If zero, please enter 0). *Please include all full-time and part-time staff, and staff who are completely or partially dedicated to EC.* [Text box]

> Examples of college/career support include resume workshops, virtual career fairs, FAFSA workshops, college application process workshops, etc.

For each staff member that contributed to **college/career advising/supporting** Early College students in the **2021-2022 school year**, please provide their job title, years of professional experience, highest degree earned, time spent on EC, and employee status. *Please include all full-time and part-time staff, and staff who are completely or partially dedicated to EC.*

For the allocation of staff time below, please only include time spent on [SCHOOL]'s EC program.

Staff Member	Job Title	Years of Professional Experience	Highest Degree Earned	% Weekly Time Spent on EC	Employee Status
Staff Member [# 1-15}	Director, Assistant Director, Dean, Assistant Dean, Coordinator, Advisor, Other	[Dropdown] 1-30+	[Dropdown] Associate's, Bachelor's, Master's, Doctorate	[Dropdown] 5%-100%	[Dropdown] Full-time grant-funded, Part-time grant-funded, Full-time institutionally-funded, Part-time institutionally-funded

[If "Other" Job Title] What are the other job titles?

Staff Member	Other Job Title Please Specify
Staff Member [# 1-15}	[Textbox]

What **ACADEMIC** supports, services, or activities did [SCHOOL] provide to EC students to help them succeed in the program in the **2021-2022 school year**?

For each **ACADEMIC** support, service, or activity that [SCHOOL] provided, please indicate the number of events held during the 2021-2022 school year.

Academic Support	Total Number of Events
College tutoring services, remote or in-person	[Dropdown] 1-20+
Peer tutoring, remote or in-person	[Dropdown] 1-20+
Access to Writing Center tutors	[Dropdown] 1-20+
Tutoring embedded into ESL courses	[Dropdown] 1-20+
Think Storm: an on-demand 24-hour tutoring service	[Dropdown] 1-20+
Dedicated EC program tutor through higher education program	[Dropdown] 1-20+

Academic Support	Total Number of Events
Weekly seminar/check-ins with support staff	[Dropdown] 1-20+
Virtual office hours with support person (counselor, program coordinator, college and career coach)	[Dropdown] 1-20+
EC program orientation	[Dropdown] 1-20+
Embedded classroom student advocate/high school teacher in classes with EC students	[Dropdown] 1-20+
"Stretch Classroom" support	[Dropdown] 1-20+
Other (please specify) [Text box]	[Dropdown] 1-20+

What **NON-ACADEMIC** supports, services, or activities did the school provide to EC students to help them succeed in the program **2021-2022 school year**? *Select all that apply.*

For each **NON-ACADEMIC** support, service, or activity that [SCHOOL] provided, please indicate the number of events held during the 2021-2022 school year.

Non-academic Support	Total Number of Events
Orientation	[Dropdown] 1-20+
Weekly success seminars/check-ins	[Dropdown] 1-20+
Open house/parent/family night	[Dropdown] 1-20+
Community service activities	[Dropdown] 1-20+
College student/speaker panel	[Dropdown] 1-20+
Virtual mental health awareness event specific for EC cohort	[Dropdown] 1-20+
Access to all college and high school clubs and events	[Dropdown] 1-20+
Consistent parent/family outreach to support students with SEL needs	[Dropdown] 1-20+
Other (please specify) [Text box]	[Dropdown] 1-20+

What **COLLEGE/CAREER** supports, services, or activities did the school provide to EC students to help them succeed in the program **2021-2022 school year**? *Select all that apply.*

For each **COLLEGE/CAREER** support, service, or activity that [SCHOOL] provided, please indicate the number of events held during the 2021-2022 school year.

College/Career Support	Total Number of Events
Virtual career fair/virtual hiring fair	[Dropdown] 1-20+
College/career guidance meetings/workshops	[Dropdown] 1-20+
College application process workshops	[Dropdown] 1-20+
MassHire events	[Dropdown] 1-20+
Guided help with school-specific scholarship applications	[Dropdown] 1-20+
FAFSA workshops and lessons	[Dropdown] 1-20+
Resume workshop	[Dropdown] 1-20+
Naviance career exploration	[Dropdown] 1-20+
Interview coaching workshop	[Dropdown] 1-20+
Virtual job shadow day	[Dropdown] 1-20+
Career assessment through MassCIS and career coach	[Dropdown] 1-20+
College student panel	[Dropdown] 1-20+
Virtual LinkedIn experience for EC students and alumni	[Dropdown] 1-20+
Virtual mentoring classroom career/job skill workshops	[Dropdown] 1-20+
Scholarship presentation	[Dropdown] 1-20+
Other (please specify) [Text box]	[Dropdown] 1-20+

Did individuals providing support receive any professional development to prepare them for their EC responsibilities during the 2021-2022 academic year?

- ○ Yes
- ○ No

[If yes] Who provided the professional development to prepare them for their EC responsibilities during the **2021-2022 academic year**? For each role, please provide the total professional development hours. *Enter all that apply.*

Role	Total PD Hours
High School Leadership	[Dropdown] 1-60+
College Leadership	[Dropdown] 1-60+
College Faculty	[Dropdown] 1-60+
High School Faculty	[Dropdown] 1-60+
Non-profit agency	[Dropdown] 1-60+
Other (please specify) [Text box]	[Dropdown] 1-60+

In addition to regular pay, did these individuals receive a stipend or other type of compensation for their EC work during the **2021-2022 academic year**?

- ○ Yes
- ○ No

[If yes] What was the approximate amount of stipend or compensation given during the **2021-2022 academic year**? [Text box]

Did these individuals providing support have to devote additional time for EC students outside of school hours?

- ○ Yes
- ○ No

[If yes] How much time in a typical week? *Please describe.*

- ○ Less than 2 hours
- ○ Between 3-5 hours
- ○ Between 6-8 hours
- ○ 8 hours or more

Outreach and Recruitment

The next set of questions asks about resources used for outreach and recruitment in your designated EC program at [SCHOOL].

All questions are about the most recently completed school year (2021-2022 academic year).

In the **2021-2022 school year**, how many employees were involved in Early College **outreach and recruitment** activities from [SCHOOL] If zero, please enter 0. *Please include all full-time and part-time staff, and staff who are completely or partially dedicated to EC.* [Text box]

Who was involved in outreach and recruitment activities from [SCHOOL] during the 2021-2022 school year? For each staff member that contributed to outreach and recruitment for the Early College program, please provide their job title, years of professional experience, highest degree earned, time spent on EC, and employee status. *Please include all full-time and part-time staff, and staff who are completely or partially dedicated to EC.*

For the allocation of staff time below, please only include time spent on [SCHOOL]'s EC program.

Staff Member	Job Title	Years of Professional Experience	Highest Degree Earned	% Weekly Time Spent on EC	Employee Status
Staff Member [# 1-15}	Director, Assistant Director, Dean, Assistant Dean, Coordinator, Advisor, Other	[Dropdown] 1-30+	[Dropdown] Associate's, Bachelor's, Master's, Doctorate	[Dropdown] 5%-100%	[Dropdown] Full-time grant-funded, Part-time grant-funded, Full-time institutionally-funded, Part-time institutionally-funded

[If "Other" Job Title] What are the other job titles?

Staff Member	Other Job Title Please Specify
Staff Member [# 1-15}	[Textbox]

In addition to regular pay, did these individuals receive a stipend or other type of compensation for their EC work during the **2021-2022 academic year**?

- ○ Yes
- ○ No

[If yes] What was the approximate amount of stipend or compensation given during the **2021-2022 academic year**? [Text box]

What did **outreach and recruitment** to students and families for the EC program include at [SCHOOL]? For each activity, please provide the total hours spent on the activity during the 2021-22 academic year. *Enter all that apply.*

Outreach and Recruitment Activity	Total Hours Spent on Activity
Family nights for eligible students	[Dropdown] 1-60+
Information sessions with students	[Dropdown] 1-60+
Phone calls to parents/guardians	[Dropdown] 1-60+
Text messages to parents/guardians	[Dropdown] 1-60+
Emails to parents/guardians	[Dropdown] 1-60+
Informational brochures	[Dropdown] 1-60+
Field trips to college campus	[Dropdown] 1-60+
Other (please specify)	[Dropdown] 1-60+

Miscellaneous

The next set of questions asks about transportation, student rewards/incentives, and collective bargaining in the EC program at [SCHOOL].

All questions are about the most recently completed school year (2021-2022 academic year).

Was transportation provided for EC students to/from an IHE campus or business partner during the 2021-2022 academic year?

- ○ Yes
- ○ No

[If yes] How many students required transportation for their EC course(s) during the 2021-2022 academic year? [Text box]

How often was transportation provided for those students 2021-2022 academic year?

- ○ 1-2 times a day
- ○ 2-4 times a day
- ○ 5+ times a day
- ○ 1-2 times a week
- ○ 2-4 times a week
- ○ 5+ times a week
- ○ Other (please specify) [Text box]

What type of transportation was provided during the 2021-2022 academic year?

- ○ District school buses
- ○ Other buses
- ○ Public transportation

- ○ Ride sharing services
- ○ Other (please describe) [Text box]

What was the average distance of each trip? [Text box]

What activities, events, or other community-building experiences were provided to bolster EC student identity or create a bond between EC students? *Select all that apply.*

Small Prizes

Small Incentives/Rewards (e.g., movie tickets)

College Partner Swag

Celebrations

Field Trips

Other (please specify) [Text box]

No additional community-building activities were offered to students

Who paid for student rewards/incentives for performance during the **2021-2022 academic year**?

- ○ High school
- ○ District
- ○ College
- ○ Other (please specify) [Text box]

What was the estimated total cost in the **2021-2022 school year** for the activities, events, or other community-building experiences? [Text box]

During the 2021-2022 academic year, were there any additional fees that were charged to EC students?

- ○ Yes
- ○ No

[If yes] What were the additional fees? *Please describe.* [Text box]

Were there any other **EC-related costs** that [SCHOOL] incurred or resources that the program used **during the 2021-2022 academic year** that we haven't already talked about? For example, contracts with external organizations or vendors, insurance, etc.

- ○ Yes
- ○ No

[If yes] Please describe the other EC-related costs that [SCHOOL] incurred or resources that the program used during the **2021-2022 academic year** that we haven't talked about. For example, contracts with external organizations, vendors, insurance. [Text box]

Did collective bargaining agreements have any impact on your EC offerings during the 2021-2022 school year? For instance, did they impact who taught your EC courses and when those courses can be offered?

- ○ Yes (please explain) [Text box]
- ○ No

Scaling and Expansion

The next set of questions asks about funding and expansion in the designated EC program at [SCHOOL].

All questions are about the most recently completed school year (2021-2022 academic year).

What were the main sources of funding for the EC program during the **2021-2022 academic year**? *Select all that apply.*

State Targeted Assistance

ESSER Funding

DESE Grant

Other grants (please specify) [Text box]

Other (please specify) [Text box]

[If state targeted assistance] What percent of funding came from **State Targeted Assistance** during the **2021-2022 academic year**? [Text box]

[If ESSER funding] What percent of funding came from **ESSER Funding** during the **2021-2022 academic year**? [Text box]

What percent of funding came from **DESE Grant** during the **2021-2022 academic year**? [Text box]

What percent of funding came from [**OTHER]** during the **2021-2022 academic year**? [Text box]

What would you like to do, add, or improve upon if you had more funding for the program? *Select all that apply.*

Staffing (please describe) [Text box]

Events (please describe) [Text box]

Materials (please describe) [Text box]

Transportation (please describe) [Text box]

Academic preparation (please describe) [Text box]

Academic support (please describe) [Text box]

Administrative support (please describe) [Text box]

Other (please describe) [Text box]

What approaches/major elements of the EC program were in place during the 2021-2022 academic year in response to **COVID-19**? *Select all that apply.*

Location of coursework (High school, college, etc.) (please describe) [Text box]

Modality of instruction (in-person, remote, hybrid) (please describe) [Text box]

Transportation (please describe) [Text box]

Academic support services (please describe) [Text box]

Non-academic support services (please describe) [Text box]

Recruitment and outreach (please describe) [Text box]

Other (please describe) [Text box]

What approaches/major elements were changed for the **2022-23 academic year, if any**? *Select all that apply.*

None

Location of coursework (High school, college, etc.) (please describe) [Text box]

Modality of instruction (in-person, remote, hybrid) (please describe) [Text box]

Transportation (please describe) [Text box]

Academic support services (please describe) [Text box]

Non-academic support services (please describe) [Text box]

Recruitment and outreach (please describe) [Text box]

Other (please describe) [Text box]

Given the current level of resources for the EC program, what is the ideal number of students that the program could serve? *Please describe.* [Text box]

Is the program serving this many students? If not, why not? [Text box]

Has the program achieved its goal of enrolling students from underrepresented populations?

- ○ Yes
- ○ No

What are the potential reasons why the program has not achieved its original goal of enrolling students from underrepresented populations? [Text box]

In what areas are you limited in expansion? *Select all that apply.*

Lack of funds (please describe) [Text box]

Not enough student interest/participation (please describe) [Text box]

Limited staff availability (please describe) [Text box]

Limited faculty availability (please describe) [Text box]

Transportation issues (please describe) [Text box]

Other (please describe) [Text box]

Does [SCHOOL] plan to expand the EC program?

- ○ Yes
- ○ No

[If yes] How does [SCHOOL] plan to expand the EC program? *Select all that apply.*

Enroll more students

Offer more Early College courses

Expand number of academic pathways

Work with more colleges

Other (please describe) [Text box]

Appendix E. Data Sources for Resource Costs

Exhibits E-1 lists the data sources used to determine personnel and nonpersonnel resource prices/costs for the study. For some resources, AIR relied on self-reported data; however, when possible, AIR verified resource costs.

Exhibit E–1. Data Sources for Resource Costs

Data source	Description
Personnel costs	
American Community Survey Comparable Wage Index for Teachers	ACS collects information on educational expenditures across locales to facilitate comparisons across geographic entities. We used these index data to make costs comparable across sites within Massachusetts.
Bureau of Labor Statistics (BLS) Inflation Calculator	Used the BLS inflation calculator to put all resourced costs into 2022 constant dollars.
Census Public Elementary-Secondary Education Finance Data	The census collects education finance data for K–12 schools that allowed us to calculate the benefits rate specific to each district in the study.
DESE School and District Profiles	The Teacher Salaries Report provides district salary data.
E$timator	E$timator is a national database developed by Teachers College at Columbia University to support cost analysis of educational and social programs.
IPEDS	The IPEDS Human Resources survey component provides IHE instructional staff salaries.
Glassdoor	Glassdoor is a public website with salary data for some EC programs.
GovSalaries	GovSalaries is a national database that provides salary records for government employees.
School district websites	Salary and benefits information was available for some districts within union contracts that were available on the school district website.
Nonpersonnel costs	
Amazon	Amazon provides national prices for program supplies (e.g., graphing).
Brother	Brother provided price information related to equipment used in EC programs (e.g., printers).
EC program survey and interviews	Some resources were priced based on self-reported data from EC programs (e.g., stipends, bussing).
Education Data Initiative	The Education Data Initiative is a database of education statistics; it provided price information related to materials used in EC programs (e.g., textbooks).

Data source	Description
E$timator	E$timator is a national database developed by Teachers College at Columbia University to support cost analysis of educational and social programs.
Massachusetts Bay Transportation Authority	MBTA provided information on monthly fares for transportation costs in EC programs.

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