Equitable Access to Dual Enrollment:
Learning from Two Cases of District Improvement Efforts in Southwestern Pennsylvania

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Executive Summary

This study examines two Southwestern Pennsylvania school districts—Northgate and Charleroi Area School Districts—as they designed, implemented, and refined strategies to broaden access to College in the High School (CiHS) dual enrollment courses to students systematically underrepresented in these courses. Using an improvement science framework and a mixed methods approach, we document the process of change and the outcomes of each school district's chosen intervention. We identify school-level and systemic enablers and barriers to districts' broadening access strategies with the aim of informing policy and practice across the region and state. Using data we collected through this research study and learnings from published studies on dual enrollment practices and impact, we provide practical recommendations to schools and districts, the region, and the state to expand access to these courses to strengthen college and career pathways for Pennsylvania's youth.

Northgate

- Northgate transitioned from a universal funding model—where all students enrolled in CiHS courses automatically received funding for credits—to an application-based, targeted approach during the grant period due to more limited financial resources.

Overall, the findings for Northgate District were as follows:

- The shift from universal to application-based funding led to a sharp decline in credit attainment, particularly among economically disadvantaged students, students of color, and students with IEPs.
- Even simple application processes introduced barriers; students and teachers reported confusion, stigma, and uncertainty about funding availability.
- Universal enrollment in CiHS courses—where 100% of 11th and 12th grade students were placed in at least one CiHS course—did not eliminate disparities in credit attainment but did appear to decrease gaps in attainment.
- While universal funding was more effective at promoting equity in credit earning, it is not financially sustainable for the district without ongoing external support.

Charleroi Area

- During the study period, Charleroi Area expanded its CiHS offerings beyond five core STEM courses, introduced intentional 8th-grade outreach to raise awareness about CiHS opportunities in high school, and implemented an application-based funding model to reimburse students for CiHS credits.

Overall, the findings for Charleroi Area District were as follows:

- Although 8th-grade students surveyed about the outreach intervention did not necessarily indicate a desire to enroll in CiHS courses, they were able to accurately identify the program's benefits—suggesting that even small interventions can be effective in informing students of their options.
- Preliminary evidence suggests that there may be stronger participation among students of color and economically disadvantaged students with the addition of new CiHS course subjects that reflect a broader range of non-STEM topics. Continued observation of the demographics of students enrolled in these courses will lead to a firmer conclusion of whether these diverse offerings broaden access to more and different students.
- While course offerings expanded and credit reimbursement was introduced, participation continued to skew toward wealthier and white peers. Expanding offerings and providing financial support can open doors—but only if barriers to access and awareness are also intentionally addressed and students receive adequate academic supports.

Cross-District Learnings and Implications

- **Financial support matters**: Students and teachers consistently identify cost as the most significant barrier to equitable CiHS access. Universal funding models most effectively promote equity in credit attainment, while even minor administrative hurdles—like requiring applications or up-front payment—can deter participation, particularly for underrepresented students.
- **Structural constraints limit access**: Rigid master schedules, teacher credentialing requirements, and limited staffing capacity may prevent schools from offering a wide range of CiHS courses or adapting them to meet the needs of different student groups.
- **Early and intentional advising is essential**: CiHS participation may improve when course awareness and planning are integrated into broader college and career advising structures—starting before high school and continuing throughout the transition to high school.
- **Transferability remains unclear**: Students, families, and school staff often lack clarity about where and how CiHS credits will transfer. Institutional providers commonly recommend that students contact their intended colleges directly—placing additional burden on families and potentially undermining the perceived value of CiHS at the time when students are choosing high school courses.
- **For the greatest effectiveness, schools ought to align CiHS goals with college and career structures already in place**: CiHS programs are most effective when they reinforce—not compete with—existing advising and academic pathways. As access

expands to more academically diverse students, teachers need pedagogical support and planning time to differentiate instruction while maintaining college-level rigor.

Introduction

The Institute of Politics (IoP) at the University of Pittsburgh delivers nonpartisan information to policymakers and citizens across the Western Pennsylvania region. Its work aims to improve quality of life, enhance government efficiency, and promote economic prosperity. Through stakeholder committees, the IoP convenes regional decision-makers to inform policy development that supports these goals.

In recent years, the Institute has focused on building effective connections between secondary and postsecondary educational opportunities. This work is rooted in the understanding that many family-sustaining jobs increasingly require some level of postsecondary training or education. The IoP identified dual enrollment as one strategy to attract students to postsecondary pathways and support them in that pursuit. Dual enrollment (DE) programs allow high school students to take college-level courses before graduation. These programs are commonly delivered in two ways: on college campuses taught by college instructors or by high school teachers on high school campuses. The National Alliance of Concurrent Enrollment Partnerships (NACEP)—a major accrediting body of dual enrollment programs in the United States—defines concurrent enrollment as, "The subset of dual enrollment courses taught by college-approved high school teachers in a secondary environment."[1,2]

In early 2021, the IoP formed the Task Force on Equity in Dual Enrollment and Pre-Apprenticeship Programs. This group brought together professionals from across the region to examine policy levers that could expand access to and equity within dual enrollment programming. The task force released its report, *Pathways to Opportunity: Expanding and Aligning College and Career Readiness Programs in Pennsylvania*, in December 2022.[3]

The report highlighted significant opportunity gaps in dual enrollment programs across Pennsylvania. Since 2011, the state has lacked a statewide system for dual enrollment. Without a unified vision, dual enrollment programs have been implemented unevenly across schools and districts, with variation in goals, course offerings, and funding models. This patchwork approach has resulted in inequitable access, often excluding low-income and racially/ethnically underrepresented students from these programs while continuing to serve students who are already on a college-going path. As a result, dual enrollment can have the unintended effect of widening—rather than closing—college access gaps.

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[1] https://www.nacep.org/about-nacep/what-is-concurrent-enrollment/

[2] There is limited research on whether the delivery method of dual enrollment leads to significantly different outcomes for students. One study, using data from the High School Longitudinal Study of 2009 and a propensity score matching approach, found no significant differences in outcomes based on whether courses were delivered on college campuses or high school campuses (Hu & Chan, 2021).

[3] https://www.iop.pitt.edu/sites/default/files/pictures/IOP_DualEnrollment_Report-WEB-final.pdf

The IoP Task Force's report offered 11 comprehensive policy recommendations to improve access and equity. These included maintaining high standards of academic rigor through accreditation, creating a statewide landing page to demystify dual enrollment and its benefits, and providing student scholarships to reduce financial barriers to participation.

Following the release of the report, the IoP sought to understand how school-level interventions might operationalize these recommendations. In 2023, the IoP issued a Request for Proposals (RFP) for school districts in Southwestern Pennsylvania to apply for a $40,000 grant to design and implement interventions aimed at increasing underrepresented student access to dual enrollment programs. The goal of this initiative was to identify promising practices and understand common barriers that districts encounter when attempting to expand equitable access to dual enrollment. These learnings would then inform broader policy decisions at both the district and state levels. The IoP contracted with the Evaluation for Learning team at the University of Pittsburgh's Learning Research and Development Center (LRDC) to study the selected districts' improvement efforts.

This report summarizes the research study insights around promising practices and barriers to implementing school-level interventions to expand equitable access to dual enrollment programming. By following two school districts over two years as they implemented interventions to meet this goal, we have documented their efforts and synthesized data collected to provide policy recommendations at the district, regional, and state levels for broadening access to dual enrollment programming among students that have historically been underrepresented.

High-level Literature Takeaways

Before we discuss the current study, we will summarize existing literature on dual enrollment's impacts on college-going outcomes. Between the spring of 2023 and the spring of 2024 alone, dual enrollment increased by 10% nationally, accounting for 28% of the growth in total undergraduate enrollment during that time (Causey et al., 2024). Despite the rapid expansion of dual enrollment programs, persistent equity gaps remain in participation. For example, in the 2022–2023 academic year, only 8% of dual enrollment students identified as Black despite making up 13% of undergraduate enrollment and 15% of public K-12 enrollment (Fink, 2024). Compounding these equity issues are inconsistencies in funding and data reporting across states which makes comparative studies evaluating the impacts of program designs difficult. Furthermore, national reporting on dual enrollment data remains inconsistent, with most states failing to report dual enrollment participation data altogether (Zinth, 2019). Additionally, funding models vary significantly by state and district, contributing to uneven access and outcomes across the country (Zinth, 2019).

Matching studies using state-specific data from a wide distribution of states like Colorado, Utah, Texas, and Maryland have found that students who participated in dual enrollment courses were more likely than their peers to enroll in college the year following high school graduation, more likely to persist in college (conditional on enrolling seamlessly), and more likely to earn higher wages five to six years after high school graduation (Buckley, Pendergast, Klopfenstein, Poast, & Ramsay, 2022; Hennenberger, Witzen, & Preston, 2020; Lee, Fernandez, Ro, & Suh, 2022; Haskell, 2016).

Studies using more rigorous causal methods have found similar results. For example, by capitalizing on a GPA minimum for DE course-taking eligibility in Florida, researchers determined that students that took a college-level algebra course were more likely to graduate high school, enroll in college, and earn a college degree (Speroni, 2011). A follow-up study determined that students exposed to the college-algebra course were also more likely to pursue a STEM major in college (Minaya, 2021). Using an analogous methodology that exploited a test score cutoff for DE eligibility, researchers found that eligible students were induced to enroll in college and, in particular, at 4-year institutions (Britton et. al., 2019). While other causal analyses did not find any effects of dual enrollment opportunities on overall college enrollment, they did find that students were more likely to opt out of 2-year institutions and into 4-year institutions or apply to and attend more selective institutions (Hemelt et. al., 2019; Liu et. al., 2025).

Some studies have shown that the benefits of dual enrollment do not vary significantly by income or race/ethnicity, while others have found that students from middling to lower achievement levels experience greater benefits (Hemelt et. al., 2019; Lee & Villarreal, 2021; Buckley, Pendergast, Klopfenstein, Poast, & Ramsay, 2022). Still other research suggests that dual enrollment can have a particularly strong impact on students who qualify for free or reduced-price lunch and on underrepresented racial and ethnic groups (Haskell, 2016; Hennenberger, Witzen, & Preston, 2020; Minaya, 2021; Lee, Fernandez, Ro, & Suh, 2022).

Some studies suggest that while low-income students and students of color benefit from dual enrollment, their gains do not always match those of their white and/or wealthier peers. For example, an Illinois study found that although these groups experienced meaningful college-going outcomes when they participated in dual enrollment, the effects on college enrollment and completion were still smaller compared to their white and wealthier counterparts—underscoring the need for more equity-minded supports (Taylor, 2015). A similar finding emerged from a Texas study, which also called for targeted supports for underrepresented students (Lee & Villarreal, 2021).

A case study of Virginia's 2005 dual enrollment expansion illustrates this dynamic further. Using mostly descriptive methods, researchers examined whether participation increased, particularly among racial and ethnic minority students and whether this influenced college enrollment and institutional type. While overall participation grew—especially among Black and Hispanic students—students of color remained significantly underrepresented, and the participation gap between white students and students of color did not change (Pretlow & Wathington, 2014). In fact, research has shown that states and districts that expanded dual enrollment access often saw widening participation gaps by race—further highlighting the need for intentional design strategies to support equitable access and success (Xu, Solanki, & Fink, 2021).

Design of District Efforts to Expand Dual Enrollment Access

The IoP invited school districts with existing dual enrollment programs to propose their own strategies for expanding enrollment to student groups that are often underrepresented in these

programs. Specifically, the IoP identified the following student groups for intentional focus of the improvement study:

- Racially/ethnically underrepresented student groups;
- Economically disadvantaged students;
- Students who may not have had prior access to Honors or Advanced Placement (AP) coursework.

Nine school districts submitted proposals during the summer of 2023. An IoP-organized selection committee reviewed these applications using a rubric and selected three districts who had intervention plans of interest to the committee and a willingness to share data to support the research. Before the start of the project, one district withdrew due to other priorities. As a result, IoP extended the project into a second year and awarded each of the remaining two districts an additional $20,000 to refine and continue their improvement efforts, offering the opportunity to extend the research into a second improvement iteration at each district.

Both participating districts operate concurrent enrollment programs, known locally as College in the High School (CiHS), in which college-level courses are taught by high school teachers on the high school campus (see Figure 1 below for additional details about the CiHS program in the southwest Pennsylvania area). At the conclusion of the first year, the research team presented initial findings to district leaders, who then used that feedback to adjust and strengthen their interventions in the second year.

Using Pennsylvania Department of Education data, we find that the median high school in the state offers 13 unique advanced courses, including dual enrollment, Advanced Placement (AP), or International Baccalaureate (IB) courses. An average of 22% of 2024 graduates across the state took a dual enrollment course before they graduated. Northgate District is above the state median and offered 16 distinct advanced courses in the 2023–2024 academic year. What truly sets the high school apart, however, is that 94% of graduates have taken at least one dual enrollment course. Charleroi Area School District is somewhat below the state average, which is more representative of rural districts in Pennsylvania. For example, in the academic year 2023–2024, Charleroi Area School District offered 7 distinct advanced courses and 17% of graduates had taken at least one dual enrollment course.

Figure 1 Features of CiHS programs

COMMON FEATURES OF CIHS PROGRAMS IN PENNSYLVANIA

Average Cost of Tuition:

- **CiHS costs vary widely across institutional types**. A community college may charge as little as $63 per credit hour while a four-year institution may charge as much as $100 per credit.

Payment:

- Although some **school districts** may subsidize the cost and some institutions may provide **scholarships**, tuition is mostly paid for **by families**.

Registration Process:

- **Students must pay for the CiHS course before taking the course**. Students do not receive refunds if they do not obtain a grade that qualifies them for credits.

Teacher Credentials:

- Most CiHS programs require teachers to have Master's degrees. However, Master's degree requirements vary by subject and institutional partner. To be accredited by NACEP, high school teachers must be approved by the appropriate college/university academic leadership and must meet the minimum qualifications the institution has identified for instructors teaching the course on campus. NACEP standards are under review for potential revision in 2026.

Research Approach

This study uses a case study approach to examine how two school districts designed, implemented, and iterated interventions intended to expand equitable access to concurrent enrollment. Our role as researchers was to identify and measure the outcomes of these interventions and understand the process of change—how each district approached improvements, responded to early implementation challenges, and adapted over time.

Our approach to this work is grounded in improvement science, a data-driven and iterative framework for designing, testing, and evaluating changes in real-world settings. By studying the act of making change—how and under what conditions change occurred—we aim to learn what conditions and strategies support continuous improvement in equity-focused dual enrollment programming within school systems.

We employ a mixed-methods design, drawing on both quantitative (e.g., enrollment patterns, student demographic characteristics, and credit accumulation) and qualitative data from a diverse set of stakeholders, including students, parents, teachers, counselors, and administrators. Our goal was to determine the effectiveness of each district's approach and document lessons learned.

We were particularly attuned to learning from the district's *process* for change so that we could identify enablers and barriers to their improvement strategies.

This study was conducted over two years, with findings from their first year shared with the districts to inform adjustments and refinements to their interventions in the second year. This feedback loop reflects our commitment to the improvement science process which embeds learning in the process itself.

Later in this report, we provide a deeper look at the history and structure of the concurrent enrollment programs offered by both districts, how CiHS is embedded in the larger college and career structures offered by the districts, the average characteristics of enrolled students, and the specific interventions selected by each district. We now turn to the overarching research questions that guided the current study, along with the data sources and collection strategies.

Guiding Research Questions

We co-developed research questions with each school district based on their individual interventions. We provide more details about those district-specific questions in the sections that follow.

In addition to the district-specific questions to understand specific interventions and processes of change, we developed a set of overarching research questions to better understand the concurrent enrollment landscape in Southwest Pennsylvania and how schools implement CiHS within the context of their existing college and career structures. These cross-district research questions guided our data collection methods:

- How do different models of and goals for CiHS shape student access and participation, particularly for students from historically underrepresented student groups?
- What do students and school staff view as barriers to CiHS participation, especially among underrepresented groups?
- In what ways do stakeholders perceive the value and impact of CiHS?
- What school, district, or state-level efforts could support equitable access to and success in CiHS courses, especially among students historically underserved in these programs?

Thus, within each of the two district contexts, we organized our inquiry around both this cross-district set of research questions and the district-specific research questions (provided in later report sections describing the specific site design).

Data and Methods

We use a mixed-methods approach to examine how the two partner districts designed and implemented strategies to broaden access to concurrent enrollment. These case studies focus on the act of making change—from planning through implementation to observed outcomes—with the goal of identifying lessons that can inform similar efforts in other districts across the region and

state. The distinct histories and approaches of each district offer potential practices that others may adopt or adapt to their own contexts.

To document each district's improvement journey, we collected a range of data capturing the perspectives and experiences of stakeholders, including students, parents, teachers, counselors, administrators, and partner institutions. A detailed description of these data sources is included in Appendix A, and a summary is presented in Table 1 below.

Table 1 Data collection summary

Source	Northgate District	Charleroi Area District	Other
Surveys	**High School Students** > N=38 (Year 1) > N=11 (Year 2)	**High School Students** > N=95 (Year 1) > N=47 (Year 2)	
	Teachers > CiHS only – N=9 (Year 1) > All teachers invited – N=18 (Year 2)	**Teachers** > CiHS only – N=4 (Year 1) > All teachers invited – N=10 (Year 2)	
	Parents > N=40 (Year 1) > N=11 (Year 2)	**Middle School Students** > N=75 (Year 1)	
Interviews	**High School Students** > N=4	**High School Students** > N=5	**Regional College Partners** > N=6
	CiHS Teachers > N=5	**CiHS Teachers** > N=5	
	District Admin and/or Counselors > N=3	**Counselor** > N=1	
Focus Groups	**CiHS Teachers** > N=7	**CiHS Teachers** > N=6	

District Profiles and Interventions

In this section of the report, we discuss each of the two cases by providing an overview of the district context to situate the work, describe the existing college and career support structures in place, describe the concurrent enrollment history and structures, outline the district's proposed intervention for greater dual enrollment equity, and then report on the implementation and findings in that district.

Northgate District

District Context

Northgate District is a small district located in Southwestern Pennsylvania, comprised of one high school with a total enrollment of about 300 students, roughly half the size of the Pennsylvania average for high schools (see Table 2 below). The high school and middle school in the district are combined and housed in the same building. The high school and middle school serve slightly more Black students, economically disadvantaged students, and students with a learning disability than the average Pennsylvania high school. The overall graduation rate is slightly below the Pennsylvania average, as is the graduation rate for economically disadvantaged and Black students. The student-to-counselor ratio is well below the American School Counselor Association's (ASCA) recommended 250:1 standard.[4]

Table 2 Northgate demographic characteristics compared to state averages

	Northgate	PA Average
Enrollment		
High School Enrollment	304	601
Student Demographics		
% Black Students	21%	15%
% Students Economically Disadvantaged	58%	52%
% Students with Learning Disabilities	24%	21%
% English Language Learner Students	2%	3%
Graduation Rates		
Overall	86%	88%
English Language Learners	100%*	73%
Economically Disadvantaged Students	77%	83%
Special Education Students	80%	76%
Black Students	81%	83%
Staff		
Student to Counselor Ratio	160.5	--

**Note: Graduation rates are based on very small population sizes.*
Data on enrollment, graduation rates, and student demographics are from the Pennsylvania Department of Education's website for academic year 2023–2024.

College and Career Structures

Northgate High School has built a comprehensive college and career support structure that prioritizes individualized attention. Each student is assigned to an Advisory class, a space where they can engage in college and career conversations with a teacher. The school's counseling team is able to build relationships with students due to the small student-to-counselor ratio. Counselors conduct "warm handoffs" between the 9th grade counselor and the upper-grade counselor, using a spreadsheet to track student interests and connect them with opportunities over their high school

[4] https://www.schoolcounselor.org/getmedia/a988972b-1faa-4b5f-8b9e-a73b5ac44476/ratios-22-23-alpha.pdf

career. Before students enter 9th grade, counselors hold one-on-one meetings with students and families to introduce them to the opportunities that are unique to Northgate (such as the CiHS program), though only about half of families attend.

Northgate's counseling team is supported by a Director of Equity and Partnerships who helps build community connections and expand access to college and career experiences. Students can participate in a myriad of career exposure opportunities such as work release, internships, and (when interest is high) a pre-apprenticeship program. On-site mental health services, provided in partnership with a local nonprofit, have freed up counselor capacity to focus almost exclusively on postsecondary preparation.

In 2023, Northgate introduced a college skills class for 9th graders to reinforce the school's message that all students are capable of postsecondary success and to better prepare them for the rigor of CiHS coursework. A new Business Communication course was also added to help students identify strengths and weaknesses through career inventories and goal-setting activities. Advisory classes, which function as an extended homeroom, continue this focus throughout high school, supporting social-emotional learning and long-term planning. Although teachers we spoke to indicated wide variability in the effectiveness and structure of Advisory, students generally indicated satisfaction with this program. By senior year, students complete a capstone project involving job shadowing, service, and a postsecondary plan that connects to real-world experiences.

Concurrent Enrollment History and Structure

In 2017, Northgate District launched a two-year pilot program offering College in the High School courses in social studies and English. The pilot was grounded in an ambitious goal: to help all students see themselves as college-capable, regardless of their postsecondary plans. Backed by the school board and an administrative team focused on student needs, the district embraced a culture of experimentation—"Let's try it. And if it doesn't work, we won't do it anymore. And if it does work, then great."

Following the pilot's success, the district removed "Honors" from course titles in 2018–2019 and began redesigning upper-level courses to align with CiHS standards. This shift marked a deliberate move away from a tracked model that had produced inequitable outcomes and toward a system where all students would be challenged academically. Rather than creating a separate college prep pathway, Northgate focused on raising the bar for all students and embedding rigor throughout the curriculum.

In 2019–2020, the district began receiving universal funding for concurrent enrollment from a generous local philanthropy, making college credits free and accessible for all students enrolled in CiHS courses. This funding allowed the district to expand CiHS offerings significantly; by the 2023–2024 school year, Northgate offered 19 advanced courses, including AP options, and all 11th and 12th graders were enrolled in at least one CiHS course. Additionally, to cultivate a college-like experience and encourage deeper learning, the school implemented a 4x4 block schedule with extended 90-minute class periods. During this period, administrators noted that some students graduated with 20 or more credits and others even entered college with enough credits to qualify as sophomores. The school also briefly explored associate degree pathways with a local community

college but found the model unsustainable due to misaligned expectations and resource constraints.

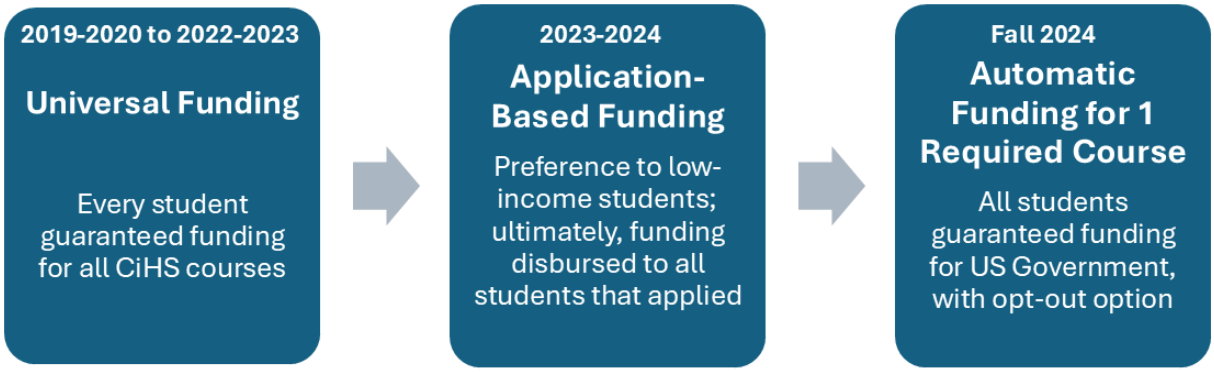
This shift has led to mixed perspectives among educators. Some teachers worry that the universal model may dilute rigor or give students a false sense of what college coursework entails. Others lament not having student postsecondary outcome data to understand the long run impacts of these policy shifts. Some teachers further note that limited resources for differentiated instruction in multiple-ability classrooms impact the quality of instruction and student experience.

Universal funding for CiHS course credits was depleted in the 2022–2023 school year, which became the impetus for Northgate to apply for the IoP grant. Though 100% of upperclassmen remain enrolled in CiHS courses, not all receive college credit upon passing the course because they had not paid the tuition fees. However, administrators hope that school staff have helped foster a culture in which students recognize the value of paying a fraction of the cost for college credit now, rather than paying full price later in college.

Goals and Interventions

When funding for universal CiHS from the foundation ended, the district could no longer pay for all students to enroll in the CiHS credits, even though they were taking a dual enrollment course. With the IoP grant, the district leveraged the opportunity to test a targeted approach with more limited resources. Their goal was to understand the impact of this transition on student participation in dual enrollment and to continue to promote these opportunities for underserved students. We display Figure 2 below to demonstrate the changes in the funding models at Northgate over time.

Figure 2 Northgate funding models over the years



Year 1: From Universal to Targeted Funding

In the first year of the grant, Northgate District sought to provide financial support to any student that applied for sponsorship, with preference for economically disadvantaged students. Students could apply for funding to cover multiple courses, so long as funding was available. This marked a shift from the universal funding model that had been in place since academic year 2019–20. Under the new approach, funding was no longer automatic—students now had to take action to apply.

This change raised questions for district leaders about equity and access, particularly how a move from universal to targeted support might affect student participation and success in CiHS courses.

Year 2: Automatic Funding for a Required Course

In Year 2, Northgate District received a smaller grant and adjusted its approach based on feedback from the research team. Recognizing that application processes can pose a barrier—especially for lower-income students—the district opted to automatically fund CiHS credits for all students enrolled in U.S. Government, a course required for graduation. Students, however, were given the ability to opt out of funding.

Research Questions

The following research questions were formed based on Northgate District's interventions:

- In a school that promotes equity in access to concurrent enrollment, what student-level patterns are associated with enrolling in CiHS courses but not earning college credit?
- How do shifts in concurrent enrollment funding models (such as universal funding; targeted, application-based funding; and guaranteed financial coverage for one course) change CiHS credit attainment, particularly by student subgroup?

Implementation and Results

All five CiHS teachers we interviewed reported a decline in the number of students pursuing CiHS college credits in the 2023–2024 academic year, following the shift from the universal to the application-based funding model. Two common barriers emerged. First, students were required to apply for funding—even though the process was relatively simple. Second, they had to pay out of pocket at the time of registration and were promised reimbursement later.

According to the principal, introducing an application process gave students time to question whether they could afford the risk: "They had to make that decision and there was that thought in their head that if I don't get this covered, can I afford it? It may have created this notion that—am I even going to go to college? Is it worth it to apply for this scholarship? Someone might need this money more than me."

Unlike universal funding, which reduces perceived risk, an application-based model introduced uncertainty. Students may have feared that funds would run out, doubted their own eligibility, or felt that others were more deserving. Interviewed CiHS teachers also raised concerns that some students may have been too embarrassed to ask for financial help. One teacher noted that the absence of universal funding could exacerbate inequities, disproportionately excluding lower-income and lower-achieving students from credit-earning opportunities.

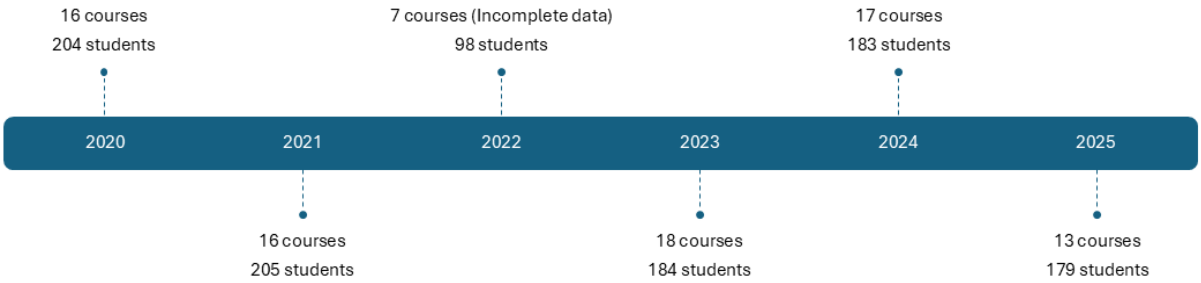
These concerns are supported by financial aid research, which shows that even small administrative hurdles can discourage students from applying for aid (Guzman-Alvarez & Page, 2021; Matheny, Lu, Bettinger, & Kienzl, 2022).

In the sections that follow, we first explore the demographics of students enrolled in CiHS courses as compared to the wider population at Northgate. We then examine the proportion of enrolled students that have obtained college credits overall and across time by student subgroups.

In a school that promotes equity in access to concurrent enrollment, what student-level patterns are associated with enrolling in CiHS courses but not earning college credit?

Figure 3 displays the number of College in the High School courses offered at Northgate High School and the number of students participating in those courses each year. Northgate has offered 13 to 18 CiHS courses per year since the 2019–2020 school year and a large portion of their grade 10, 11, and 12 students participate.

Figure 3 Timeline of Northgate course availability and students enrolled



While 100% of 11th and 12th grade students are enrolled in required courses that have been converted into CiHS offerings, not all CiHS courses are required. Students can also choose from a range of advanced CiHS electives, which are optional. Additionally, because of Northgate's block schedule, some 12th grade students complete their required coursework early and may not take a CiHS course in their final semester. The data also includes 10th grade students, who are eligible to enroll in CiHS courses but are not required to do so. For these reasons, we do not observe 100% CiHS enrollment across all grade levels or course offerings in the data we report below.

We first examine the racial, economic, and Individualized Education Plan (IEP) makeup of students participating in CiHS courses offered at Northgate as a proportion of the enrolled population.[5] Figure 4 below shows the percent of white students (in blue) and students of color (in gold) in grades 10, 11, and 12 enrolled in a CiHS course. The dotted vertical line represents the end of universal funding and the beginning of the targeted, application-based funding. Consistently, white students have been more likely to enroll in CiHS courses across years despite universal funding and a school-wide equity focus. This racial gap was consistent but variable over time. While the enrollment gap between white students and students of color decreased during the first grant year, this shift was largely driven by an overall drop in enrollment in elective courses. Research suggests that even with access to dual enrollment opportunities, this type of disparity may persist due to differential access to institutional knowledge, family guidance, and cultural capital that supports early and strategic course-taking (Spencer & Maldonado, 2021).

[5] We were unable to acquire student-level demographic data for all students enrolled at Northgate in the 2024–2025 academic year. Therefore, we show rates of enrollment by demographic subgroups for years 2020 to 2024. See Appendix A for more information.

Figure 4 CiHS enrollment, by white students and students of color from 2020-2024

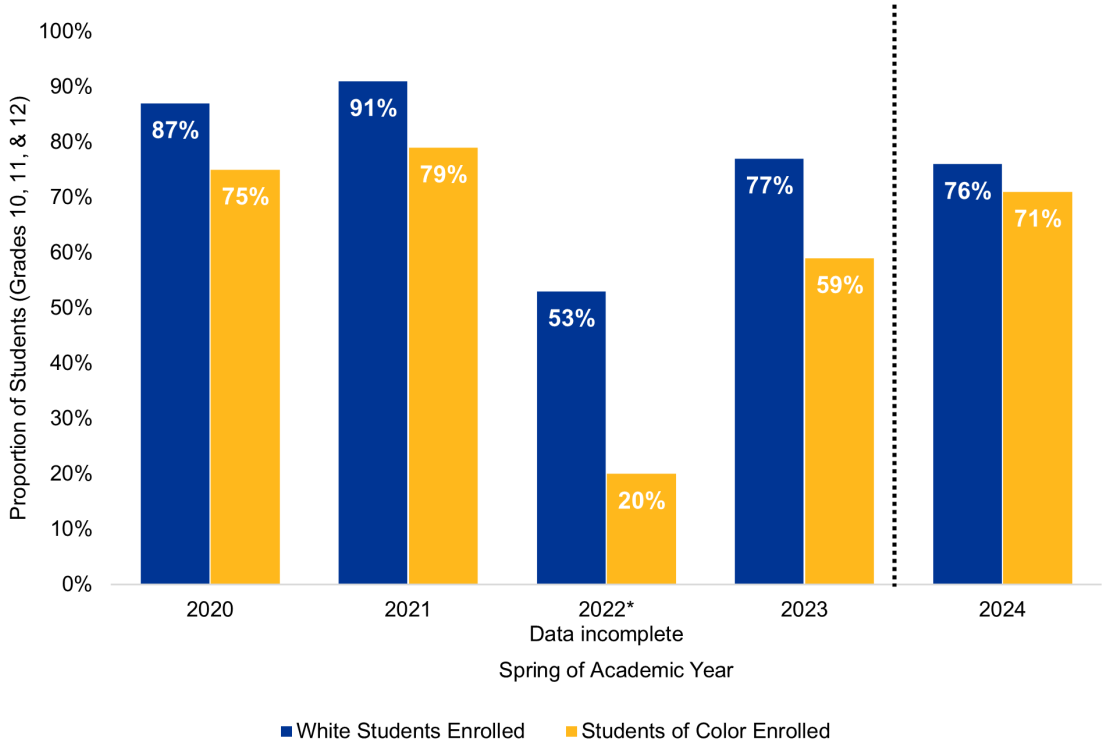
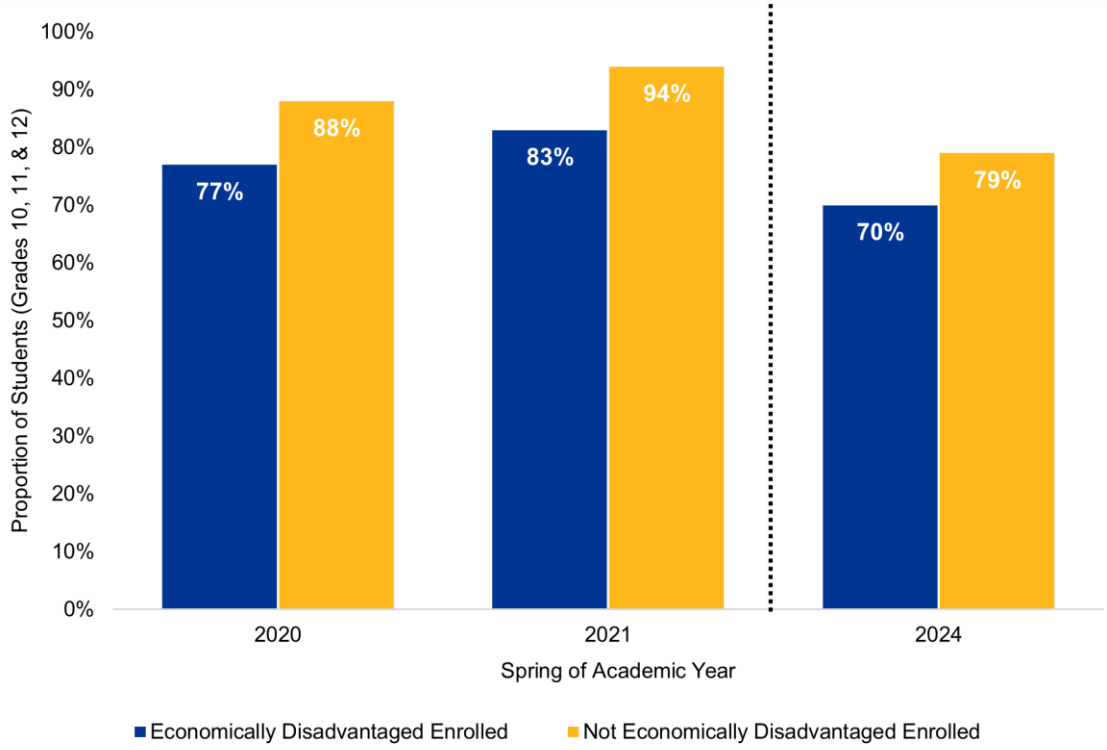


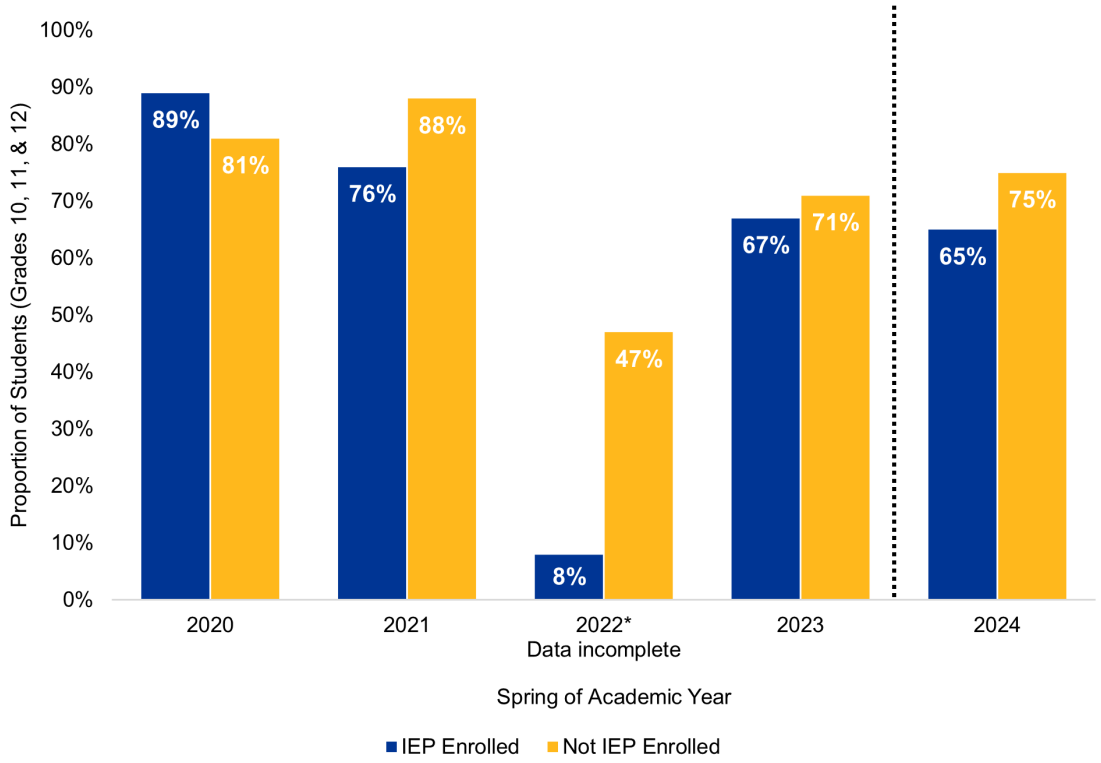
Figure 5 displays CiHS enrollment by economic disadvantage status. Due to the district's shift to universal school lunch funding in 2022, we are unable to disaggregate enrollment by economic disadvantage for the 2022 and 2023 school years. Additionally, the definition of economic disadvantage changed over time—from free or reduced-price lunch eligibility in 2020 and 2021 to direct certification in 2024. Because of these changes, we caution against making direct comparisons across years. That said, the data still offer meaningful insights. In 2020 and 2021, economically disadvantaged students were about 11 percentage points less likely to enroll in CiHS courses compared to their more advantaged peers. Although the indicator changed in 2024, a similar disparity persists. Therefore, an application-based approach that favors economically disadvantaged students did not appear to eliminate the gap in rates of CiHS enrollment between these two groups of students. Again, wealthier students are less likely to be first-generation college students and are more likely to have family members who can offer guidance on strategic course-taking.

Figure 5 CiHS enrollment, by economic disadvantage status from 2020–2024



We next examine enrollment in CiHS courses by IEP status in Figure 6 below. At Northgate, a quarter of enrolled students are special education or IEP students. Although students with no IEPs are more likely to enroll in CiHS courses, the gaps in enrollment are smaller in magnitude than the ones discussed above. In fact, in 2020, IEP students were more likely to enroll in CiHS courses than non-IEP students. The addition of a targeted application model to cover college credits did not appear to significantly reduce the minimal gap between these two student populations.

Figure 6 CiHS enrollment, by IEP status from 2020–2024



Overall, the persistence of disparities by race, IEP status, and economic disadvantage suggests that expanded access alone is not sufficient. One contributing factor may be a misalignment between middle and high school expectations. As of the 2021–2022 school year—the most recent year for which we have U.S. Civil Rights Data Collection (CRDC) data—Northgate Middle School only offered Algebra I to 8th graders, and only a third of students were enrolled. Given that Algebra I is a key prerequisite for many advanced high school courses, this could mean that academically advanced students are getting a head start on CiHS and AP course-taking, while others fall behind. This may point to the need for more intentional middle-to-high school transition supports that better prepare students for rigorous coursework in high school.

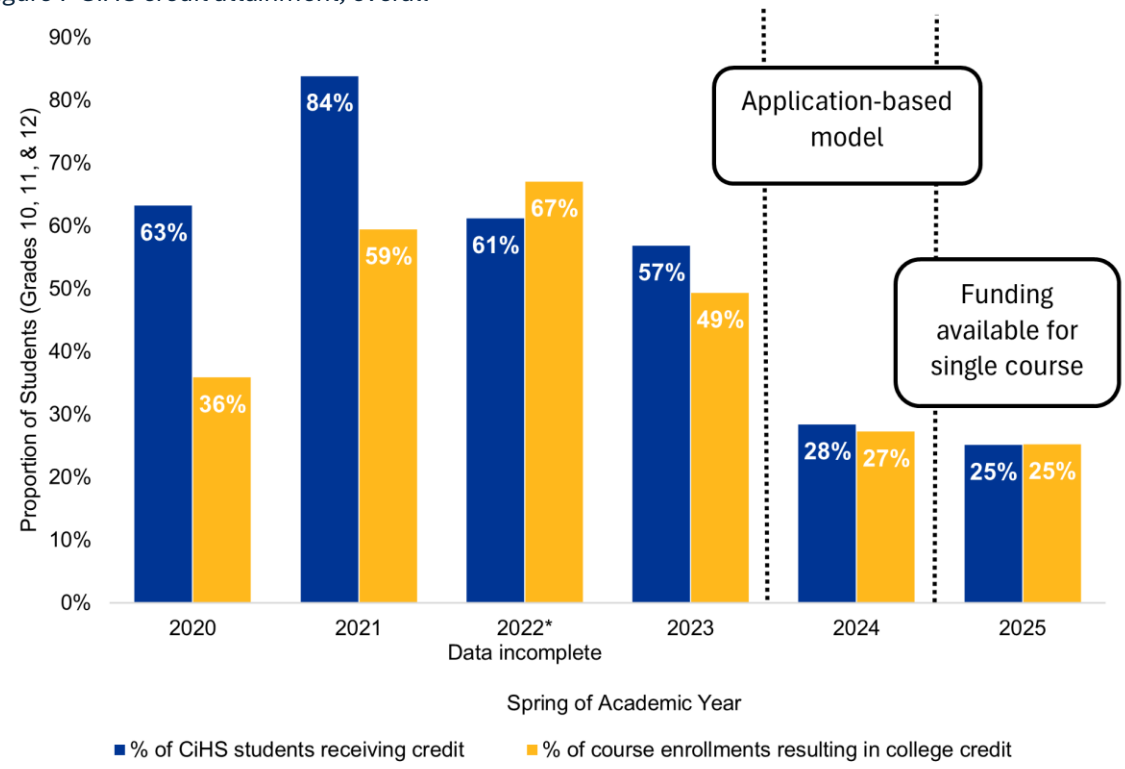
How do shifts in concurrent enrollment funding models (such as universal funding; targeted, application-based funding; and guaranteed financial coverage for one course) change CiHS credit attainment, particularly by student subgroup?

We next turn to credit accumulation. First, we examine credit accumulation overall and then by the student subgroups discussed above.[6] Figure 7 shows two key metrics: the blue bar represents the percentage of individual students who successfully earned college credit, while the gold bar shows the overall credit attainment rate, calculated by dividing the total number of credits earned by the total number of CiHS course attempts. The first vertical dotted line represents the change from universal to the application-based funding model, while the second vertical dotted line represents

[6] We were able to acquire demographic data for students enrolled in Fall 2024 CiHS courses only. We are able to breakdown credit attainment by these demographic subgroups, but we are not able to breakdown enrollments by the same demographics as mentioned in a previous footnote. See Appendix A for more information.

the switch to automatic funding for the required U.S. Government course. When universal funding was available, more than half of Northgate's enrolled 10th, 11th, and 12th graders received college credit. In 2021 and 2023, more than half of course attempts resulted in college credit. Unfortunately, once universal funding ended in 2024 and the targeted application model was introduced, credit attainment dramatically decreased to less than a third of students obtaining college credits. These patterns suggest that universal funding not only expanded access to elective CiHS courses but also supported stronger credit attainment outcomes overall. This finding reinforces what teachers and students indicated in surveys and interviews: the biggest barrier to CiHS credit obtainment is financial.

Figure 7 CiHS credit attainment, overall



Credit accumulation patterns mirror the enrollment disparities by demographic subgroups we observed above. While most students enrolled in CiHS courses earned credit during the universal funding model, students from historically underrepresented groups tended to earn credits at lower rates. Figure 8 below shows the proportion of white students and students of color obtaining college credits over time. In 2020, students of color were slightly more likely to earn credits, but this trend reversed in all other years. The disparity between white and nonwhite student credit accumulation grew dramatically in 2023 when funding for the universal model was depleted. The gap between these student groups remained large in 2024 and 2025 when the targeted models were introduced. Less than 20% of students of color earned college credit in these years. These findings highlight that even within an equity-focused school, systemic disparities persist—not only in who enrolls in CiHS courses, but also in who earns credit. The transition to targeted funding

appears to have exacerbated inequities in credit attainment for students of color, demonstrating the importance of a universal funding model in reducing racial gaps in credit accumulation.

Figure 8 CiHS credit attainment, by white students and students of color

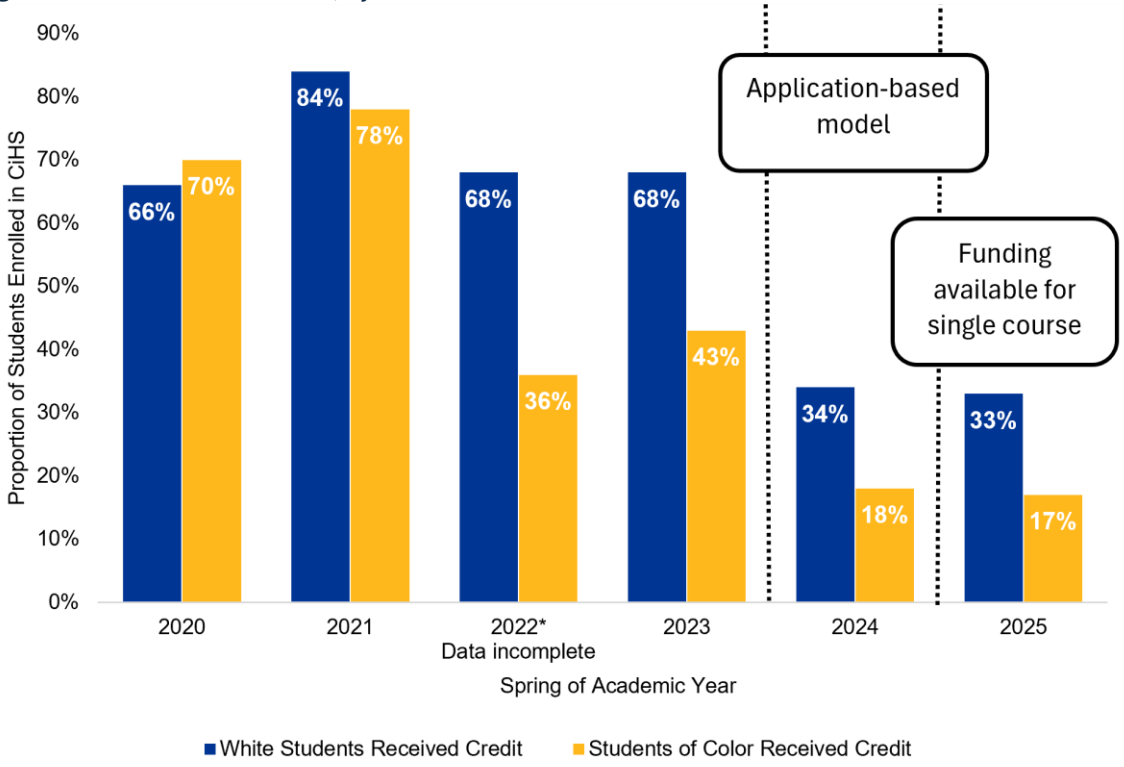
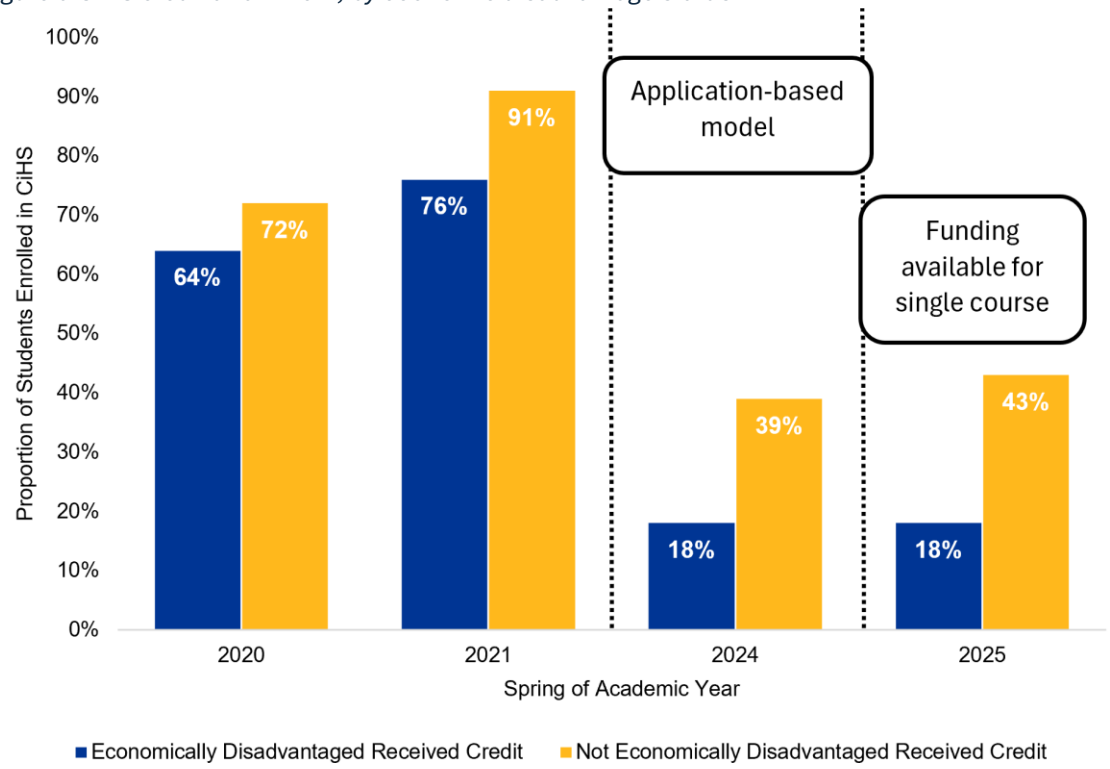


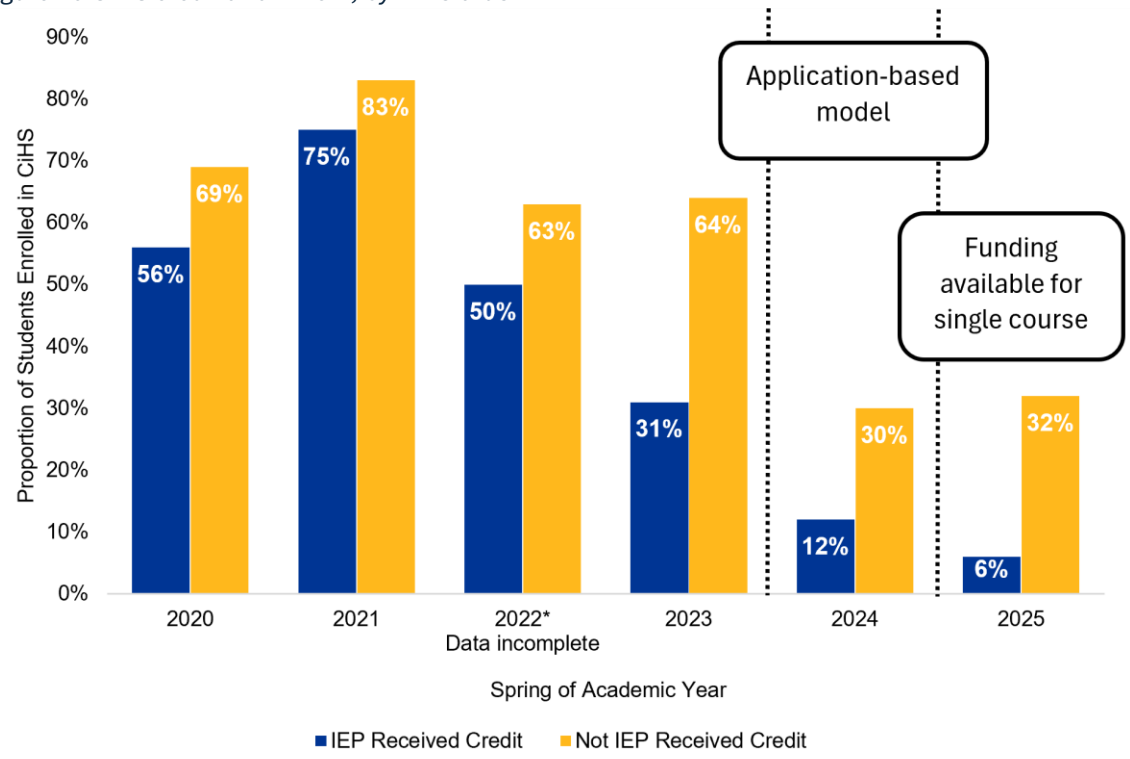
Figure 9 shows credit accumulation by economic disadvantage status. As a reminder, the indicator used to identify economically disadvantaged students changed between 2020–2021 and 2024–2025, so any comparisons across these time periods should be interpreted with caution. During the years when universal funding was in place, economically disadvantaged students were still less likely than their more privileged peers to earn college credit. In 2024 and 2025, when the district shifted to the more targeted funding models, the gap in credit accumulation was between 21 and 25 percentage points. The elimination of the universal funding model likely discouraged many students but had a profound impact on students from lower-income households.

Figure 9 CiHS credit attainment, by economic disadvantage status



Finally, in Figure 10, we display credit accumulation by IEP status. Similar to Figure 8, we see a pattern whereby disparities in credit accumulation between the two student groups existed even during the universal funding model, increasing in 2023 when funding was running out, and remaining persistent in 2024 and 2025. These patterns suggest that students with IEPs face persistent barriers to credit attainment, regardless of the funding model in place. Financial access alone is insufficient to ensure equitable outcomes for students with disabilities.

Figure 10 CiHS credit attainment, by IEP status



Even when financial coverage was guaranteed for the U.S. Government course in 2024–2025, the number of students earning credit remained significantly lower than under the universal model (see Figure 11 below).[7] Under the universal funding model, most students that enrolled in U.S. Government obtained credit. Under both the application-based and automatic funding models, credit attainment dropped substantially. In fact, only about a quarter of students in the U.S. Government course opted in to receive funding. According to the school counselor, it was unclear why students didn't make use of the funding. Teachers and counselors had informed students that the credits were free and could satisfy liberal arts requirements at a local partner institution, but this messaging did not appear to change behavior.

[7] Missing course information for academic year 2021–2022 included US Government. Figure 11, therefore, does not include the 2022 rate of credit attainment for this course.

Figure 11 Credit attainment in US Government from 2020–2025

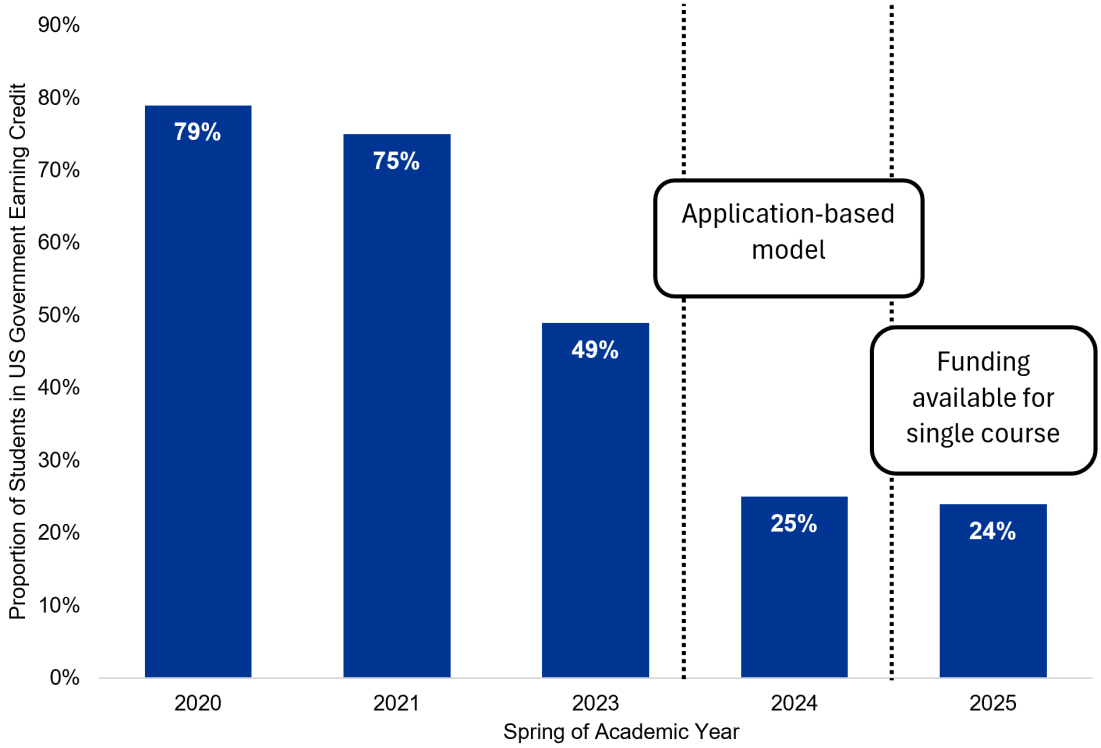


Table 3 below shows the percentage of students earning college credit by CiHS course in Fall 2025. Courses with the highest proportion of students receiving credit include several math offerings and one non-STEM course—Theories of Leadership.

Table 3 Credit attainment by CiHS course, Fall 2024

Course	Percent of enrolled students earning college credit
Statistics	63%
Theories of Leadership	53%
Pre-Calculus	50%
Biology	44%
Algebra II	43%
Language and Composition	35%
Chemistry	27%
US Government	24%
English III	22%
Human Geography	9%
English IV	8%
Computer Science	7%
Physics	0%

We have two potential theories for these patterns. First, all math CiHS courses are offered through the same institutional partner. It may be that students plan to attend this institution after graduation and see these credits as a worthwhile investment. Second, Theories of Leadership is a general education requirement for all majors at a popular area college, which may also drive student interest. In both cases, students may be making strategic decisions based on where they are likely to enroll after high school.

Alternatively, students may perceive math credits as more transferable across institutions, whether or not this is actually true. While we do not have direct data to confirm this belief, it may reflect a broader pattern of students seeking to earn credit in courses they view as having the greatest long-term value. Notably, these rates of credit attainment are occurring under a model where—outside of U.S. Government—students and families are solely responsible for tuition fees, giving credence to administrators' hopes that Northgate has fostered a culture whereby students and families would continue to see value in the CiHS program despite a lack of school-provided funding. Nonetheless, the universal funding model made clear that, if funding is available, more students—especially from underrepresented backgrounds—will take up the offer.

Overall, the shift from a universal to an application-based funding model led to a substantial decline in CiHS credit attainment, particularly among economically disadvantaged students, students of color, and those with IEPs. Barriers, such as up-front payment requirements, fears of ineligibility, and stigma around financial need may have discouraged student applications and, ultimately, credit attainment. These case findings are in line with the broader research literature which suggests that targeted funding models may exacerbate disparities in credit attainment, while universal models more effectively support equitable outcomes.

Charleroi Area District

District Context

Charleroi Area School District is a small district in Southwest Pennsylvania made up of a single high school, which shares a building with Charleroi Area Middle School. Historically, the school district has not been racially diverse but does serve a population where almost half of students are economically disadvantaged. The district maintains an overall graduation rate that is on par with other districts in the state (see Table 4 below) but is far below the graduation average for economically disadvantaged students.

Recent demographic shifts have substantially reshaped the student population and the broader community. Prior to the 2023–2024 school year, less than 20% of the student population identified as a student of color. However, there has been a substantial increase in migrant populations, leading to a dramatic increase in the number of English language learners (ELLs) in the district. In 2020, the district served under 30 ELL students. According to the school principal, that number has since grown to more than 200.

The bottom panel of Table 4 shows that the student-to-counselor ratio at Charleroi Area is under the American School Counselor Association's recommended caseload of 250:1.[8] The advantages of this small caseload are discussed more fully in the sections that follow.

Table 4 Charleroi Area demographic characteristics compared to state averages

	Charleroi Area	PA Average
Enrollment		
High School Enrollment	462	601
Student Demographics		
% Black Students	8%	15%
% Economically Disadvantaged Students	47%	52%
% Students with Disabilities	18%	21%
% English Language Learner Students	4%	3%
Graduation Rates		
Overall	88%	88%
English Language Learners	33%*	73%
Economically Disadvantaged Students	20%	83%
Special Education Students	72%	76%
Black Students	55%*	83%
Staff		
Student to Counselor Ratio	231	--

**Note: Graduation rates are based on small population sizes.*
Data on enrollment, graduation rates, and student demographics are from the Pennsylvania Department of Education's website for academic year 2023–2024.

College and Career Structures

College and career planning at Charleroi is supported through a structured guidance curriculum delivered in English classes across grades 9 through 12. Students also have access to various college and career exposure activities. Some of these activities are offered opportunistically rather than systematically. For example, college representatives occasionally visit during lunch periods or will host free college application days to support students, but these events are not necessarily structured into the school year. Additionally, the school has also hosted a few career fairs, inviting local employers who are actively hiring. One unique career exploration opportunity is Senior Interview Day, where students are matched with community volunteers from career fields that align with their interests to conduct a mock interview. These mock interviews give students a chance to practice professional communication and ask questions about industries in which they may be interested. Charleroi is also part of a rural teacher pipeline program developed by a local higher education institution that utilizes an education foundations CiHS course to achieve the goal of recruiting, training, and retaining teachers in rural districts in Pennsylvania.

[8] https://www.schoolcounselor.org/getmedia/a988972b-1faa-4b5f-8b9e-a73b5ac44476/ratios-22-23-alpha.pdf

Charleroi Area High School has two school counselors that loop with students throughout their high school years. This approach has allowed counselors to build strong relationships and tailor guidance based on student interests and needs. Due to the school's small size, counselor caseloads remain below 250 students each. This allows the counselors to meet regularly with students as they explore, identify, and refine their postsecondary plans. One counselor shared an example of helping a student navigate a gap year strategy to establish residency for in-state tuition at an institution located outside of Pennsylvania which required a series of actions by the counselor. The counselor stated the school is able to provide this in-depth support and flexibility due to its small size.

Concurrent Enrollment History and Structure

Charleroi offered concurrent enrollment courses in the past but didn't necessarily have a structure in place to sustain these course offerings. For example, the school used to have language courses and an architectural drafting course as concurrent enrollment opportunities, but over time these offerings ended—either because there was no one to teach them or because the partnership with the institutional provider ended.

A course on probability and statistics was the first CiHS course introduced at Charleroi Area in partnership with a major local university. The school began expanding and institutionalizing its current iteration of the CiHS program in 2021 when it started to branch out to new institutional partners. At the start of this study in the 2023–2024 school year, the school offered five CiHS courses—all in STEM subjects—with approximately 22 to 24 students participating across the five courses each year. Since then, Charleroi has continued to grow its program by adding courses in Education Foundations, English Literature, and—soon—world languages. The school now partners with a wide range of institutions. Course costs vary by institutional partner. The least expensive options are $225 per 3-credit hour course, while the most expensive is $350 per course.

CiHS Messaging and Course Placement

At Charleroi Area, CiHS courses are primarily framed as opportunities for upper-level students who are on a college-bound trajectory. However, teachers also view CiHS as more accessible than AP, since CiHS courses allow students the full academic year to demonstrate mastery, rather than relying on a single exam. According to the school staff we interviewed and surveyed, these concurrent enrollment courses are viewed as a way for students to earn college credit and get a head start on postsecondary coursework and readiness. Recruitment into CiHS typically happens through honors classes, which serve as the main pathway into the program.

Teacher recommendations are a key mechanism for CiHS course placement. Teachers who responded to the survey reported that their recommendation decisions are primarily based on whether students completed prerequisite courses and their grades in those classes. Overall GPA and attendance mattered less, and only one teacher mentioned using Keystone exam scores. However, there was no consensus on whether the district provides clear and consistent placement guidelines, with some teachers unsure of whether their recommendations were the final deciding factor in student placements. When asked about relaxing prerequisites in the teacher focus group, a few teachers expressed concern about relaxing prerequisites, particularly for students without strong foundational skills. One teacher pointed to students who struggled in their CiHS course after

missing early in-person honors coursework due to COVID as evidence of the need for strong preparation. Another staff member we interviewed noted that some teachers believe students should only continue in honors courses if they previously earned an A, underscoring the emphasis on academic readiness and pathways at Charleroi.

Goals and Interventions

Charleroi Area District identified several target populations for this study. They aimed to increase the enrollment and success of ELL students, economically disadvantaged students, and first-generation college students in CiHS courses. District administrators believed that some students may not yet know what they want to do after high school and that early exposure to college-level coursework could help them identify potential fields of interest. More broadly, school leaders hoped to reinforce the idea that college is an option for any student who wants to pursue it.

In Year 1 of the project, Charleroi Area School District implemented three interventions:

1. Offered an 8th-grade information session to raise awareness of CiHS before students selected their high school courses.
2. Purchased classroom materials for existing STEM CiHS courses to strengthen teachers' pedagogical options and increase student engagement.
3. Provided scholarships to cover the cost of CiHS credits, reducing financial barriers to participation.[9]

In Year 2, Charleroi Area School District continued promoting the scholarship opportunity while also expanding their course offerings beyond STEM, aiming to broaden access for students with interests in other areas.

Year 1: Expanding Access and Visibility

In the study's first year, Charleroi Area District implemented a financial assistance program to support student participation in CiHS courses. While all students were eligible to apply for funding, students qualifying for free and reduced-price lunch (FRL) were guaranteed reimbursement. In the end, all students that applied for the scholarship received it.

Alongside the financial support, Charleroi Area School District also planned to build early awareness and interest in concurrent enrollment courses by targeting middle school students for a structured information session in the spring of 2024. The district also invested in classroom upgrades in CiHS courses, including new equipment and supplemental materials, to make the courses more attractive and engaging. Finally, the district began transitioning additional courses into dual enrollment offerings as part of a broader expansion of the program at the high school level.

[9] Students applied for a scholarship with the possibility of covering credit costs. In addition, due to funding disbursement timelines, students at Charleroi Area High School did not know whether there would be funding to cover costs at time of course registration in year 1.

Year 2: Sustaining the Model

With a smaller grant in year 2, Charleroi Area District chose to sustain the funding model it introduced in year 1, maintaining guaranteed financial reimbursement for FRL-eligible students.

Research Questions

The following research questions were developed based on Charleroi Area School District's proposed interventions:

- How do middle school students respond to an intentional concurrent enrollment recruitment demonstration and presentation?
- How have the demographics of students enrolled in the CiHS program changed over time with the introduction of new and different CiHS courses offered?
- What are the observed shifts in CiHS enrollment and credit accumulation after the introduction of a reimbursement model, especially among students historically underrepresented in these courses?

Implementation and Results

How do middle school students respond to an intentional concurrent enrollment recruitment demonstration and presentation?

At Charleroi Area Middle School, early access to advanced coursework is limited. Algebra I is the only high school-level course available to 8th graders. In academic year 2021–2022 (the latest year for which we have data), only 12 students—just 10% of the 8th grade class—were enrolled in this course (U.S. Department of Education, 2024). This has implications for students' academic pathways. Students who have the opportunity to enroll in Algebra I in middle school likely have an increased probability of taking the right courses early in high school to be eligible to take upper-level science and math courses—such as CiHS offered in this district—later.

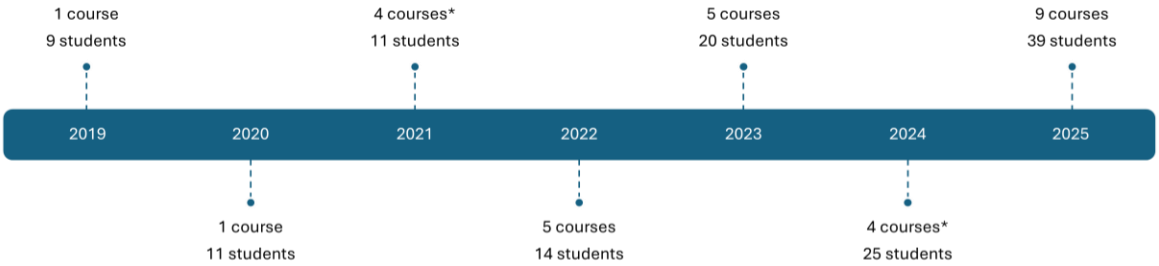
Charleroi Area High School counselors have taken steps to make the transition from 8th to 9th grade more intentional. In the first year of the study, counselors introduced a structured session to familiarize 8th grade students with College in the High School opportunities. As part of the effort, 8th graders visited CiHS classrooms to observe science demonstrations designed to spark interest. One counselor remarked, "I think more introduction to things in the middle school is the key." Teachers echoed this sentiment during the teacher focus group, emphasizing the importance of early exposure to CiHS and the courses required to get there.

After the presentation, 8th grade students completed a post-survey. Between 33 and 40% said they learned more about CiHS prerequisites, the study skills needed to succeed, and the program's benefits. Still, most students reported that their knowledge hadn't changed much. When asked whether they planned to enroll, 41% said yes, while many remained unsure—some citing concerns that the courses would be too hard. Despite their uncertainty, students were able to clearly articulate the value of CiHS in open-ended responses, suggesting that even limited exposure may help students better understand the program's potential.

How have the demographics of students enrolled in the CiHS program changed over time with the introduction of new and different CiHS courses offered?

Figure 12 below shows the overall growth in the CiHS program at Charleroi Area in terms of number of courses offered and number of students participating. In 2019 and 2020, Charleroi Area only offered one course—Probability and Statistics and around 10 students participated in each year. From 2021 to 2024, Charleroi Area added 3–4 additional courses, including Biology, Chemistry, Calculus, and Physics. Participation in CiHS increased to 25 students during the 2023–2024 academic year—the first year of the IoP grant. A total of 39 students enrolled in a CiHS course in 2024–2025. This year included the addition of the Advanced Foundations of Education course and a two-class English Literature course sequence. The sharp increase in 2024–2025—coinciding with the introduction of more diverse course options—indicates that broadening the types of courses available may be key to engaging more students in college-level work.

Figure 12 Timeline of Charleroi Area course availability and students enrolled[10]



Overall, consistent with teacher interviews and survey data, administrative data shows students enrolling in these courses have a history of fairly high academic performance. Over the years, no one with a cumulative GPA below a 3.0 enrolled in any of the CiHS courses. Additionally, there were no substantial changes in the average GPA of participating students across years.

In Figure 13 below, we show the racial makeup of CiHS students across time.[11] The blue bar represents the proportion of enrolled CiHS students that are white, while the gold bar represents the proportion of students who are students of color. Because the administrative data we received from Charleroi Area only included information on students enrolled in CiHS courses, we supplement this data with publicly available data from PDE. In the gray bar, we present the proportion of the entire student population at Charleroi Area High School that identifies as a student of color.[12] The vertical dotted line indicates the beginning of credit reimbursement. Historically, at Charleroi Area, the nonwhite student population has remained very small and has

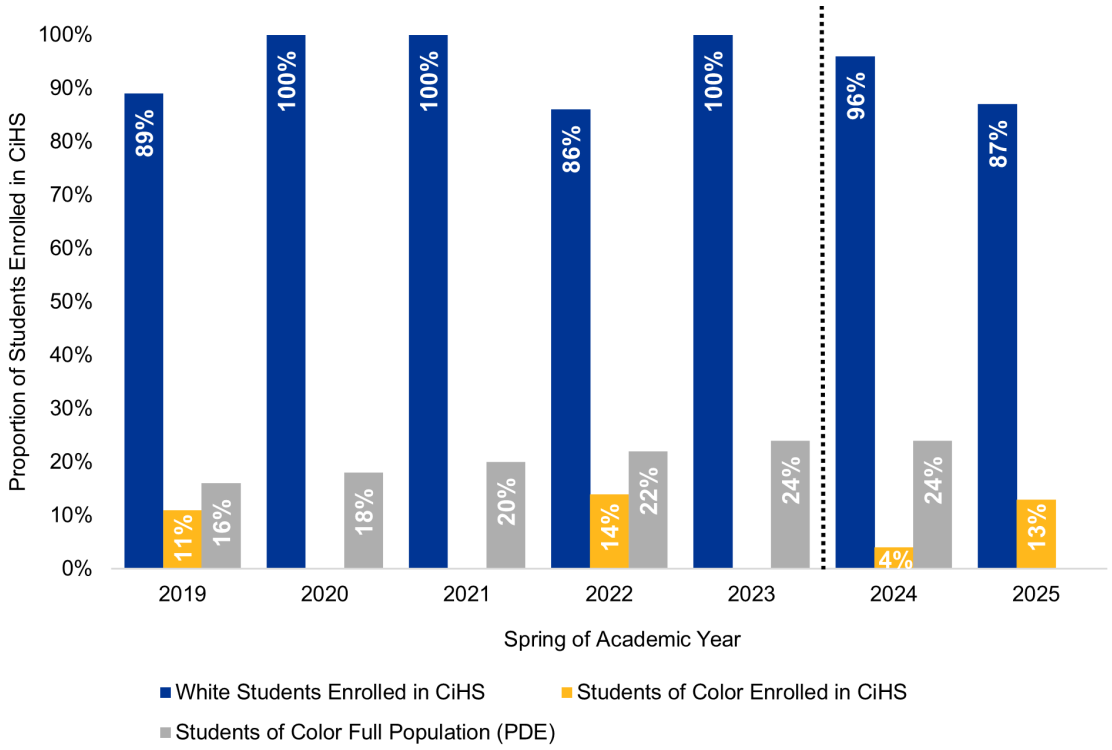
[10] After receiving administrative data from Charleroi, we later learned we were missing enrollment and credit attainment information for Business Calculus in years 2021 and 2024.

[11] We were able to acquire data from Charleroi Area on all students enrolled in CiHS courses across years, but not on the full population of students enrolled at Charleroi Area. Therefore, we present figures that show the demographic breakdown of students enrolled in CiHS courses. These figures are different than the ones we present in the Northgate section, which show CiHS enrollment as a proportion of the total student body at Northgate. As a result, we pair this data with publicly available data from PDE. See Appendix A for more information.

[12] At the time of writing, PDE had not yet released the 2024–2025 demographic numbers.

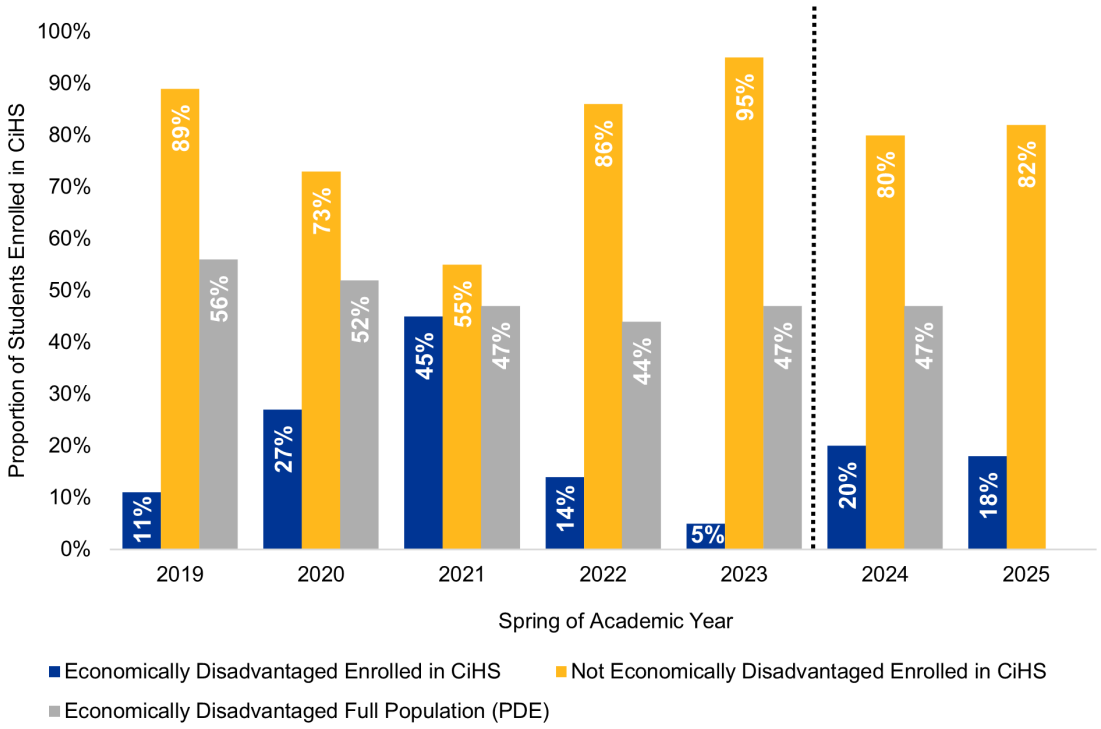
hovered below 20% of the total student population. In 2023 and 2024—the most recent year of data published by PDE—the percentage of students of color increased to 24%. Students of color participated in CiHS in only four of the years for which we have data. The greatest increases occurred in 2022 and 2025, the most recent academic year, where approximately 13-14% of CiHS students identified as a student of color. When we investigate which courses these students enrolled in, we find that students were spread across both the usual STEM offerings and the newer non-STEM courses. It is still too early to determine whether more diverse course offerings attract more racially diverse student groups, but we encourage Charleroi to continue monitoring the demographics of students enrolling in these courses.

Figure 13 CiHS enrollment by racial groups



We next look at the proportion of students enrolled in the CiHS program by economic disadvantage status in Figure 14 below. From 2019 to 2025, the economic disadvantage rate at Charleroi Area ranged from a low of 44% in 2022 to a high of 56% in 2019. The year in which the greatest parity in CiHS enrollment occurred among economically disadvantaged students was 2021. In all other years, CiHS course enrollment was heavily skewed toward students not considered economically disadvantaged. We do observe a slight increase in economically disadvantaged students enrolled in CiHS courses in 2024 and 2025 but cannot draw conclusions over whether this was due to an expansion of course offerings, the offer of credit fee reimbursement, or something else entirely.

Figure 14 CiHS enrollment by economic disadvantage status



We also examined course enrollment by IEP and ELL status. Only 2 students with IEPs participated in an AP or CiHS course throughout the years for which we have data. Three English Language Learners participated and just 1 student enrolled in Career and Technical Education (CTE). All of these students were enrolled in the 2024 and 2025 years, suggesting that offering more diverse courses combined with financial aid may attract more and different students. With continued data monitoring, Charleroi Area will be able to fully answer this question.

What are the observed shifts in CiHS enrollment and credit accumulation after the introduction of a reimbursement model, especially among students historically underrepresented in these courses?

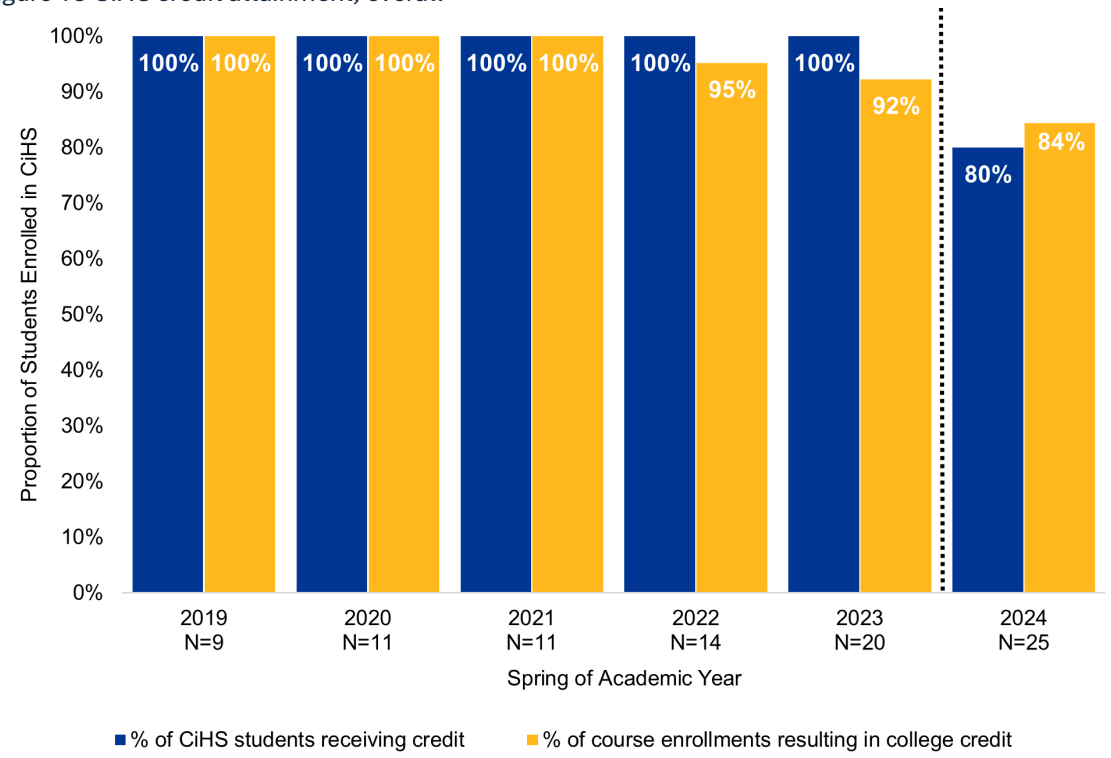
Charleroi Area School District introduced a financial reimbursement model to expand access to CiHS credits, with a specific focus on supporting students from low-income backgrounds. Under this model, all students were eligible to apply for reimbursement, but those receiving free or reduced-price lunch were guaranteed funding. The goal was to reduce financial barriers and promote greater equity in credit attainment. This approach remained consistent throughout both grant years.

Despite the availability of funding, the timing of the disbursement of the grant came after students registered to enroll in and pay for CiHS credits. Although counselors told students, “We’re 99% sure we’re going to reimburse you” during course enrollment, students were still required to pay upfront for class credits and wait for reimbursement. This timing may have limited participation, especially for students who might have enrolled if the burden of paying upfront was eliminated. Teachers also expressed concern that some students hesitated to apply due to confusion about eligibility or

discomfort while asking for help. As mentioned in the Northgate section above, studies on financial aid access repeatedly show that the introduction of any additional administrative burden can turn students off from applying for aid.

Figure 15 below shows the number of students enrolled in CiHS courses throughout the years (labeled below the x-axis), the percentage of unique students receiving college credit represented by the blue bar, and the percentage of course attempts that have resulted in college credit in the gold bar.[13] The gold bar represents the total number of course credits received divided by the total number of course attempts and includes the same students more than once. The vertical dotted line represents the year that grant funding was made available to students. In the years for which we have data, we can see that most students that enrolled in these courses received college credit. We learned through interviews that the counseling team has worked hard to ensure as many students as possible receive college credit through any means. In all instances where students did not receive credit, the student earned a D or F in the course. There were only two courses where this occurred—Biology and Chemistry. These patterns suggest that while Charleroi Area has maintained strong overall credit attainment rates, the decline in credit attainment as access grows points to the need for additional academic supports—especially in more challenging courses like Biology and Chemistry.

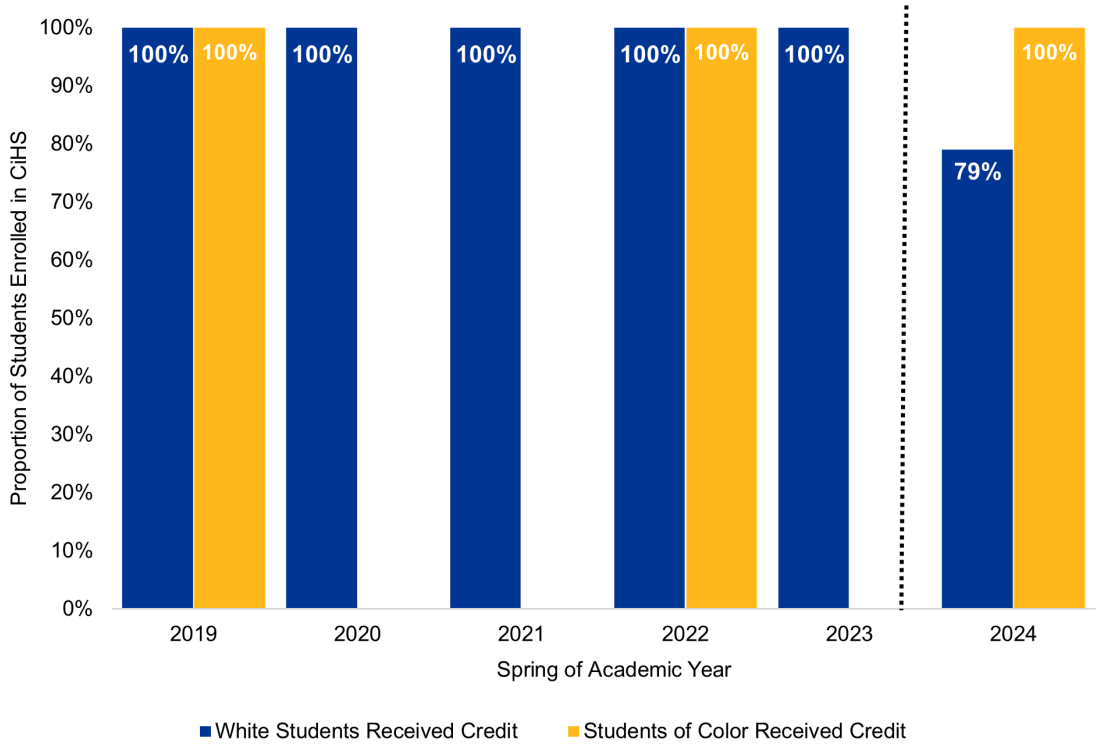
Figure 15 CiHS credit attainment, overall



[13] At the time of the administrative data transfer, credit attainment for academic year 2024–2025 was not available. Therefore, we only display one year of credit attainment data in the following figures. See Appendix A for more information.

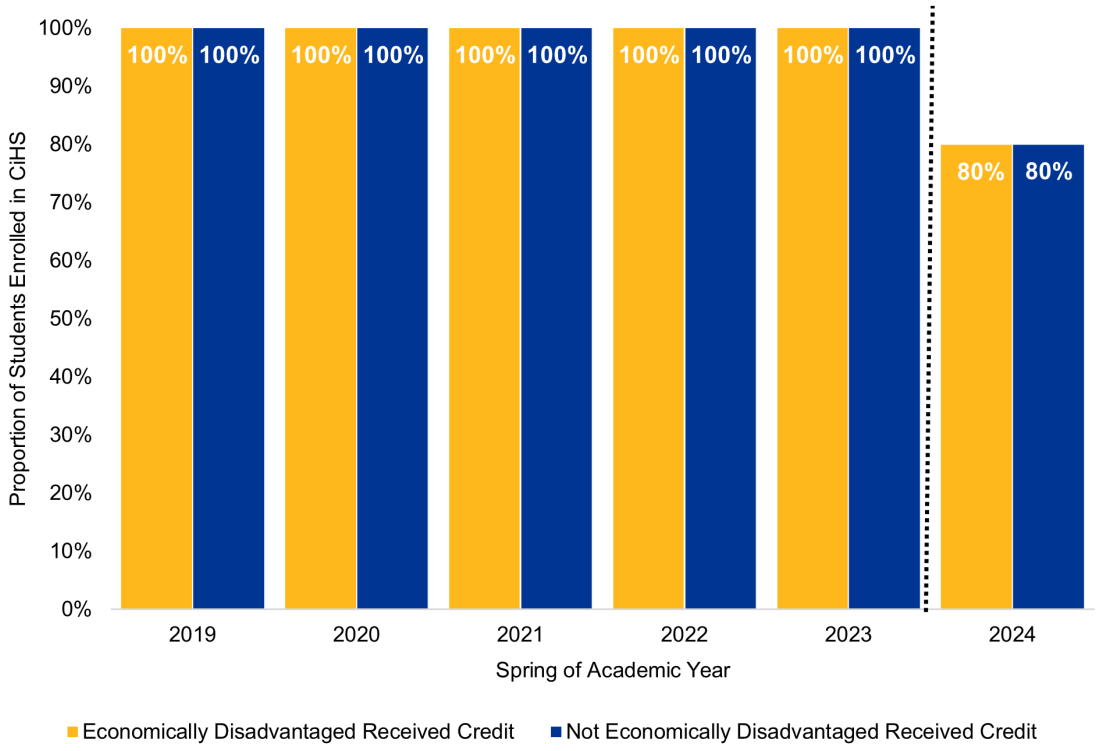
Figure 16 below displays the proportion of students receiving college credit by race/ethnicity. Although the number of students of color remains low in these courses, over the years 100% of students of color have received college credit for every CiHS course for which they enroll. No nonwhite students received grades lower than a C in these courses.

Figure 16 CiHS credit attainment, by racial groups



As mentioned in the previous section, the current makeup of CiHS courses still leans heavily toward students who are not economically disadvantaged. In interviews and student surveys, students with FRL-eligibility status were more likely to say funding availability influenced or would influence their decision to enroll in these courses. Figure 17 below shows the percentage of students enrolled in CiHS courses that received college credit by economic disadvantage status. Although enrollment in CiHS courses among students economically disadvantaged is low, once enrolled, there appears to be no difference in credit attainment by income status—suggesting that with adequate financial support, higher-achieving economically disadvantaged students perform just as well as their wealthier peers in these courses.

Figure 17 CiHS credit attainment by economic disadvantage status



Because the expansion of CiHS course offerings occurred alongside the introduction of grant-funded reimbursement, it's difficult to disentangle whether the increase in participation was driven by the financial incentive or by the availability of more diverse course options. Regardless, as access broadens, it is expected that students with varying levels of academic preparation will enroll—some of whom may struggle to meet the academic requirements to obtain college credit. The broader takeaway at Charleroi Area High School is that students historically underrepresented in CiHS may require earlier, targeted support—starting in early high school or even middle school—to navigate academic pathways and participate in these opportunities at rates comparable to their more advantaged peers.

Institutional Partner Perspectives

Throughout the early data collection within participating districts, we heard about the variation across institutional providers as influential factors in decision-making by district leaders, teachers, and even students. Although not part of the original study design, we expanded the data collection to include voices of regional institutional CiHS partners. We spoke with six institutional providers of concurrent enrollment programs. Five of these providers directly serve the school districts included in this study and represent major contributors to concurrent enrollment in the southwest Pennsylvania region. The sixth provider operates outside of the region but serves a large number of rural school districts. We included this provider because a significant amount of Pennsylvania school districts are rural and their perspectives provide important context for state decision-makers.

Barriers and Benefits

Postsecondary institutions involved in CiHS partnerships that we spoke to tended to fall into one of two categories: those focused on using concurrent enrollment to build recruitment pipelines (often paired with scholarships or structured pathways) and those aiming to broaden access for under-resourced or rural schools. One institutional partner essentially bridged both of these categories and served as a grow-your-own teacher pipeline program to retain talent in rural districts.

The level of sophistication in data tracking varied widely among partners. While some institutions had begun tracking student demographics and outcomes—occasionally using National Student Clearinghouse data that pools students' postsecondary progress across most of the nation's higher education institutions—others had minimal data infrastructure in place. All institutions emphasized the importance of college-level rigor employing syllabi alignment, review of assessments and outcomes, and faculty oversight of high school instructors as key quality assurance practices.

Affordability emerged as the most commonly cited barrier to equitable access among this stakeholder group. A couple of institutions provided scholarships to former CiHS students that completed the program, applied to, and attended the provider institution as another means to reduce financial burden. Those programs requiring high school teachers to hold master's degrees reported difficulties recruiting schools in rural or under-resourced areas due to staffing constraints. Additionally, institutions acknowledged that credit transferability often depends on the receiving college, with general education courses transferring more easily than specialized ones.

Suggested Improvements

Institutional partners identified several ways to improve access to and effectiveness of CiHS programs:

- More robust, standardized state-level structure for concurrent and dual enrollment.
- Increased grant funding for students.
- Greater flexibility in teacher credentialing requirements or funding for teacher graduate education.
- Development of comprehensive data systems to track participation and outcomes.
- Stronger collaboration with districts to develop career-aligned pathways.

Interviewees also expressed interest in forming a regional network to discuss credit transfer and share best practices. Some institutions already conduct outreach to under-resourced districts to support equity goals, but most partnerships are still formed through informal networks and word-of-mouth. Institutions emphasized that additional structure and coordination at the state or regional level would help scale their efforts and increase impact.

Overall Findings and Implications

Across the two cases, and in combination with the research base, we offer 8 key findings that might inform the IoP and its stakeholders committed to strengthening dual enrollment in the region.

1. **Clear articulation of a CiHS program's purpose enhances its design, alignment, and potential impact.**

When districts define the goals of their concurrent enrollment programs—whether to reduce college costs, build academic confidence, or increase access to college-level learning—they are better positioned to align course offerings, recruitment strategies, and support structures with those particular goals. For example, if a primary aim is to help students save money on college, schools may need to ensure all students have access to a semester's worth of credit-bearing courses that can fulfill general education requirements at most regional colleges. Without this, students accumulate college credits that may not, in the end, reduce the overall cost of their college education.

Survey and interview data show that students pursue CiHS for a variety of reasons—from earning transferable credits to save on college costs to preparing for college rigor. This reinforces the importance of aligning program design with students' diverse goals and the district's broader college and career readiness structures.

At Northgate, administrators described an ambitious vision to expand CiHS access for all students. This vision offers strong potential for impact, especially when paired with consistent communication and shared understanding among staff. However, 3 of the 11 CiHS teachers we anonymously surveyed were unsure of how recent structural changes—such as the elimination of honors courses and universal CiHS enrollment for upperclassmen—fit into the district's equity strategy. Greater clarity around purpose and implementation can help ensure that all educators are adequately equipped to support students effectively.

Similarly, at Charleroi Area High School, CiHS offerings have grown over time, creating opportunities for broader participation. As the district continues to expand its program, a clearly defined vision—paired with intentional messaging to educators, students, and caregivers—can strengthen efforts to identify and support underrepresented students. All interviewed teachers and students noted that current recruitment often occurs informally, suggesting a valuable opportunity to embed equity more explicitly into program outreach and design.

2. **Structural and systemic barriers—such as scheduling limitations, academic tracking, narrow course offerings, and teacher credentialing—compound financial challenges and prevent equitable access to concurrent enrollment.**

Across both districts and throughout every method of data collection, financial barriers were consistently cited as the most significant obstacle to equitable participation in CiHS courses. However, financial concerns alone do not fully explain the access gap, as can be seen with credit attainment rates at Northgate during the universal funding initiative. Structural factors—including course offerings, academic tracking, and school scheduling—play a critical role in shaping who can enroll and succeed in these courses.

Due to their size, both Northgate and Charleroi Area School Districts operate with limited staff capacity, which creates rigid master schedules and constrains what courses can be offered and when. In Charleroi Area District, this inflexibility disproportionately affects students who are not

already on advanced academic tracks. This was especially true for two students in the CTE program, who indicated on the student survey that they faced scheduling conflicts that made it impossible to participate. Charleroi Area students and teachers noted that CiHS offerings were concentrated in upper-level math and science, effectively excluding students who had not taken advanced coursework early in high school. As a result, even when financial support is available, students who have been tracked into less advanced courses may not be eligible to enroll in a CiHS course later in high school.

The principal at Northgate shared that hiring new teachers has been challenging, particularly when seeking candidates with master's degrees and the qualifications required by certain CiHS partner institutions. Institutional providers noted that this issue is especially common in rural districts, where hiring constraints are more severe. In the absence of public funding to support teacher credentialling, the cost of upskilling teachers falls to either the school district or the individual teacher.

The challenges faced by these small, resource-constrained districts reflect broader patterns in the region. Without intentional planning and the availability of funding to diversify course offerings, reduce scheduling constraints, and credential teachers, even well-intentioned efforts to expand access—such as subsidizing course costs—may fail to reach the students who need them most.

3. Concurrent enrollment access and impact are strengthened when college and career advising is intentional, distributed across multiple staff members, and begins early in a student's high school experience.

Dual enrollment participation depends heavily on how well it is integrated with existing academic advising and guidance structures. College and career exploration is most effective when responsibility is shared across teachers, counselors, advisors, and external partners, rather than being concentrated in a single individual—often the school counselor. Northgate District distributed this load through Advisory. Although half of Northgate District teachers we surveyed felt Advisory periods were not well-structured or achieving their intended goals, most of the student interviewees appreciated the opportunity Advisory provided to connect with multiple adults about their college and career plans.

Students at Charleroi Area District expressed a desire for more conversations with counselors and teachers about CiHS course options, pathways, and benefits. Charleroi Area's low counselor-to-student ratio enables more customized support and counselors are viewed as strong relationship-builders. However, counselors juggle multiple roles and there is currently no formal system in place for distributing these responsibilities among staff. Without additional infrastructure, it may be difficult to introduce more frequent or earlier touchpoints to get students on the path to CiHS.

Northgate District has implemented a system to meet with each caregiver individually to support student planning. According to the school counselor, only about half of parents attend these meetings. While the counselor at Northgate District noted these individualized conversations have influenced student course-taking, they are time-intensive. The district has identified parent engagement as a priority moving forward, including efforts to schedule meetings in the evenings and on weekends to improve participation.

Early engagement with students and families—particularly in middle school or at the start of high school planning—is cited by teachers and counselors as critical. During focus groups, teachers in both districts emphasized the importance of introducing CiHS pathways as early as middle school. Evidence supports this early exposure: one study found that students placed into algebra in 8th grade were 30 percentage points more likely to enroll in advanced math classes in 9th grade and on a pathway to take other advanced high school courses (McEachin, Domina & Penner, 2020). Early conversations ensure that students are aware of the academic standards required for participation and have the opportunity to meet prerequisites. This is particularly important at Charleroi Area District, where students who are not placed in upper-level courses in 9th grade may find themselves unable to access many of the available CiHS courses later on.

4. Conceptions of academic rigor and credit attainment can influence which students participate in AP or concurrent enrollment courses.

Clearly communicating the purpose, structure, and benefits of AP and concurrent enrollment courses is essential for helping students and families make informed decisions about which courses to pursue. Perceptions of academic rigor—and who belongs in each type of course—often shape enrollment patterns and access, according to interviewed CiHS teachers and counselors. Two surveyed Northgate District caregivers indicated in open-ended responses that the differences between AP and CiHS courses remained unclear, as well as the potential benefits each can offer their students.

Across both Northgate and Charleroi Area Districts, students and teachers we interviewed reported that CiHS courses are viewed as more accessible and less stressful than AP courses. AP is often seen as the more challenging option. Teachers noted that this perception is reinforced by the fact that AP credit depends on the outcome of a single high-stakes test, whereas CiHS credit is earned through sustained effort across the school year or semester. Research confirms that DE courses are often compliments to rather than competitive with AP courses, where higher-achieving students are more likely to enroll in AP courses and more students with middling achievement levels are often induced to enroll in DE courses (Hemelt et. al., 2019). For many students—particularly those who may not see themselves as “academically gifted”—CiHS feels more accessible.

5. Concurrent enrollment teachers value institutional partners who offer clear communication, practical supports, and flexible engagement, but variability across institutions may lead to different experiences.

In the focus group, Northgate District teachers expressed appreciation for institutional partners who provided helpful, hands-on support such as example syllabi, assistance with student registration, and classroom visits. These resources helped with course implementation and reduced the burden of course planning on teachers.

However, not all teachers wanted intensive involvement from their higher education partners. Some preferred a more hands-off but responsive relationship, valuing autonomy while still expecting timely communication and access to support when needed. This variation in preference suggests that successful partnerships are those that can adapt to the specific needs and schedules of partner high schools.

At the same time, teachers, counselors, and administrators acknowledged variability in the quality and engagement of institutional partners. Teachers described differing levels of communication, responsiveness, and support depending on the college or university. Interviews with institutional partners revealed that while many offer similar types of support—such as campus visits or help with registration—their involvement in course oversight varies. While teachers did not explicitly link these differences to course quality, it is possible that inconsistent engagement across institutions contributes to differential levels of rigor among CiHS courses in the region.

6. As concurrent enrollment programs expand and broaden, there is a growing need for pedagogical guidance to help teachers effectively support academically diverse classrooms while maintaining college-level rigor.

Northgate District's universal CiHS program, in which all students are enrolled and costs are fully covered, significantly expanded access. Northgate District teachers—due in part to the school's universal CiHS model—highlighted the difficulty of teaching students with varying academic skill levels in a single CiHS classroom. Nearly a third of surveyed teachers raised concerns about the academic readiness of some students, questioning whether course rigor has been diluted and warning that the current approach may lead to a false impression of what is required to succeed in college-level classes. One teacher reported specific challenges in supporting students with IEPs, noting that accommodations are not easy to implement in a college-level course structure. Nonetheless, results of this study demonstrate that universal funding and CiHS course-taking create conditions that allow IEP students to successfully enroll in these courses and obtain college credits.

Although we do not have data to determine whether this model has improved college-going outcomes, Keystone exam scores indicate that academic outcomes have not increased alongside the universal model; however, decoupling the model's impact from COVID's impact is difficult. The concern around diluted rigor suggests a need for more research on this model.

When asked to share strategies for engaging historically underrepresented students, some teachers pointed to the effectiveness of hands-on learning, gamified activities, and student-centered approaches. These methods were seen as more inclusive and better suited to supporting a broader range of learners. Still, a central tension remains—how to challenge high-achieving students while also scaffolding instruction for those who may need additional support.

Across both Northgate and Charleroi Area focus groups, teachers expressed a desire for more collaboration time and shared planning opportunities, along with clearer guidance on how to uphold academic rigor and engagement in CiHS courses, especially if access is expanded by changing prerequisite requirements.

Recent research suggests that middle-achieving students may benefit most from concurrent enrollment exposure by gaining academic momentum and confidence (Hemelt, Schwartz & Dynarski, 2020). Research also supports the idea that broadening access to dual enrollment must be accompanied by additional instructional supports (Bailey & Schudde, 2023). Without attention to pedagogy, well-intentioned equity strategies may unintentionally dilute course quality or leave some students behind.

7. **A lack of clarity around credit transferability creates confusion and may undermine the perceived value of concurrent enrollment among students, families, and teachers.**

Across both districts, teachers, students, and caregivers expressed uncertainty about where and how CiHS credits would transfer. While many believed in the benefits of dual enrollment, the lack of consistent, accessible information about credit transferability raised questions about its value.

Even institutional partners acknowledged that transferability depends largely on the receiving institution. Students are often advised to contact colleges directly to determine whether their CiHS credits will count toward degree requirements—an additional burden on students and families, especially those with little experience with higher education institutions. In addition, students are choosing whether to enroll in dual enrollment courses long before they have identified the set of postsecondary institutions to which they may apply.

Teachers voiced a strong desire for clearer, more reliable guidance on how dual enrollment credits are treated across different postsecondary institutions. Without this information, it becomes difficult to advise students or extol the benefits of the program.

Policy Recommendations

Based on the insights gleaned from these two case studies, field knowledge, and the IoP's past dual enrollment work and stated goals, we offer the follow set of policy recommendations that, if implemented, might support more equitable dual enrollment infrastructure and participation.

1. **If dual enrollment/concurrent enrollment is a critical part of Pennsylvania's education and workforce strategy, policymakers ought to consider funding a set number of dual enrollment credits for each graduate.**

The two case studies we presented in this report demonstrate the unsustainability of districts covering concurrent enrollment fees on their own. Research indicates that simple messaging and universal coverage is critical for increasing student participation (Zinth, 2019; Mehl, Wyner, Barnett, Fink & Jenkins, 2020). Northgate student interviews highlighted that funding application steps cause some students not to apply because they assume that they would not be eligible.

States where students pay no tuition (i.e., state-funded models) see increased participation and reduced stigma around receiving financial aid (Zinth, 2019). Simplified, transparent models are easier to implement for all stakeholders.

The state of Pennsylvania may want to consider a state budget line item covering a set number of dual enrollment credit hours per public school student. If, for example, the state considers covering 6 credit hours per student and we use the most expensive dual enrollment program cost of $100/credit hour, this would amount to $600 per Pennsylvania senior. In academic year 2023–2024, according to PDE, there were approximately 150,526 public school seniors. Covering 6 credit hours of dual enrollment would amount to (600 x 150,526) $90,315,600. In fiscal year 2024, the state spent $2 billion on higher education and provided $430 million in student financial aid.[14] Paying for

[14] https://shef.sheeo.org/state-profile/pennsylvania/

6 credit hours of dual enrollment accounts for 21% of the state's financial aid budget and helps achieve similar goals: broadening access to higher education opportunities by making higher education more affordable.

2. The state or region may consider policies ensuring credit transferability among institutions for a set of courses. Alternatively, a set of institutions may consider articulation agreements for transferability of dual enrollment/concurrent enrollment credits across institutions.

Student and teacher interviews revealed confusion about whether concurrent enrollment credits "count" at various institutions, which may diminish the perceived value of these courses and make course selection decisions difficult. Without clear transfer pathways, students may opt out or be surprised when credits don't apply toward their intended degree.

In a study where college advisors were interviewed about their experiences with students with dual enrollment credits, the advisors cautioned that unless students know their major and institution, dual enrollment/concurrent enrollment credits earned may not transfer (Witkowsky, Starkey, Clayton, Garnar & Andersen, 2020). Place-based interventions—such as regional articulation agreements—could be a solution to increase transparency about how students might benefit from dual enrollment.

3. Conceive and build concurrent enrollment course sequences aligned with high-need fields in the state and/or region.

The state or region could consider building structured sequences of dual enrollment/concurrent enrollment courses that align with high-need fields and serve as clear postsecondary or workforce pathways. For example, a series of 2–3 courses in cybersecurity could position students to advance more quickly through related programs at partner institutions or could be established in partnership with industry partners as direct high school-to-career preparation. This recommendation complements and builds on the Shapiro Administration's Pennsylvania Economic Development Strategy to encourage economic growth in the state.[15] One of the goals of this comprehensive strategy is to increase pathways to the workforce so that all Pennsylvanians have the opportunity to earn a family-sustaining wage. The plan identifies five key sectors for growth: agriculture, energy, life sciences, manufacturing, and robotics and technology. The Administration wants to build industry clusters and rely on public-private partnerships to drive this effort. There is great opportunity for regional higher education institutions, school districts, and industry partners to work together to build out college and career pathways—including dual enrollment course sequences—based on these identified sectors that lead students to further postsecondary opportunities to earn certifications and/or degrees in these important fields.

Research recommends mapping dual enrollment/concurrent enrollment offerings to career pathways and creating course sequences within fields like health and IT (Edwards, 2011; Weir, 2019; Fink & Jenkins 2023). When students—especially students with lower academic backgrounds—find relevance in classwork to their lives or connections to career interests or future

[15] https://dced.pa.gov/newsroom/pennsylvania-gets-it-done-governor-josh-shapiro-launches-first-statewide-economic-development-strategy-in-nearly-two-decades/

employment, they are more likely to be engaged in coursework (Caspary & Warner, 2020). This approach helps students connect what they are learning with the real-world, which may be particularly beneficial for students seeking direct entry into the workforce.

One real-life example of a concurrent enrollment program with a career pathway focus comes from an institutional partner we interviewed, which is developing a concurrent enrollment pathway to support a "Grow Your Own" teacher pipeline program. This kind of alignment reinforces the value of concurrent enrollment by linking coursework to in-demand careers and helping districts meet local workforce needs.

4. **The emergent development of a statewide longitudinal data system that links K-12 data to postsecondary and employment outcomes positions the state for a more data-informed and evidence-based future. The state could consider enabling this system to allow (a) teachers and students to access student concurrent enrollment transcripts and credits across providers and (b) schools and districts to match participation in such programs with long-term student outcomes.**

Counselors and administrators—and some institutional partners—currently lack an evidence-based understanding of how dual enrollment impacts students, or which institutions best support their success. A comprehensive, state-supported data warehouse would enable more informed advising, support continuous improvement, and allow for regional and statewide program evaluations.

Many states have linked education and workforce databases to support this kind of analysis (Klein & Colorado, 2024), but, historically, Pennsylvania has lacked such a connection. As of October 2025, the state of Pennsylvania is actively building a postsecondary longitudinal data system that will allow decision-makers and policy researchers to identify whether a student enrolled in dual enrollment courses in high school, their major or program of study in postsecondary, the postsecondary courses they enrolled in, and matched college enrollment and employment outcomes. This data system will collect and store data on all 30 public higher education institutions in the state and will provide opportunities to evaluate the effectiveness of school and/or district dual enrollment programming on longer-term student outcomes.

5. **Districts and schools may benefit from a focused analysis of the role that prerequisites and academic readiness measures play in shaping access to CiHS courses, along with intentional alignment of pathway supports starting in middle school.**

Districts should clarify which academic measures and student competencies—such as reading, writing, and critical thinking—are essential to success in each CiHS course. Research shows that lower-achieving students can succeed in concurrent enrollment courses and that test scores alone are not reliable predictors of readiness (Lee & Villarreal, 2022). Other indicators—such as course-taking patterns, teacher nominations, or student self-recommendation—may offer more equitable ways to assess readiness and expand access (Barnett & Zinth, 2018).

If prerequisites remain, introducing students to dual enrollment opportunities in middle school—prior to scheduling high school courses—may be helpful. Charleroi Area District's eighth-grade intervention, while not strong evidence on its own, aligns with broader research suggesting that

early, systematic awareness-building and academic planning can help reduce inequities in dual enrollment access, especially when introduced before academic tracking begins (Fink & Jenkins, 2023).

The *Dual Enrollment Playbook* highlights strategies such as 8th grade shadowing of high school students, early advising plans, and academic pathways to help students and families plan ahead (Mehl et. al, 2020). Similarly, bridge programs have been shown to effectively prepare middle- and lower-achieving students for success in college-level coursework (Barnett & Zinth, 2018). Recent research also shows that expanding access to advanced coursework—through the intentional design of more inclusive, introductory-level options—can dramatically increase participation and demographic diversity, especially in STEM fields (Ganelin & Dee, 2025). This underscores the importance of both structural and instructional design in shaping who accesses and succeeds in college-level high school courses.

6. **Districts and schools may consider adopting a unified vision for introducing and expanding dual enrollment programming by identifying 1) the goals of the DE programming, 2) the resources needed to implement the program with high quality, 3) what strategies or short-term goals need to be utilized or achieved, and 4) what data needs to be collected and analyzed to ensure goals are being met.**

Dual enrollment researchers often describe these programs as "random acts" or a la carte models because high schools frequently introduce courses without a coherent goal. Without clear goals, districts struggle to design effective recruitment strategies or provide supports that help students select courses with long-term benefits and complete them successfully. Districts should consider how dual enrollment aligns with their broader college and career readiness structures and identify the specific outcomes they want to achieve before expanding offerings. For example, a district interested in leveraging dual enrollment to help students reduce costs of higher education would design a program differently from a district interested in using dual enrollment to raise awareness of and confidence in college for students not already on the college pathway. Clarity of goals, aligned design components, and accurate measures to monitor implementation and outcomes are critical to ensuring that the investment of resources produces the intended benefits.

When introduced haphazardly, dual enrollment often results in uneven access and is not paired with intentional advising. To avoid this, districts can use logic models, needs assessments, or theories of change to clarify goals, determine the resources and capacity needed, and define the data required to track progress. These tools also support transparent communication with stakeholders by making goals explicit and measurable.

7. **The Institute of Politics might consider partnering with existing dual enrollment organizations (such as NACEP) to develop a learning community supporting regional goals for dual enrollment access and success and strategies for districts to align their models.**

A learning community that includes district administrators and other key actors could help districts design comprehensive dual enrollment pathways and identify and share effective strategies to broaden access to these courses among historically underrepresented student groups.

Additionally, cross-site visits could give practitioners opportunities to observe effective concurrent enrollment program structures and implementation in action.

This report's two case studies illustrate the importance of alignment between goals and implementation. In *The Dual Enrollment Playbook*, developed by researchers at the Teachers College at Columbia University, the authors stress the importance of using data to identify equity gaps and to ensure interventions reflect stated goals (Mehl et. al, 2020). Without intentional design, concurrent enrollment programs risk reinforcing existing inequities rather than addressing them (Williams, Perry & Barker, 2024). There is a significant opportunity to use a networked approach to support districts in this evidence-based design work.

IoP could lead this work for the region by capitalizing on its partnerships and existing regional organizations. One example is the Future Driven Schools network of 47 school districts that are working together to reimagine education—an effort led by the School Superintendents Association (AASA) and Remake Learning.[16] This network could be tapped as a partner in broadening dual enrollment access. Superintendents and other school leaders are well-positioned to expand opportunities and engage the broader set of professionals, such as counselors and teachers, who need to be part of building intentionally designed dual enrollment structures.

Additionally, our interviews with institutional providers revealed that NACEP is not well known in Pennsylvania and that no regional NACEP chapter currently exists. Yet NACEP resources can be exceedingly helpful in implementing high-quality dual enrollment courses. For example, its resource library allows teachers to explore strategies and effective practices on their own time, which is what focus group teachers in this study emphasized would work for them. IoP can play a critical role in connecting district leaders with these kinds of organizations and resources, helping to build a learning community that both broadens access and identifies promising practices in dual enrollment.

8. Consider state or regional solutions to address the challenge small school districts face in building robust dual enrollment programs, including issues related to teacher certifications, master schedules, and staff sizes.

Charleroi Area School District's experience highlights the importance of ensuring equitable access to dual enrollment for students in rural and small districts, where limited staffing, teacher credentialing barriers, and rigid master schedules can significantly constrain courses taught on campus. State or regional-level support could help districts overcome these structural limitations. One idea raised by a counselor was the creation of a regional, cross-district CiHS program in which qualified teachers from one district could teach live online courses to students in neighboring districts—thereby expanding access to a broader set of advanced coursework. Implementation of such a model would require coordination across districts and would need to be reviewed and approved in collaboration with teacher unions.

[16] https://remakelearning.org/our-network/special-projects/future-driven-schools/

9. Consider how future trends in higher education—such as increased competition for students at higher education institutions and reduced reliance on government sources of funding—may affect the prioritization of dual enrollment/concurrent enrollment programs.

The future of higher education finances is uncertain. Declining investments in public higher education from state governments, cuts in federal grants to institutions, and the impending "demographic cliff" where the number of traditional-aged students from which colleges can recruit is dwindling combine to produce a rapidly changing postsecondary landscape.[17] All of these financial concerns together indicate that institutions may need to change how they operate or to prioritize certain programs over others. State and regional policy implementation will need to consider how these financial and strategic pressures may shape how willing and able institutions are to engage in dual enrollment partnerships moving forward.

Dual enrollment/concurrent enrollment holds potential as a long-term marketing and recruitment strategy—introducing students early to campus culture, coursework, and pathways. DE providers we spoke to indicated that these programs are utilized by institutional administrators to strengthen recruitment pipelines, which can be especially important for rural higher education institutions in the state.

[17] https://www.npr.org/2025/01/08/nx-s1-5246200/demographic-cliff-fewer-college-students-mean-fewer-graduates

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Appendix A

Student Interviews

In the spring of 2024, we interviewed four students from Northgate District and five students from Charleroi Area District high schools. We asked our partners at each school to recruit students representing a range of pathways through high school. This sample included students participating in Career and Technical Education (CTE), students who would be first-generation college students, low-income students, and students who may not have had any experience with concurrent enrollment courses.

Among the nine students we interviewed, a quarter identified as Black, more than half identified as boys, four were eligible for Free or Reduced-Price Lunch (FRL), and half were prospective first-generation college students.

We asked students a wide range of questions to understand their awareness of and experiences with CiHS courses, the perceived benefits of these courses, and how they thought other students might experience the program. We also asked about their experiences with the application process for financial aid to cover college credit costs during the intervention year. Finally, we invited students to reflect on how CiHS courses had impacted them and what changes they would make to improve the program and broaden participation among their peers.

Concurrent Enrollment Teacher Interviews

We interviewed five current or prospective CiHS teachers at each of the high schools in the spring of 2024. Teacher interview questions focused on their background and experience within the district and with CiHS specifically. We asked how students are recruited into upper-level or CiHS courses and what types of professional development, collaboration, or support have been most effective in helping them teach these courses with rigor.

We paid particular attention to understanding what best practices teachers have personally used—or seen their schools use—to engage and support students who have been historically underrepresented in CiHS courses. Finally, we asked teachers to describe the effects they've observed because of the financial aid made available to CiHS students through this grant.

Parent, Student, and Teacher Surveys

To broaden the pool of CiHS stakeholder voices, we collected additional perspectives through several surveys administered in partnership with the districts in spring 2024 and fall 2025.

First, we developed a student survey for all high school students. The survey asked about college and career readiness conversations at school, students' awareness of and experiences with CiHS, and their post–high school plans. For students enrolled in a CiHS course during the intervention year, we also asked about any changes they noticed in their classrooms, whether they applied for financial aid to cover college credits, and the extent to which available financial aid would affect future CiHS enrollment. Most questions were close-ended, with a few open-ended items for

additional feedback. In total, 49 students responded from Northgate District and 142 from Charleroi Area District.

We also surveyed CiHS teachers in 2024 and all teachers in 2025. In the first year, we asked CiHS teachers to reflect on what makes a good college partner, how they and their colleagues have supported underrepresented student recruitment and success in CiHS courses, and what they viewed as the most significant barriers to underrepresented student enrollment. In the second year, we asked all teachers to share the criteria they use to recommend students for CiHS or upper-level coursework and to offer their professional perspective on proposed policies and practices designed to broaden access, with consideration for both teacher effort/lift and student impact. A total of 27 teachers from Northgate District and 14 from Charleroi Area District completed the surveys.

Finally, at the request of Northgate District, we administered a parent survey to caregivers. This survey asked about caregivers' awareness and understanding of CiHS courses, their perceptions of the benefits for their students, and the types of supports they believe are necessary for student success in these more rigorous courses. We also asked whether their students applied for funding during the intervention years and what they saw as the primary barriers to CiHS enrollment. Across both years, 51 parents responded.

Concurrent Enrollment Teacher Focus Groups

In the fall of 2025, we conducted focus groups with current CiHS teachers in each school district. Seven teachers from Northgate District and six from Charleroi Area District participated. The purpose of the focus groups was to gather teacher perspectives on state and regional policies, as well as school-level practices, aimed at broadening access to concurrent enrollment courses.

The policies and practices discussed were identified through a literature review of dual enrollment studies and through stakeholder interviews and surveys conducted the previous school year. During the session, we facilitated a sticky note activity in which teachers identified the policies and practices they believed would have the greatest impact on student outcomes. This activity was followed by an in-depth discussion of their selections. Each focus group lasted approximately one hour.

District Administrator and Counselor Interviews

At the beginning and near the end of the study, we interviewed administrators and counselors most closely involved with the CiHS program in each district. At Charleroi Area, we spoke with one of the two counselors, who also served as our main point of contact. This counselor oversees several college and career initiatives and fulfills multiple roles within the school. At Northgate, we interviewed the principal, the upperclass counselor, and the curriculum director. Across interviews, we asked stakeholders how the CiHS program fits within their school's broader goals; how its benefits are communicated to teachers, students, and families; and what challenges they face in making the program equitable and accessible to all students.

CiHS Provider Interviews

We interviewed six providers of CiHS programs in Pennsylvania. Five of the six are major providers of CiHS programming in the southwest Pennsylvania region and serve the school districts that participated in the study. We asked providers how they view the CiHS program as a tool for advancing their institutional goals, the common challenges they face in recruiting high schools and serving students historically underrepresented in these programs, the frequency and types of data they use to evaluate their programs, their perspectives on CiHS program accreditation, and the improvements they would like to see at the state level.

Northgate District Administrative Data

The Northgate administrative dataset includes student-level demographic information such as race/ethnicity, gender, and economic disadvantage status for all students enrolled spanning academic year 2019–2020 through 2023–2024. Our analyses focus on key outcomes related to the specific research questions and allow us to identify trends over time as Northgate School District expanded its concurrent enrollment programming, as well as differences in outcomes across student subgroups.

Through data cleaning, we learned that there were several limitations to this dataset. CiHS enrollment data for the 2021–2022 academic year is incomplete. We were only able to obtain data for 7 of the 12 CiHS courses offered that year. Because the principal who served as our main point of contact during the study transitioned to another school, we were unable to secure the remaining data. Additionally, Northgate District adopted a universal school lunch model in 2021–2022, which made the economic disadvantage indicator unreliable for the 2022 and 2023 academic years. In 2023–2024, the district shifted to using direct certification as its measure of economic disadvantage. Finally, we were not able to obtain administrative data on student demographics for the full student population in the 2024–2025 school year. We were able to match students enrolled in CiHS courses in Spring 2024 to their demographics, however. We note where these data discrepancies occur in the narrative text of the report.

Table 5 presents descriptive statistics from this administrative dataset on students enrolled in grades 10, 11, and 12—the grades in which students are eligible to take CiHS courses. These grade level students are racially diverse, with an average of 20% of students identifying as Black and 16% identifying as multiracial, Asian, or Hispanic over the five years of available data. The school also serves a majority low-income student population.

With the exception of the 2021–2022 academic year (the year in which we are missing one semester's CiHS course enrollment data), most enrolled students at Northgate District took at least one CiHS course. Many of these students earned college credits through their participation; however, we observe a significant drop in credit attainment during the 2023–2024 school year.

Table 5 Northgate administrative data descriptive statistics

	2020	2021	2022	2023	2024
Female	46%	47%	50%	46%	50%
Male	54%	53%	50%	54%	50%
Black	17%	15%	21%	21%	27%
White	63%	66%	65%	66%	61%
Multiracial or Other Race/Ethnicity	20%	19%	14%	13%	12%
IEP	9%	13%	13%	12%	11%
Low-Income (Direct Certification)	59%	58%	--	--	56%
Enrolled in at least one CiHS Course	61%	65%	30%	55%	56%
Earning Credit for at Least One Course	40%	54%	19%	31%	16%
N	242	229	248	250	248

Charleroi Area Administrative Data

Although we requested data on all students enrolled at Charleroi Area, we were only able to access data for students who took CiHS courses between 2019 and 2025. For these 132 students, we have information on grade level, economic disadvantage status, ELL status, gender, race/ethnicity, and cumulative GPA. We also have course-level data, including course name, final grade, and whether the student received college credit. To understand how representative CiHS participants are compared to the broader student population, we pair this dataset with publicly available information from the Pennsylvania Department of Education and FutureReady.