

<https://mailchi.mp/doe.mass.edu/state-of-knowledge-early-college>

# State of Knowledge: Early College

This brief presents the latest research from the Massachusetts Department of Elementary and Secondary Education (DESE) on Early College. Starting in autumn 2018, Massachusetts introduced a suite of High-Quality College and Career Pathways, including Early College (EC), to further provide students in the Commonwealth a supportive and rigorous academic experience, so that they may graduate secondary school with a well-designed postsecondary plan. As of 2023, the EC program has expanded to serve 6,054 students, participating at 27 institutions of higher education and 58 high schools (55 Designated high schools and 3 “sender” high schools), across 50 partnerships.

Using data from DESE’s Student Information Management System (SIMS), the Massachusetts Comprehensive Assessment System (MCAS), and the National Student Clearinghouse (NSC), DESE’s [Office of Planning and Research](#) has been investigating the efficacy of the Early College program using a matched-comparison group research design. This edition of the newsletter is a synthesis of the findings and estimates to date.

---

## Background

Per the Early College Designation Criteria, EC seeks to promote postsecondary school enrollment by allowing high school students to experience and complete postsecondary

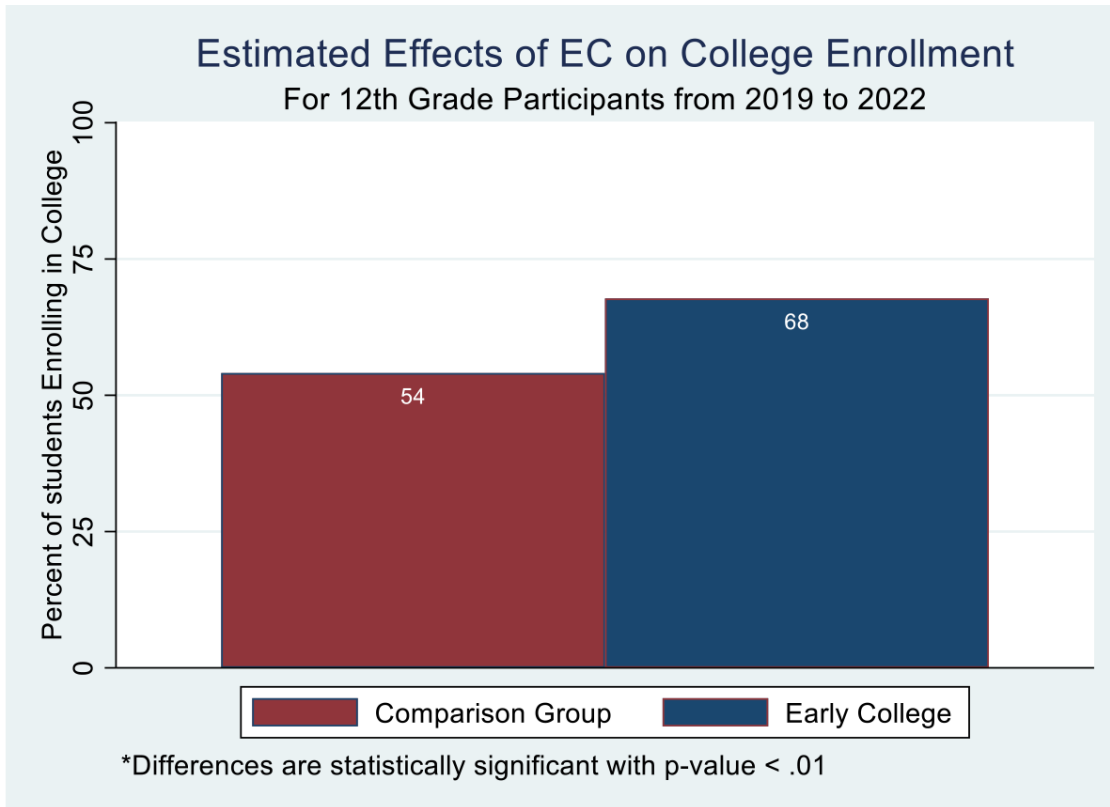
courses on a clearly articulated pathway and gain exposure to a variety of career opportunities. The theory of action further posits that by providing the courses at no cost to students, EC would reduce the time and expense of earning a postsecondary credential while increasing the likelihood of completion. Although Massachusetts consistently ranks among the top in education outcomes when compared to other states—performance on standardized tests, high school graduation, college access, and success, etc.—there remain sizeable disparities that separate racial minority and economically disadvantaged students from their peers. With a guiding principle of equitable access, Early College seeks to address these disparities in educational attainment.

---

## Estimated Effects of Early College Participation

To evaluate the effects of the Early College program, 12th-grade participants from the 2018-19 to 2021-22 academic years were matched with students in their graduating class who shared similar demographic and educational achievement backgrounds. This match in the data allows Early College participants to be compared to similar peers to better understand the impacts of the program. To date, nearly 3,900 Early College participants and nearly 3,900 comparable non-participants have been studied from four graduating cohorts.

Analyses indicate that Early College participants immediately enrolled in college at an estimated 14 percentage points higher rate than the non-participant comparison group.



Two additional areas of exploration were whether EC participants who enrolled in college were more likely to enroll in a public in-state institution of higher education (i.e., the majority of postsecondary institutions that partner with high schools to offer Early College), and whether they were more likely to attend a 4-year institution.

Early College graduates from 2019 to 2022 who enrolled in college immediately after high school attended public in-state institutions at a statistically significant 7 percentage point higher rate than the matched comparison group of non-participants. This could be interpreted as a positive return on investment for the state overall, even if not for specific institutions.

Enrollment at 4-year colleges and universities is higher than

at 2-year institutions. 78% of 12th Grade Early College participants in the sample from 2019 to 2022 who enrolled in college immediately after high school did so at a 4-year institution. However, they were not statistically significantly more likely to do so than the matched comparison group of non-participants. In other words, Early College does not appear to be the driver behind the reason students are choosing 4-year institutions. We propose two theories as to why 4-year enrollment is high in this study: 1) the overwhelming majority of EC participants, and consequently their matched comparison group, are meeting or exceeding expectations on MCAS, and historical data show that those students are more likely to attend 4-year institutions; and 2) students are going to college at lower rates than in previous years, with the declines concentrated among 2-year community colleges.

**Examining Potential Differences Across Student Groups.** Aggregate numbers can mask variation between groups, including disparities between students from different racial groups and socioeconomic backgrounds. Disaggregation by race and socioeconomic status is particularly important because of Early College's guiding principle of promoting equitable access to higher education for those historically underrepresented.

We find that although Black and Latinx students enroll in college at lower rates than their White peers overall, there is a statistically significant positive difference for Black and Latinx students, with those who participate in Early College being 15 percentage points more likely to enroll in college than non-participants. Likewise, when disaggregated by socioeconomic status, although low-income students enroll in college at lower rates overall compared to their more advantaged peers, we

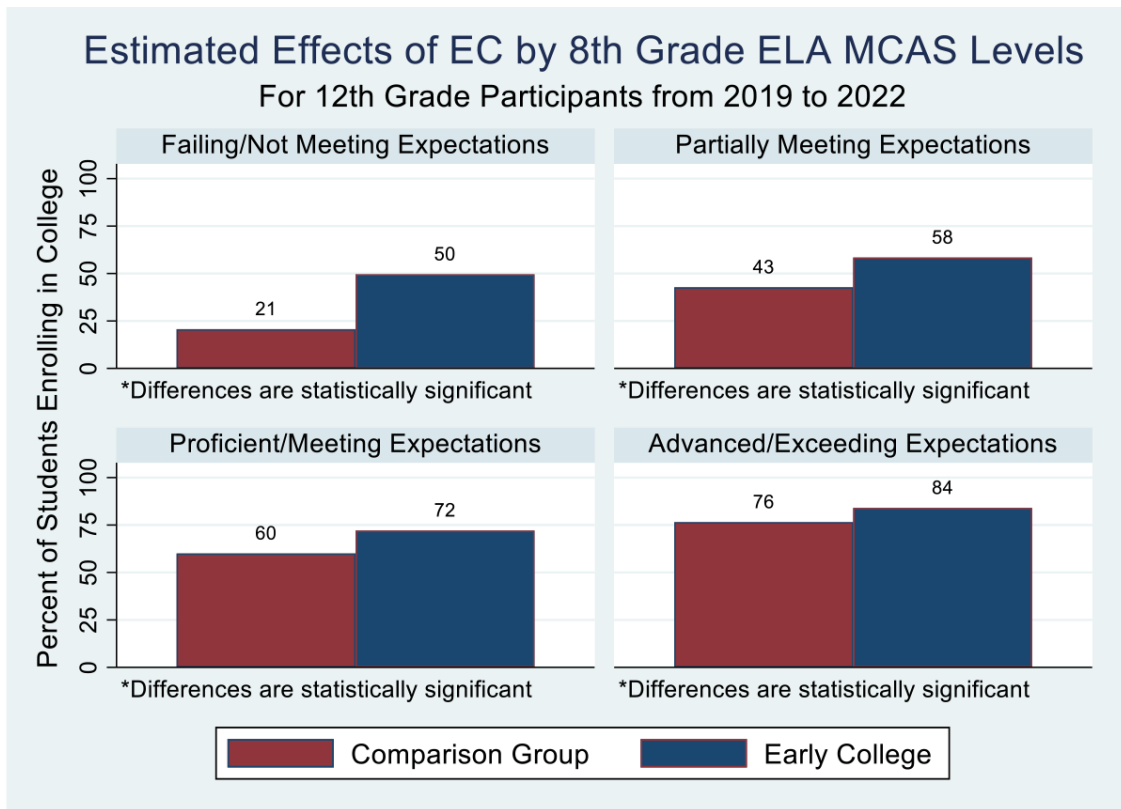
find a statistically significant positive difference of 16 percentage points for those who participate in Early College. In other words, low-income students who participate in Early College are 16 percentage points more likely to enroll in college than non-participants.

**Examining Differences Across Prior Levels of Achievement.** Furthermore, we find that Early College participation benefits students regardless of prior achievement. Higher achieving students enroll in college at higher rates and Early College participants, on average, are higher achieving than their school peers. We match on test scores to ensure the difference in outcomes did not exist prior to participation in the program. We also disaggregate in the analysis, to confirm that aggregation does not mask variation across test score levels.

Findings show that Early College participation appears to have made the biggest difference in college enrollment for those who did not meet expectations on 8th Grade ELA MCAS. However, only 6% of the nearly 3,900 12th Grade Early College participants in this study did not meet expectations on ELA MCAS. So, although participation in Early College makes the biggest difference in later college enrollment for lower achieving students, lower achieving students are the least represented group in the sample and in Early College programs.

For 8th Grade Math MCAS, we observe a similar, statistically significant pattern when comparing Early College participants and their matched non-participants across proficiency levels. That is, Early College benefited students of all proficiency levels and appears to have made the biggest difference in later college enrollment for those who did not meet

expectations on 8th Grade Math MCAS. However, it should also be noted that only 8% of nearly 3,900 EC graduates in this study did not meet expectations on 8th Grade Math MCAS. Despite the relatively low representation of students not meeting expectations in ELA and Math at 6% and 8%, respectively, the differences between EC and the comparison group are statistically significant. Given that Early College makes the biggest difference for this group of underrepresented students, promoting access for those with low prior achievement may be a key lever in promoting those students' later college enrollment.



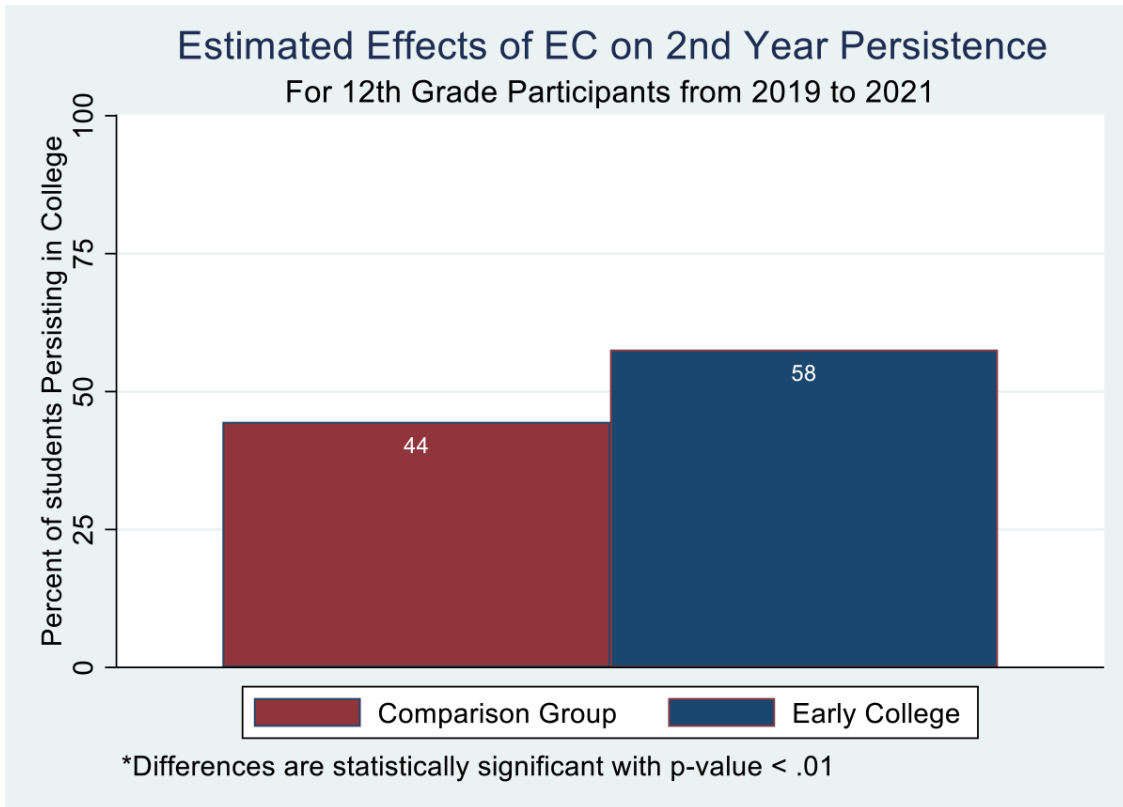
# College Persistence

Although promoting college enrollment may be a success, it means very little if students do not remain in college and go on to complete their degrees. Therefore, we investigated the difference in the rate at which Early College participants were persisting to a second year in college relative to their matched comparison group of non-participants.

Within the three applicable graduating cohorts, Early College participants persisted to a 2nd year in college at an estimated statistically significant 14 percentage points higher than their comparison group.

**Examining Potential Differences Across Student Groups.** When we disaggregate again by race and socioeconomic status, we observe that the estimated statistically significant 14 percentage point difference between Early College and its comparison group appears when looking just at Black and Latinx students, and that a statistically significant 15 percentage point positive difference exists in 2nd-year persistence between low-income students who participate in Early College and low-income students who do not participate in Early College.

**Examining Differences Across Levels of Prior Achievement.** Similar to its estimated effects on college enrollment across ELA MCAS levels, we estimate that Early College makes a statistically significant positive difference in 2nd-year persistence across 8th Grade ELA MCAS levels, but especially for those who do not meet expectations. Likewise, we estimate that Early College makes a statistically significant positive difference in 2nd-year persistence across 8th Grade Math MCAS levels, with the biggest difference for the lowest-performing students.



## Next Steps & Future Learning

At the time of the writing of this newsletter, only the initially established Early College programs have four years of data available for analysis. Given the steady expansion of the program, there is much that remains unknown about the impact of participating in Early College. For example, although we have estimated the effects on college enrollment and persistence into a second year, we don't yet know what the effects of Early College are on transfer rates to a four-year institution for those who enrolled in a two-year institution. Further down the line, what are the estimated effects of the Early College program on college completion



and on employability and earnings? And what about other Massachusetts High-Quality College and Career Pathways like Innovation Career Pathways, which was launched at the same time as Early College but focuses on connecting student learning to an in-demand industry sector?

DESE will continue to conduct analyses of pathway programs like Early College and share results as more information becomes available.

Original publication: <https://mailchi.mp/doe.mass.edu/state-of-knowledge-early-college>