



Iowa High School Graduates Pursuing Education Beyond High School

Iowa's Statewide Longitudinal Data System Report

This Brief is a product of Iowa's Statewide Longitudinal Data System, a partnership between the Iowa Department of Education, Iowa Area Education Agencies, Iowa Board of Regents, Iowa College Student Aid Commission, and Iowa Workforce Development. It was written by Emily Cataldi, Jason Crowley, Mitch Lingo, Meghan Oster, Jason Pontius, and Claire Waletzki. Contact the authors via Emily Cataldi at emily.cataldi@iowa.gov.

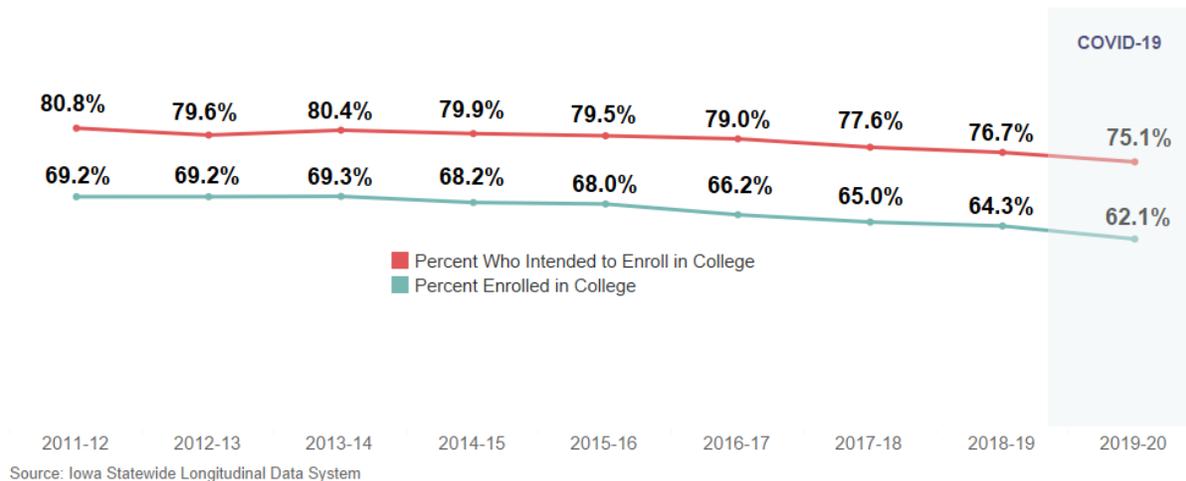
Table of Contents

Overview.....	2
The Brief.....	3
Findings: What does not explain the decline?.....	4
A Drop in Graduates.....	4
An Increase in “Gap Year” or Delayed College Enrollment.....	4
Preparation for College.....	4
Findings: What helps explain the decline?.....	5
Shifts in the Population of Iowa High School Graduates.....	5
Fewer Men Enrolling in College.....	6
Differences by Institutional Type.....	7
What else may explain the decline?.....	7
Opting for Work Over College.....	7
Increased College Costs.....	9
Changing Cultural Narrative.....	9
Where do we go from here?.....	9
Appendix A. Data and analysis.....	11
Data Set.....	11
Analyses.....	13
References.....	19

Overview

The percentage of Iowa public high school graduates pursuing college—which includes any form of education beyond high school ranging from one-semester certificates to 4-year degrees—declined over the past seven years. While COVID-19 exacerbated this decline, it began several years before the pandemic. Nearly 70% of Iowa public high school seniors who graduated in 2012-13 enrolled in a 2-year or 4-year college in the United States within a year after completing high school. By the high school graduating class of 2018-19 that rate had dropped five percentage points to 64.3% (Figure 1). A corresponding decline occurred in the post-high school plans of Iowa high school graduates (which is measured at the time of high school graduation).

Figure 1. Percent of Iowa Public High School Graduates Who Intended to Enroll and Percent Who Enrolled in College Within One Year of High School Graduation
Graduating Classes of 2011-12 to 2019-20



According to statewide longitudinal data from other states, enrollment in post-high school education declined across the nation, not just in Iowa. Between 2015 and 2019 states saw declines to varying degrees, including Indiana (-6 percentage points), Tennessee (-2.5 percentage points), West Virginia (-0.5 percentage points), and Michigan (-3.4 percentage points). According to the National Student Clearinghouse Research Center (2019), Iowa's enrollment decline of -3.2 percentage points from 2017 to 2019 was the largest among neighboring states like Minnesota (-2.2 percentage points), Illinois (-2.4 percentage points), and Nebraska (+0.4 percentage points).

Iowa needs a highly skilled workforce to meet the needs of available jobs in the coming years, and the number of jobs that require postsecondary training or credentials continues to grow.

"...[A]s automation, globalization, and related phenomena have led to major structural changes in the American economy, economic opportunity has shifted toward more educated workers with higher skill levels. Whereas two out of three entry-level jobs in the industrial economy demanded a high school diploma or less, now two out of three jobs demand at least some education or training beyond high school."

-Georgetown Center for Education and the Workforce (Carnevale et al., 2018)

Governor Branstad, and then Lieutenant Governor Reynolds, recognized this need when establishing Future Ready Iowa with the goal of 70% of Iowa's workforce having education beyond high school. At the time, almost 70% of Iowa high school graduates were enrolling in higher education within one year of high school graduation. Given the recent decline in high school graduates enrolling in postsecondary education and the future needs of the Iowa workforce, we must increase the supply of college-educated workers in Iowa.

The Brief

This brief explores college enrollment in an attempt to understand what could explain the decline in recent years, and what types of interventions may help to reverse the trend. Data from multiple Iowa public high school graduating classes from 2011-12 (the first available linked cohort in Iowa's Statewide Longitudinal Data System, or SLDS) through 2018-19 were used, tracking whether or not they enrolled in education beyond high school. In all analyses, college enrollment includes any post-high school enrollment. This means programs ranging from certificate programs (e.g., nursing assistant/aide, welding), to associate degrees and bachelor's degrees. Some graphics present college-going rates for the 2019-20 and 2020-21 cohorts for the purpose of illustrating the impact of COVID-19; these cohorts are not included in the statistical analyses.

This brief focuses on Iowa public high school graduates within one year of graduation. We exclude students who did not complete high school, out-of-state students, and adult learners. The findings in this brief are based on both frequency data and marginal effects from a statistical model. Marginal effects show the differences in college-going rates between groups when controlling for other variables that may be associated with college-going. Statistical models included variables not discussed in this brief including academic aptitude, steps towards college, and a variety of school-level characteristics. Methodological details, including a full list of variables included in the models, are available in Appendix A.

Findings: What does not explain the decline?

A Drop in Graduates

The drop in enrollment is not due to a drop in the number of high school graduates. While the study is focused on college-going rates, the number of high school graduates (i.e., the supply of high school graduates) has not declined (Figure 2). While some states may see significant declines in high school graduate counts in the next five years due to birth rate declines during the Great Recession, the drop in high school graduates during that period in Iowa is expected to be small.

Figure 2. Iowa Public High School Graduates and Number Who Enrolled in College within One Year of High School Graduation
Graduating Classes 2011-12 to 2019-20



Source: Iowa Statewide Longitudinal Data System

An Increase in “Gap Year” or Delayed College Enrollment

Also, the drop in enrollment was not due to students taking a “gap year” or year off between high school and college. The percentage of Iowa high school graduates who enroll between one and two years after high school graduation is around 3% and has changed little over the past six years. National data has shown similar numbers (National Student Clearinghouse Research Center, 2021).

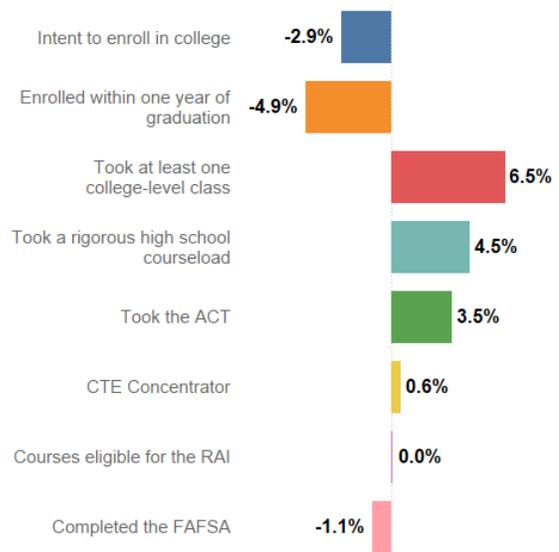
Preparation for College

Student preparedness for college also does not appear to be a factor in the decline of post-high school education. In fact, several metrics related to college preparedness have improved while college-going rates and student intent to attend college have decreased from 2011-12 to 2018-19 (Figure 3). The proportion of students taking the ACT increased three percentage points, while the share of those completing the Free Application for Federal Student Aid (FAFSA) dropped one point. The proportion of students completing the following have all increased:

- One or more college courses in high school
- CTE concentrator curriculum
- Rigorous high school course load

Meanwhile, the percentage of college preparatory classes taken (Regent Admission Index (RAI)-eligible coursework used for automatic admission to a Regent university) did not change.

Figure 3. Percentage Point Change in Iowa Public High School Student Metrics
Graduating Classes 2011-12 to 2018-19



Source: Iowa Statewide Longitudinal Data System

Findings: What helps explain the decline?

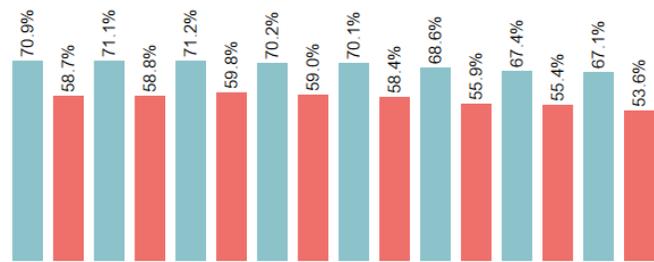
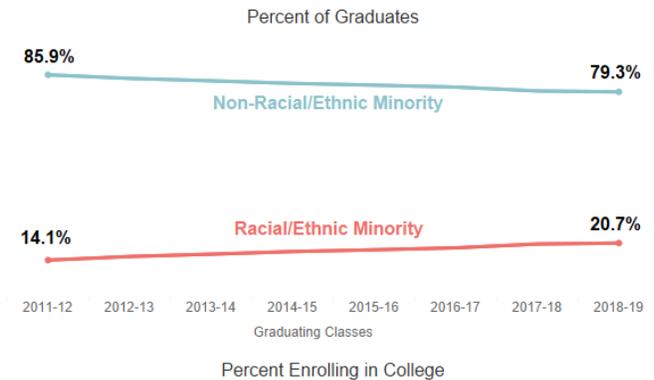
Shifts in the Population of Iowa High School Graduates

Statewide, the number of Iowa high school graduates who identified as racial/ethnic minorities and who qualified for free or reduced-price lunch (FRPL) increased between the classes of 2011-12 and 2018-19. The percentage of Iowa high school graduates identified as racial/ethnic minorities increased from 14.1% to 20.7% (Figure 4), while the number of graduates eligible for FRPL increased from 37.5% to 45.0% (Figure 5). The growing size of these populations, combined with their historically lower college-going rates, creates a larger pool of high school graduates from populations that are less likely to enroll in college despite the fact that the percentage point drop in enrollment for both groups is similar to other populations.

Our statistical analysis shows no significant differences in college enrollment by race/ethnicity after controlling for other variables. That is, the differences by race/ethnicity were explained by FRPL eligibility, college steps (ACT/SAT and FAFSA completion), and college readiness (intent and coursework); once those were held constant, no differences by race/ethnicity remained.

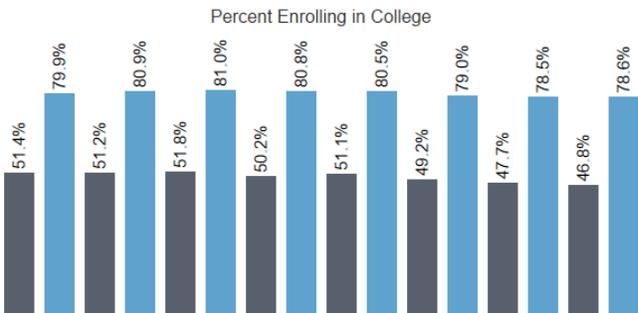
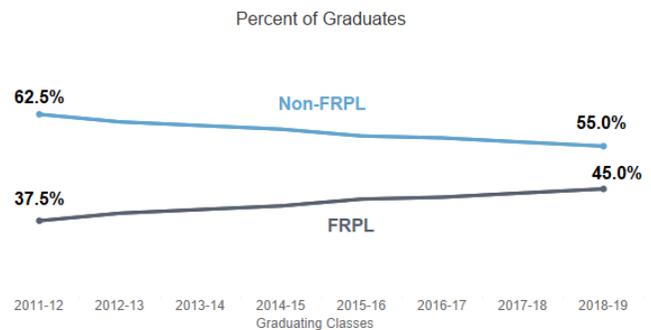
Similarly, the statistical analysis showed that much of the gap between students who do and do not receive FRPL is due to FRPL students' lower likelihood of both taking college steps and being college-ready. However, unlike students from racial/ethnic minority groups, students eligible for FRPL remained less likely to enroll in college than students who were not eligible for FRPL even when other factors, including academic preparation, were held constant. Determining the supports that students eligible for FRPL, as a group, would need to help them take the necessary steps toward college enrollment merits further investigation.

Figure 4. Iowa Public High School Graduates by Racial/Ethnic Minority



Source: Iowa Statewide Longitudinal Data System

Figure 5. Iowa Public High School Graduates by Free or Reduced-Price Lunch Eligibility



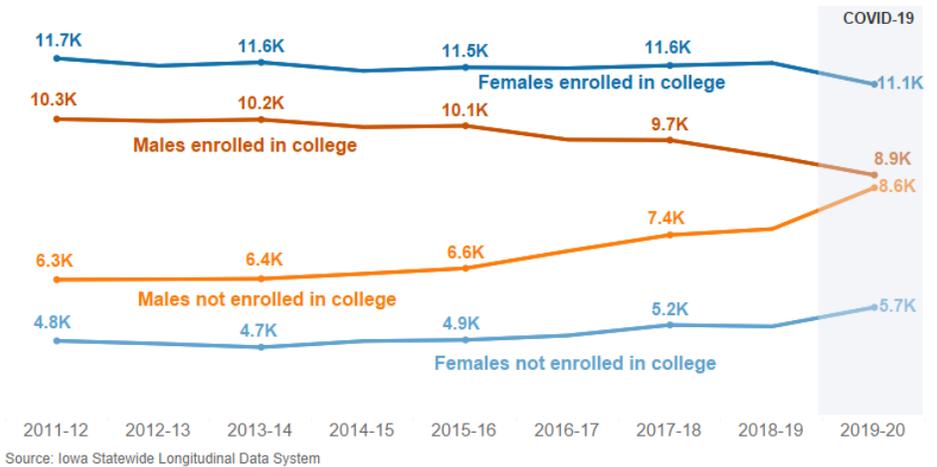
Source: Iowa Statewide Longitudinal Data System

Although the growth in the size of the FRPL and racial/ethnic minority populations is related to the declining college enrollment rate, racial/ethnic minorities account for just 20.7% of the 2018-19 graduating class. Nearly half (45.0%) of Iowa's high school graduates received FRPL. Since the majority of Iowa's high school graduates, and 63.6% of FRPL graduates, are white, any changes in enrollment rate among white students results in a larger impact on overall college-going rates given the size of the population.

Fewer Men Enrolling in College

Women are more likely to attend college than men and have been for some time, but that gap has been widening in recent years. While the number of female high school graduates who attend college has been steady, the number of male graduates who enroll has declined (Figure 6).

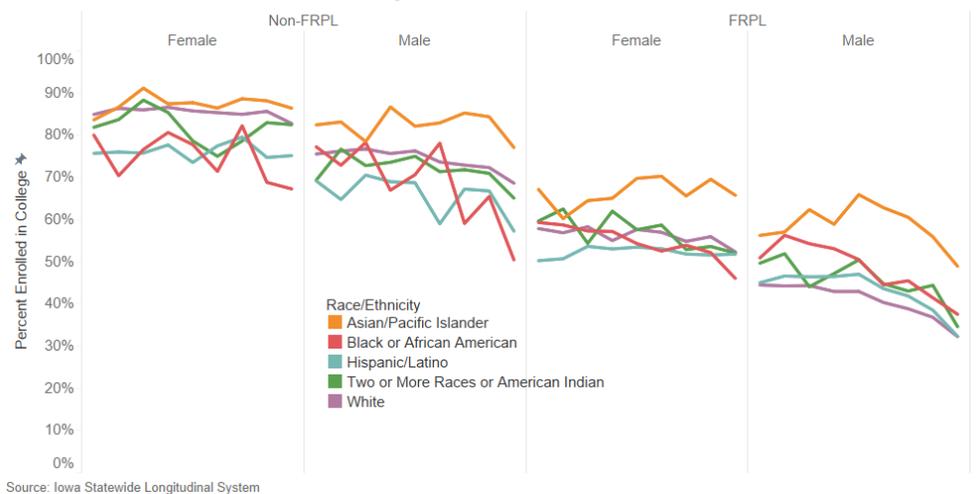
Figure 6. Iowa Public High School Graduates Who Enroll in College by Gender
Graduating Classes of 2011-12 to 2019-20



Our statistical analysis shows that beginning with the class of 2016-17, males became significantly less likely to attend college than females. These differences persisted even after controlling for academic preparation. The analysis found that even among students with similar academic preparation, males are less likely than females to indicate interest in college, complete a FAFSA, or take the ACT to prepare them for college admission.

At the intersection of gender, race/ethnicity and FRPL status we see some unexpected patterns emerge in college-going rates. For example, Asian females who qualify for FRPL attend college at higher rates than many non-FRPL males, Black males show the greatest drop of any group in college-going rates, and White males who qualify for FRPL show the lowest overall college-going rate (Figure 7).

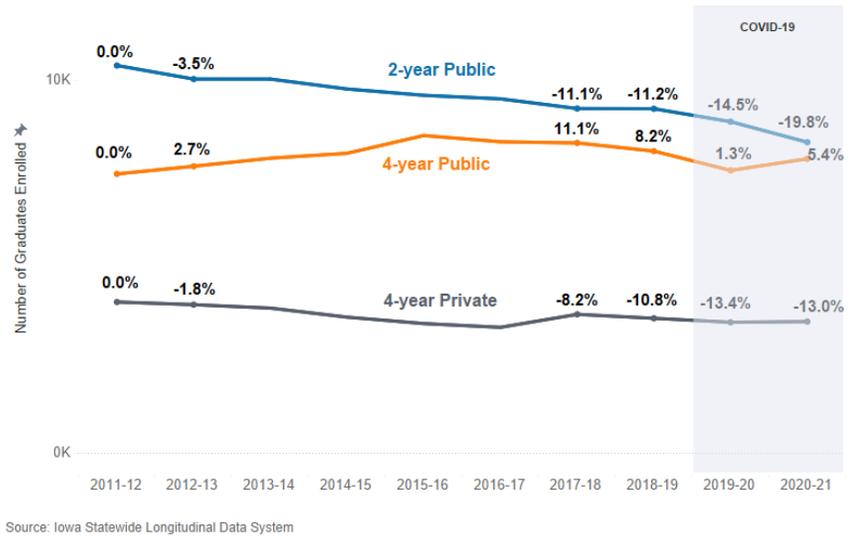
Figure 7. College Enrollment within One Year of Graduating from an Iowa High School
by Race/Ethnicity, Gender, and Free or Reduced-Price Lunch Eligibility
Graduating Classes of 2011-12 to 2019-20



Differences by Institutional Type

The decline in college-going is not equal at all colleges and even varies within institutional type. Figure 8 shows college enrollment trends for the fall term immediately following high school graduation for the graduating classes of 2011-12 through 2020-21. Community colleges, which enroll the largest number of high school graduates and are the least expensive college option, saw an 11.2% drop pre-COVID since 2011-12. Meanwhile, 4-year public colleges have seen a decline since 2015-16 but are still above 2011-12 numbers, and 4-year private colleges have seen a decline similar to that of the community colleges.

Figure 8. Iowa High School Graduates Enrolled in College during First Fall after Graduation
Percent Change Relative to 2011-12 by Institutional Type



What else may explain the decline?

Opting for Work Over College

High school graduates choosing to enter the workforce instead of enrolling in further education might explain the decrease in the college-going rate, but we lack data on Iowa graduates' non-enrollment activities after high school. As a proxy, we looked at the self-reported post-high school plans of high school graduates. These data support the idea that students increasingly intend to enter the workforce

Table 1. Intended Post-Graduation Plans of Iowa Public High School Graduates

	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Community College	38.4%	37.2%	37.7%	37.2%	36.7%	36.3%	35.5%	34.0%	33.2%	30.4%
4-year Public College	25.5%	26.4%	26.9%	27.5%	28.8%	28.0%	27.5%	27.4%	27.5%	26.8%
4-year Private College	13.3%	12.8%	12.7%	12.4%	11.0%	11.4%	11.5%	11.6%	10.8%	10.9%
Employment	9.1%	9.0%	10.0%	10.1%	10.5%	10.9%	11.6%	13.1%	12.9%	15.1%
Unknown	7.0%	6.8%	6.4%	6.6%	6.9%	6.8%	7.5%	6.9%	9.2%	9.7%
Active Military	3.0%	3.3%	2.9%	3.0%	2.6%	2.8%	2.7%	2.8%	2.6%	2.4%
Other Postsecondary	2.6%	2.3%	2.4%	2.2%	2.4%	2.7%	2.5%	3.0%	3.1%	2.3%
2-year Private College	0.9%	0.9%	0.8%	0.6%	0.5%	0.6%	0.5%	0.6%	0.5%	0.7%
Non Applicable		1.2%	0.2%	0.3%	0.4%	0.4%	0.5%	0.4%		0.7%
Homemaker	0.1%	0.2%	0.1%	0.1%	0.2%	0.2%	0.1%	0.1%	0.1%	
Apprenticeship										1.0%
Internship										0.1%
Grand Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

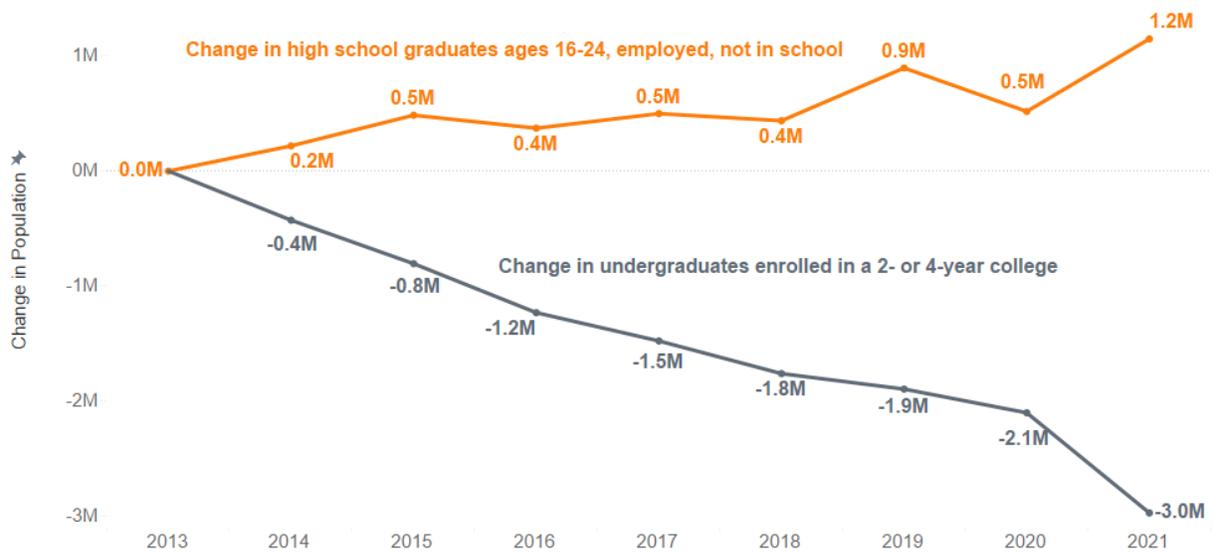
Source: Iowa Statewide Longitudinal Data System

(Table 1): from 9.1% of 2011-12 graduates to 13.1% in 2018-19. The recent inclusion of registered apprenticeships in the survey cannot yield any information about trends, but 1.0% of high school

graduates in 2020-21 indicated their intention to pursue that post-high school option. Apprenticeships are offered in a variety of settings, including community colleges, so whether this accounts for a small portion of the decline in community college enrollment intentions is unclear.

Given the unpredictable nature of the plans of graduating high school seniors, their post-high school plans do not provide enough information to conclude that students are ultimately choosing employment over college. Lacking statewide employment data on recent Iowa high school graduates, we used national data from the Bureau of Labor Statistics. More high school graduates have entered the workforce in recent years, but not enough to account for the drop in college enrollment (Figure 9). From 2013 to 2021, 1.2 million additional high school graduates entered the workforce. During that same time, 3.0 million fewer students enrolled in 2- or 4-year colleges.

Figure 9. National Trend: High School Graduates Entering the Workforce and Total College Enrollment, 2013-2021



Sources: Integrated Postsecondary Education Data System (IPEDS) Undergraduate enrollment at Title IV colleges offering a 2 or 4 year degree & Bureau of Labor Statistics, Table 2.

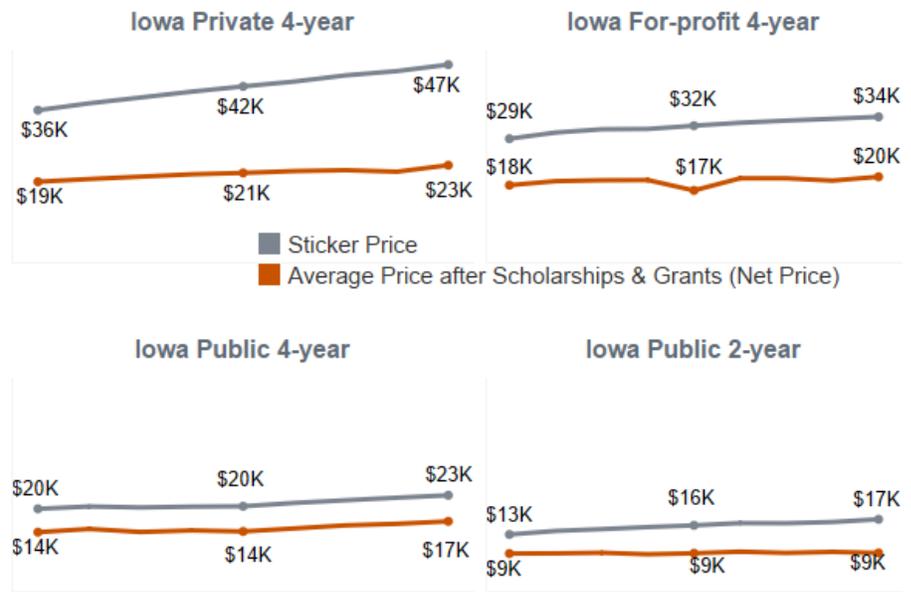
Increased College Costs

A significant national conversation regarding the price and value of college has taken place in recent years. Students considering college are concerned that they will be saddled with enormous debt upon graduation or that college is not an affordable option. In Iowa, the sticker price—the total, advertised price of tuition, books, fees, and room and board—did increase between 2011-12 and 2018-19 (Figure 10). However, the net price, which is the average price students pay after subtracting scholarships and grants, has increased relatively little over that same period, ranging from less than \$150 at community colleges to about \$4,000 at private 4-year colleges.

Although the net price of Iowa's colleges has changed relatively little, the overwhelming perception that a college degree costs far more than in years past and fear of crippling debt has likely influenced some students' decisions not to enroll in college.

Figure 10. Annual Cost of College in Iowa: Sticker Price vs. Average Price Paid

Fall 2012 - Fall 2019



Source: National Center for Education Statistics (IPEDS).

Amounts shown have not been adjusted for inflation

Changing Cultural Narrative

As the national discourse regarding the cost of college has intensified, so too has the discussion around the value of a college education. A narrative that depicts college as a poor investment, countering years of data that clearly point to the financial benefits of a college degree, has pervaded mainstream culture. This message pushes back against the “college for all” idea, positioning a college education as unnecessary. We cannot investigate this idea empirically with the data available but speculate that doubts about the financial value of a college degree and/or negative messages about higher education may play a role in Iowa's college enrollment decline.

Where do we go from here?

Ensuring that Iowa's students are prepared to meet the demands of Iowa's labor market in both the near and distant future is key to the sustainability of Iowa's industries and growing the state's economy. Since many of the projected job openings will require some education beyond high school, it is essential to reverse the college enrollment decline of the past decade. To do that, we must understand what is driving this trend.

Although more study is needed, some approaches could be implemented immediately:

- Encourage students to take more rigorous and college-ready coursework in high school
- Create ways to narrow the price gap for lower income students
- Promote the benefits of higher education using available data (e.g., salaries, employment, lifetime earnings, health outcomes, community engagement)
- Establish policies to increase community college enrollment
- Proactively counter false narratives on costs and debt
- Invest in resources to support higher education attendance among the increasingly diverse populations of students in Iowa

This brief was a first foray into trying to understand the college enrollment decline among recent public high school graduates in Iowa. Underlying population changes explain some of the decline, as populations with lower college-going rates have grown over that period. However, those changes do not account for the size of the change in the last decade, and students are just as well prepared, if not more, for postsecondary education than they were in years past. More study is required to understand what might be causing students who might have attended college a decade ago to make a different choice today. Are students opting out of college in favor of employment or are they choosing other paths? What role does the perception of college costs and future debt play in influencing graduates' choices?

In addition to understanding individual students' motivations and decision-making processes, it would also be instructive to look at schools and districts that are overperforming with respect to college enrollment. On average, school districts saw a 7.1 percentage point drop in the college going rates of their graduates between the classes of 2011-12 and 2018-19 and a 4.9 percentage point drop between the classes of 2014-15 and 2018-19. However, controlling for changes in high school demographics over time is key in understanding these changes. Using regression models to predict high school college-going rates using statewide data, we identified a number of school districts that, holding all other factors constant, outperformed other districts in postsecondary enrollment rates. In the next phase of this study, we will examine the culture and practices at these schools in an attempt to glean best practices for encouraging students to consider postsecondary enrollment.

Appendix A. Data and analysis

Data Set

The Iowa Statewide Longitudinal Data System (SLDS) is a collaborative partnership between multiple agencies including the Iowa Department of Education, Iowa Area Education Agencies, Iowa Board of Regents, Iowa College Student Aid Commission, and Iowa Workforce Development. This partnership facilitates data sharing to support robust analyses that can lead to greater understanding of and improvement in educational outcomes. This brief relies on data from Iowa’s SLDS.

The data used in the analyses in this brief include information on student demographic characteristics, high school academic performance and courses, steps towards college readiness, postsecondary plans, and postsecondary enrollment. Graduating cohorts of Iowa high school students from the class of 2011-12 through the class of 2020-21 are included in the data set for a total sample size of 333,910 students.

For the regression analyses, we limit the data set to the graduating classes of 2012-13 to 2018-19. Those years were chosen for three reasons. First, the class of 2011-12 does not have several data elements used in our analyses. Second, the classes of 2019-20 and 2020-21 made their postsecondary decisions during the COVID-19 pandemic. For a number of reasons, the pandemic hastened the decline in college enrollment and introduced additional factors into students’ college decision-making processes. Examining students’ college-going decisions during the pandemic is worthwhile but outside the scope of this project. Third, beginning with the class of 2019-20, Iowa changed its 11th grade standardized tests and the standards the state assessed within these tests. As a control of academic aptitude, we needed consistency in some form of academic test score. As such, students without a standardized 11th grade reading or standardized 11th grade math score were removed from the analyses.

In addition to limiting the graduating student cohorts, we limited our analysis to only on-time graduates. We excluded students who did not graduate on time from high school in our analyses because of fundamental differences in the average student profile. Additionally, when running separate regression analyses, the two groups had enough differences in coefficients and standard errors from one another that we worried that they would bias our estimates for on-time graduates. Additional analyses of students who take longer than four years to graduate from high school is necessary but outside the scope of this brief. In addition, because of the difficulty of teasing out school-level effects from the analyses, we removed any student that did not actually attend school in a school building. The final sample size is 211,838 students.

Table A1. Variables used in the statistical models

<i>Dependent variable</i>	
Enrolled within one year	Indicates whether the student enrolled in postsecondary education within one year of high school graduation. Includes all colleges that report enrollment to the National Student Clearinghouse.
<i>Independent variables</i>	
Gender	Student's gender at the time of high school graduation.

Race/Ethnicity	Student's race/ethnicity at the time of high school graduation. Recoded to macro-level categories of White, African American/Black, Hispanic/Latino, Asian/Pacific Islander, Multi-Race/Native American/Alaska Native in models. Recoded to Racial/Ethnic Minority and Non-Racial/Ethnic Minority in descriptive analyses.
Free or reduced-price lunch (FRPL) student	Student was eligible for free or reduced-price lunch within the four years up to and including their year of high school graduation.
Academic year	Academic year in which student graduated.
Control Variables	
Academic aptitude	
STD reading 11 score	11th grade Iowa Assessments or Iowa Test of Educational Development (ITED) (depending on the year taken) reading national scale score, scaled to the spring equivalent score for comparability across testing periods (fall, mid-year and spring). Values are standardized.
STD math 11 score	11th grade Iowa Assessments or Iowa Test of Educational Development (ITED) (depending on the year taken) mathematics national scale score, scaled to the spring equivalent score for comparability across testing periods (fall, mid-year and spring). Values are standardized.
College steps	
ACT/SAT participant	Indicates whether the student participated in either the ACT or SAT within the four years up to and including their year of high school graduation.
FAFSA completer	Indicates whether the student completed the Free Application for Federal Student Aid (FAFSA) for enrollment in the academic year following their year of high school graduation.
High school college preparation	
Postsecondary intent	Student's self-reported post-graduation plan at the time of high school graduation. Students who reported plans to enroll in community college or a public or private 4-year college were coded as intending to enroll. All other options were coded as no intent to enroll.
College level coursework in high school	The number of Carnegie units of Advanced Placement (AP), concurrent enrollment, postsecondary enrollment option (PSEO) or International Baccalaureate (IB) classes taken by the student within the four years up to and including their year of high school graduation. Aggregated into four categories that are roughly quartiles: No Carnegie units, 0.25-1.50 Carnegie units, 1.75-3.50 Carnegie units, and 3.75 or more Carnegie units.
Took Algebra II	Indicates whether the student took Algebra II within the four years up to and including their year of high school graduation.
Rigorous high school coursework	Indicates whether the student took a rigorous course load within the four years up to and including their year of high school graduation. A rigorous course load is defined as four years of English, three years of higher-level mathematics, three years of science, three years of social studies, and one year of world languages.
CTE concentrator	Student took 1.5 or more Carnegie units (three semesters) in one of the following subject areas: (1) agriculture, food and natural resources; (2) arts, communications and information systems; (3) applied sciences, technology, engineering and manufacturing, including transportation, distribution, logistics, architecture and construction; (4) health sciences; (5) human services, including law, public safety, corrections, security, government, public administration and education and training; or, (6) business, finance, marketing and management.
School-level characteristics	
High school distance to 2-year	Shortest "as the crow flies" distance between the closest 2-year public or private, not-for-profit postsecondary institution campus and the student's high school.
High school distance to 4-year	Shortest "as the crow flies" distance between the closest 4-year college or university and the student's high school.

High school percent FRPL	The percentage of students in the student's high school who were eligible for free or reduced-price lunch during the student's graduation year.
High school average teacher experience	Average total experience teaching as measured in number of years among the full-time teachers in the student's high school building.
High school percent of students in college coursework	The percentage of high school graduates in the student's high school during the specified academic year who took at least one college-level course while in high school.
High school percent non-White	The percentage of students in the student's high school who were identified as Hispanic or a race other than White during the student's graduation year.
Urbanicity of high school	NCES school-level locale codes for the student's high school, aggregated to three categories: urban, suburban, or rural.

Analyses

For our analyses, our focus areas are on students' gender, FRPL status, and race/ethnicity. In order to understand changes across time, we interact these three constructs on the seven cohorts of graduating seniors. Specifically, we use a linear probability model for our analyses. Linear probability models and logistic regression are both analytical options for a binary outcome variable. In this analysis, the dependent variable's outcome is within the threshold of .20 and .80, meaning the log odds are still a linear function of the probability of a student enrolling or not enrolling in college (Long, 1997). Since either option was a reasonable choice, we chose the linear probability model as our methodological approach as its coefficients are easier to interpret (the marginal change in the probability of going to college as opposed to the log odds of going to college). Meaning, if the coefficient for female in our analysis is a .05, a female student has a five percentage point greater likelihood of going to college compared to a male, holding all else constant in the model. Because students are nested within schools, each of which have their own unique culture and environment, we cluster our standard errors by high school (Abadie et al., 2017).

We use a series of regressions, each with first-year college enrollment as the dependent variable and interactions between each of the three independent variables by academic year (gender x academic year, race/ethnicity x academic year, and FRPL status x academic year). Our models are listed below; the variables used in each category (e.g., academic aptitude) are in Table A1, above.

Table A2. Regression model specifications

Model names	Model specification
Null model	First-Year College Attendance = Academic Year + Gender + Race/Ethnicity + FRPL + Gender x Academic Year + Race/Ethnicity x Academic Year + FRPL x Academic Year
Academic Mediation	First-Year College Attendance = Null model + Academic Aptitude
College Steps Mediation	First-Year College Attendance = Null model + College Steps
College Readiness Mediation	First-Year College Attendance = Null model + HS College Preparation
School Characteristics Mediation	First-Year College Attendance = Null model + School Characteristics
Full Model	First-Year College Attendance = Null model + Academic Aptitude + College Steps + HS College Preparation + School Characteristics

These regression models allow us to elucidate a better understanding of where students' gender, race/ethnicity and FRPL status may face mediation in their association with going to college within the first year.

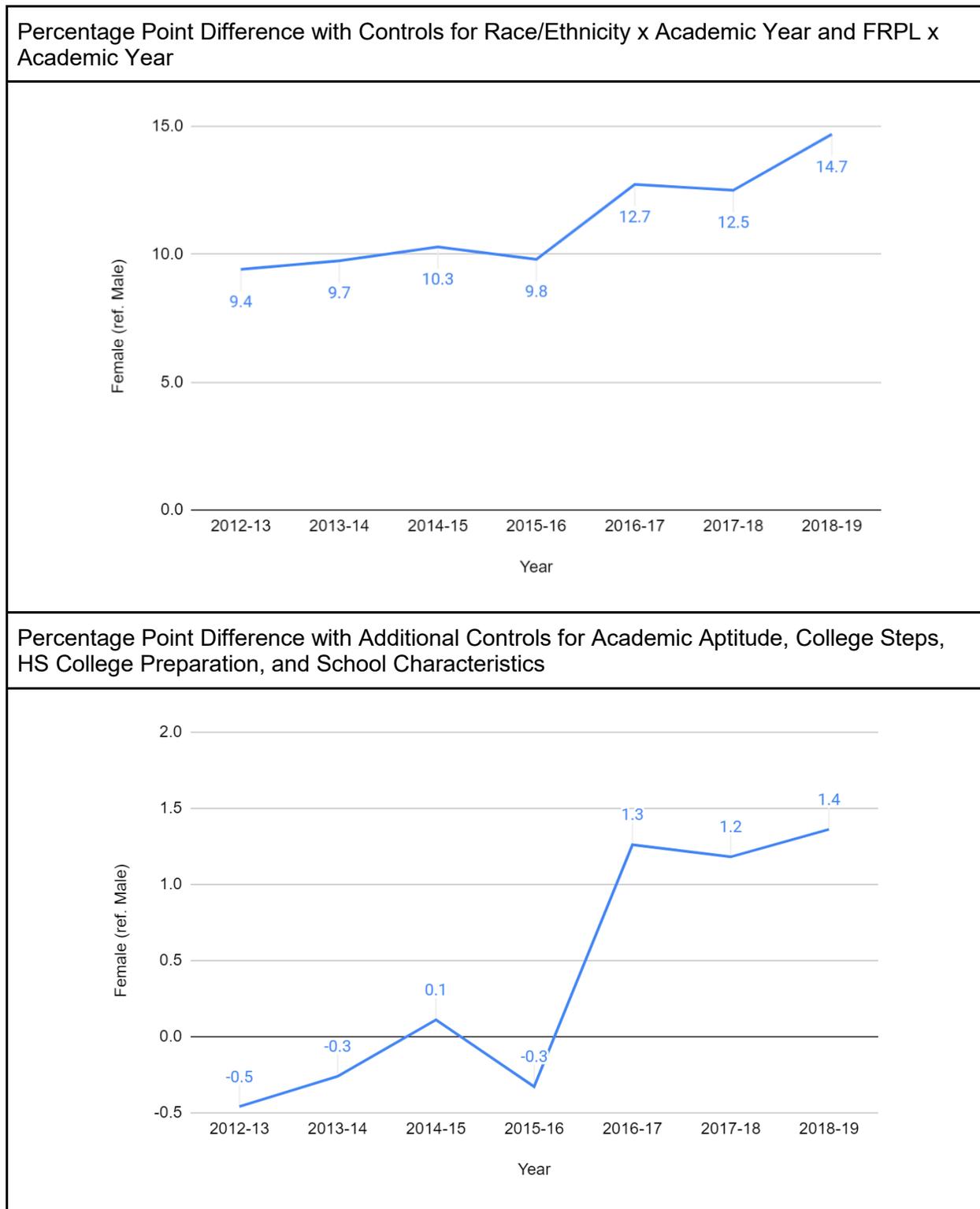
After completing these analyses, we use Stata's average marginal effects and marginsplot functions to produce a series of graphs on how gender, race/ethnicity, and FRPL change across time. We produce the graphs from our null model and full model equations. This allows a better understanding of how gender, race/ethnicity, and FRPL change across time when holding other student- and school-level factors constant.

Table A3. Descriptive Statistics

Variables	All Students Mean (SD)	Did not enroll within one year Mean (SD)	Enrolled within one year Mean (SD)
Dependent			
Enrolled within one year			
No	0.293	1.000	0.000
Yes	0.707	0.000	1.000
Independent			
Gender			
Male	0.501	0.594	0.463
Female	0.499	0.046	0.537
Race/ethnicity			
White	0.832	0.778	0.853
Black or African American	0.040	0.054	0.034
Hispanic/Latino	0.076	0.112	0.061
Asian/Pacific Islander	0.025	0.020	0.027
Two or More Races or American Indian	0.028	0.034	0.025
Free or reduced-price lunch			
No	0.604	0.373	0.699
Yes	0.397	0.627	0.301
Academic year			
2012-13	0.138	0.126	0.143
2013-14	0.141	0.129	0.145
2014-15	0.141	0.136	0.142
2015-16	0.143	0.139	0.145
2016-17	0.144	0.149	0.142
2017-18	0.148	0.160	0.143
2018-19	0.146	0.161	0.140
High school college preparation			
Postsecondary intent	0.821	0.496	0.956
College level coursework in high school			
None	0.220	0.430	0.133
0.25 to 1.5 Carnegie units	0.252	0.298	0.233
1.75 to 2.5 Carnegie units	0.271	0.174	0.311
2.75+ Carnegie units	0.257	0.098	0.323
Took Algebra II	0.694	0.493	0.777
Rigorous high school coursework	0.642	0.412	0.737
CTE concentrator	0.622	0.652	0.610
School-level controls			
High school distance to CC	11.5 (10.2)	11.5 (10.5)	11.5 (10.0)
High school distance to 4-year	15.1 (15.0)	15.2 (14.8)	15.1 (15.0)

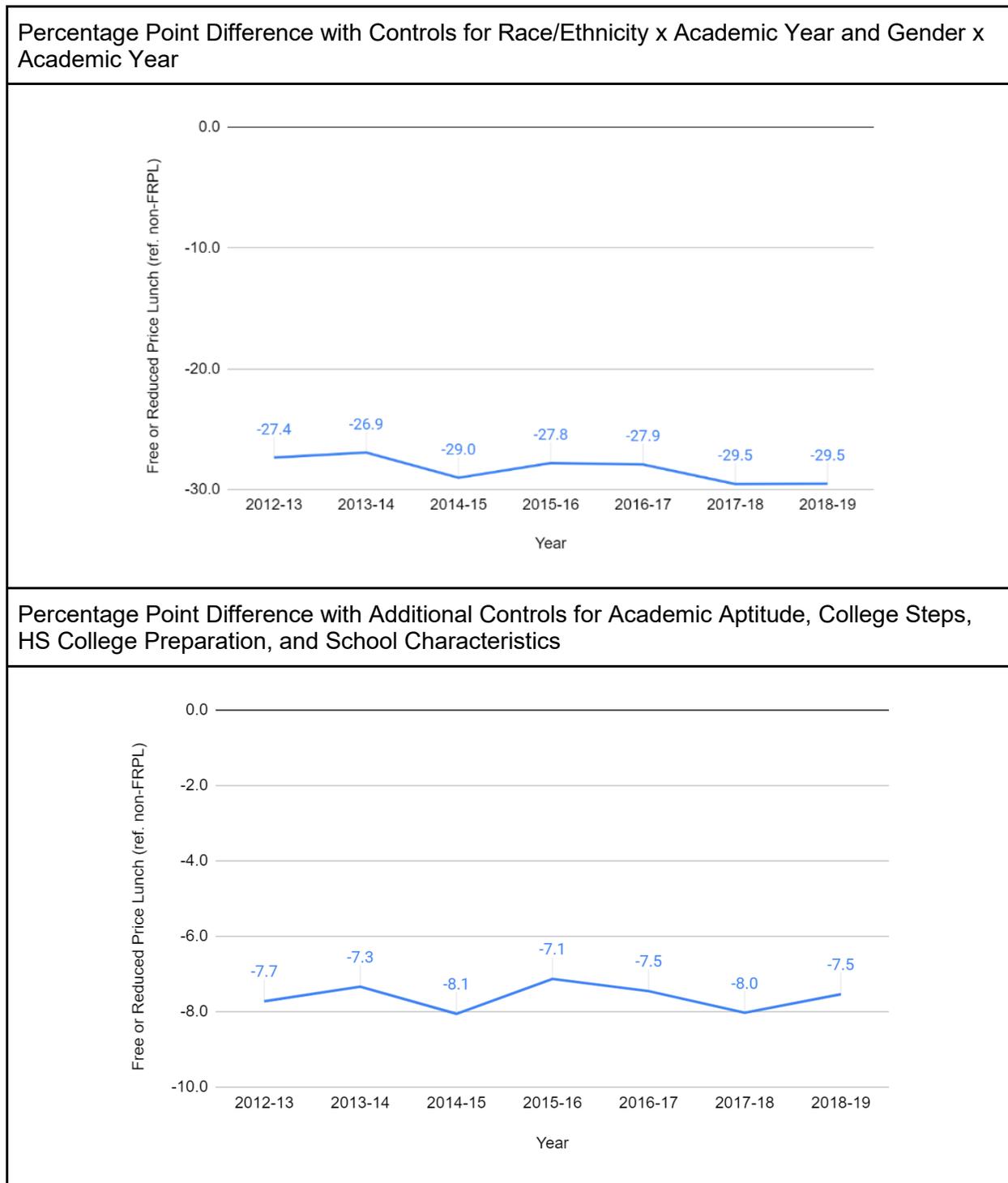
Variables	All Students Mean (SD)	Did not enroll within one year Mean (SD)	Enrolled within one year Mean (SD)
High school percent FRPL	35.4 (16.8)	39.7 (17.9)	33.5 (16.0)
High school average teacher experience	14.0 (2.8)	13.8 (2.8)	14.1 (2.8)
High school percent of students in college coursework	75.2 (15.5)	72.8 (15.9)	76.2 (13.8)
High school percent non-White	19.3 (16.6)	21.6 (18.4)	18.3 (15.8)
Urbanicity of high school			
Urban	0.273	0.307	0.259
Suburban	0.100	0.074	0.111
Rural	0.627	0.619	0.630
Total n	211,838	62,093	149,745

Figure A1. Female Students' Likelihood of Going to College Relative to Male Students: Graduating Classes of 2012-13 to 2018-19



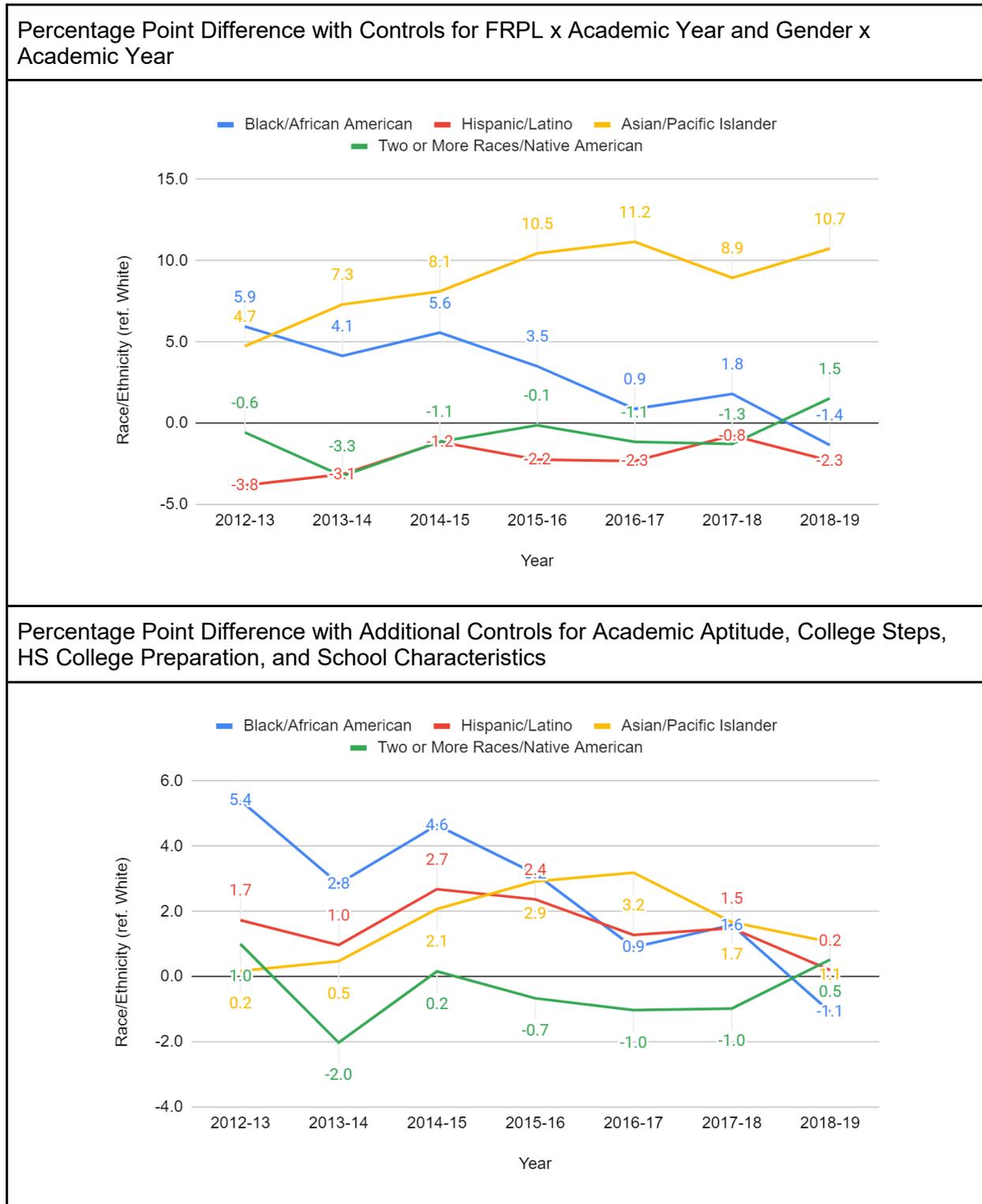
Note. n=211,838. Results reflective of all Iowa on-time graduates. Figures are computed as average marginal effects after the application of controls in a linear probability model. Results reflect female students' likelihood relative to students that are indicated as male.

Figure A2. Free or Reduced-Price Lunch-Eligible Students' Likelihood of Going to College Relative to Non-Free or Reduced-Price Lunch-Eligible Students: Graduating Classes of 2012-13 to 2018-19



Note. n=211,838. Results reflective of all Iowa on-time graduates. Figures are computed as average marginal effects after the application of controls in a linear probability model. Results reflect FRPL students' likelihood relative to students that are not eligible for FRPL.

Figure A3. Race/Ethnicity and the Likelihood of Going to College Relative to White Students: Graduating Classes of 2012-13 to 2018-19



Note. n=211,838. Results reflective of all Iowa on-time graduates. Figures are computed as average marginal effects after the application of controls in a linear probability model. Results reflect racial/ethnic groups' likelihood relative to students indicating White race/ethnicity.

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