



## College Dreams Dissolved

### *An Examination of Factors Tied to “Summer Melt” in Iowa*

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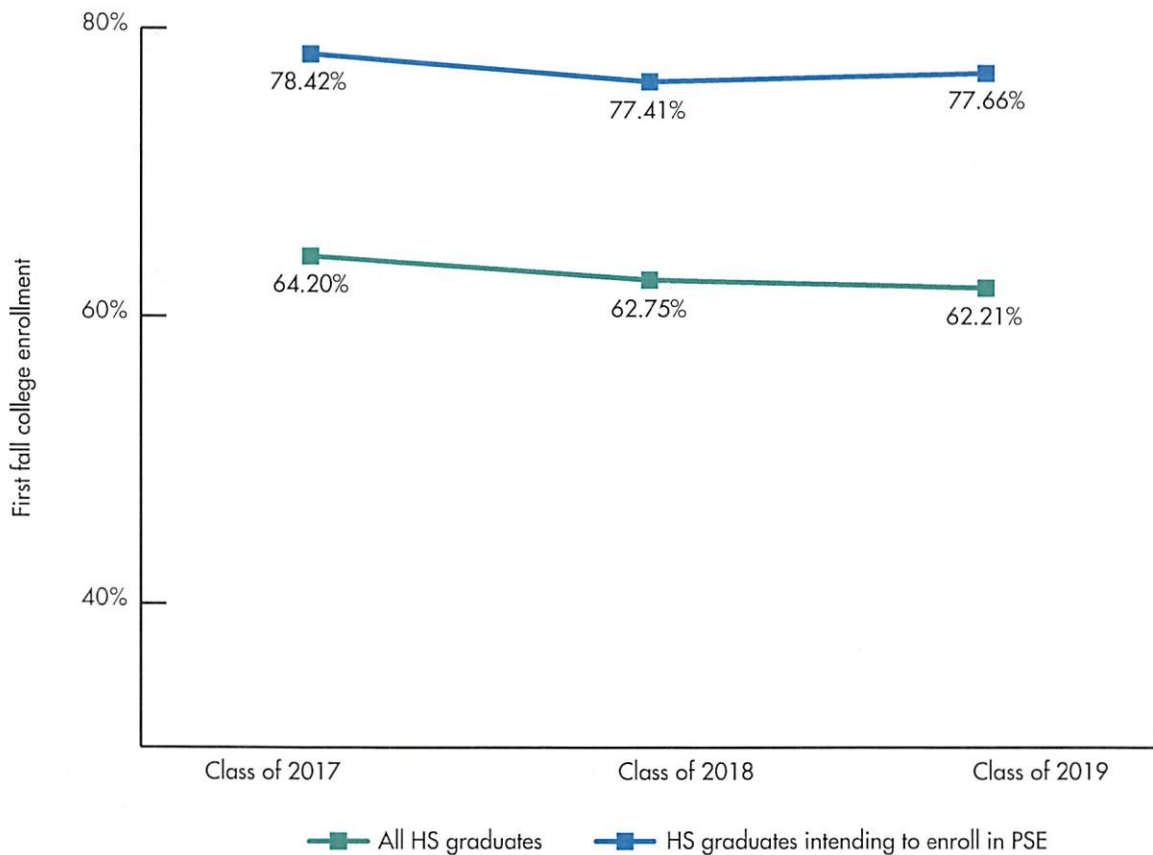
#### **EXECUTIVE SUMMARY**

While the need for workers who have at least an associate’s degree is rising in Iowa, the proportion of new high school graduates who enroll in college is falling. One barrier to college enrollment is “summer melt,” a term that refers to high school students who plan to enroll in college but fail to do so immediately after high school. This research brief examines both the number of Iowa students who “melt” and the school and student characteristics associated with “summer melt.” We find that roughly 1 in 5 high school seniors in Iowa who indicate that they plan to enroll in college do not in fact enroll in the fall after high school. We also find that the characteristics among college-intending students most strongly correlated with actual college enrollment are taking the ACT or SAT and filing the Free Application for Federal Student Aid, or FAFSA. We therefore recommend that Iowa focus on supporting college-intending students through these two crucial steps by surveying high school students’ college intentions earlier than is currently done, as well as considering mandatory FAFSA for all high school students. Another possible policy to help raise college enrollment levels would be mandatory ACT/SAT for all high school students, although the number of colleges that require these tests is declining.

## COLLEGE-GOING IN IOWA

The college-going rate in Iowa has declined in recent years (see Figure 1). In 2017, 64 percent of public high school graduates enrolled in postsecondary education (PSE) the following fall. In 2018 and 2019, this figure was 63 percent and 62 percent, respectively. For graduates who intended to enroll in postsecondary education, this metric has held steady at approximately 78 percent, which means that about 1 in 5 college-intending high school graduates do not immediately enroll. The phenomenon of graduates intending to enroll in postsecondary education after high school but not enrolling the following fall is commonly known as “summer melt.”

Figure 1. College-Going Rates: Class of 2017 Through Class of 2019



Postsecondary enrollment is countercyclical to the economy: When the economy improves, enrollment at colleges and universities tends to decline as the opportunity cost of postsecondary education (e.g., lost wages, lost job experience) increases. In other words, when workforce opportunities are plentiful, individuals are less likely to invest in college because the cost includes not only tuition and fees but also foregone wages and real-world job experience during the college years. From 2017 through 2019, the economy provided many job opportunities for new high school graduates, partially explaining the downward trajectory in college-going rates for all public high school graduates.

However, higher education is worth the long-term investment regardless of the current economy (Iowa College Aid, 2019). Individuals who obtain a postsecondary degree out-earn individuals with only a high school degree over their lifetimes. Those with postsecondary degrees are also more protected against future recessions because they are less likely to be unemployed during economic downturns. Iowa’s Future Ready Iowa goal—that 70 percent of the workforce will have some training or education

beyond high school by 2025—recognizes that future generations will benefit from postsecondary education because most new jobs will require at least an associate’s degree (Georgetown University Center on Education and the Workforce, 2015).

Given increased earnings over time, decreased unemployment, and better job prospects, we would hope to see an increase in the percentage of high school graduates enrolling in postsecondary education, not the decline Iowa is experiencing. Therefore, this research brief examines the extent of summer melt in Iowa. Specifically, we examine the following research questions:

1. How many Iowa public high school graduates who intend to continue on to postsecondary education do not enroll the following fall?
2. What student and school characteristics are associated with Iowa public high school graduates who intend to enroll in postsecondary education but do not?

### PRIOR RESEARCH ON SUMMER MELT

Summer melt affects all types of high school students, but low-income students particularly. Castleman and Page (2014a) estimate summer melt among low-income students to be between 8 percent and 40 percent. Researchers hypothesize that summer melt occurs because students lack support from both their high school counselors and their destination postsecondary institutions (Castleman & Page, 2014b).

Financial aid barriers can also contribute to summer melt. In a sample of students from the Houston Independent School District, Holzman and Hanson (2020) found that about 25 percent of college-intending students did not immediately enroll in college in the fall, and selection for verification of their Free Application for Federal Student Aid (FAFSA) increased the likelihood of summer melt for these students by 6 percentage points.

While researchers have examined summer melt nationally and for some individual states and schools, there has been no empirical analysis of summer melt in Iowa. Therefore, our research addresses this gap in our knowledge of the relationship between student and school characteristics and summer melt in Iowa specifically.

### DATA

For this analysis, we use data from Iowa’s State Longitudinal Data System (SLDS). This data system compiles matched data from several state agencies in Iowa: the Iowa Department of Education (IDOE), the Board of Regents (BOR), and the Iowa College Student Aid Commission (Iowa College Aid). We start with high school graduates from the class of 2017 through the class of 2019 from IDOE. This dataset includes information on student demographics, academic assessments and standardized test participation, and graduate intentions. We match that data (using surrogate IDs included in the SLDS) to FAFSA data from Iowa College Aid. Then we match these student records to college enrollment records provided by IDOE, the BOR, and the National Student Clearinghouse. The advantage of using the SLDS is that these data sources have been processed, cleaned, and matched using the same algorithm, and a unique ID has been attached to each file that identifies a student without using personally identifiable information. This is the same data source used to populate state reports, such as Postsecondary Readiness Reports.

Of particular interest for this analysis is identifying public high school seniors who are college-intending. At the end of their senior year, students are required to complete an exit survey, and counselors report those results to IDOE. While schools across the state distribute these surveys at different points in the last few months of high school, in general, this information is collected at the end of the senior year. The survey asks seniors about their post-high school plans. Students can submit a variety of answers, including pursuing postsecondary education, joining the workforce full-time, and enlisting in the military. We use this question to identify students who are college-intending.

**Research Question: How many Iowa public high school graduates who intend to continue on to postsecondary education do not enroll in the following fall?**

Table 1 shows the number of students in each graduating class, the number and percentage who intended to enroll in postsecondary education, and the number and percentage who intended to enroll but did not. Overall, about 78 percent (78,508) of Iowa public high school graduates in the past three graduating classes intended to enroll in postsecondary education. However, about 22 percent (17,405) of those college-intending students did not enroll in postsecondary education the following fall. In other words, about 1 in 5 graduates who intended to enroll in a college or university melted.

Table 1. Number and Percentage of College-Intending High School Graduates Who Did Not Immediately Enroll in PSE: Class of 2017 through Class of 2019

Class	N	Intended to enroll in PSE		Intended to enroll in PSE but did not	
		N	%	N	%
2017	33,270	26,275	78.98	5,670	21.58
2018	33,974	26,350	77.56	5,952	22.59
2019	33,750	25,883	76.69	5,783	22.34
Total	100,994	78,508	77.74	17,405	22.17

**Research Question: What student and school characteristics are associated with Iowa public high school graduates who intend to enroll in postsecondary education but do not?**

Table 2 provides student and school characteristics of graduates intending to enroll in postsecondary education and the subgroup of graduates who intended to enroll but did not. About 2 in 3 graduates who intended to enroll in postsecondary education filed the FAFSA and took the ACT/SAT. The FAFSA is a critical step in the college-going process because it determines eligibility for federal student aid, state financial aid (such as the Iowa Tuition Grant and the Future Ready Iowa Last-Dollar Scholarship), and many private and institutional sources of aid. Taking the ACT/SAT, the standardized tests for admission to many four-year colleges, allows students to consider a wide range of options for postsecondary education. Even though the percentage of graduates filing the FAFSA and taking the ACT/SAT was high, we would expect the percentage to be even higher among graduates who intended to enroll in postsecondary education. Of those who intended to enroll in college, 54 percent were female, 38 percent qualified for free or reduced priced lunch (FRPL) at some point during high school, and 19 percent were underrepresented minorities (URM). On average, graduates who intended to enroll in college came from schools where 36 percent of students overall qualified for FRPL and 21 percent were URM.

Of the graduates who intended to enroll but did not, 46 percent did not file the FAFSA or take the ACT/SAT, suggesting a correlation between not completing these important college-going steps and failing to immediately enroll in postsecondary education. Only 1 in 5 graduates (20 percent) who did not enroll completed both of these steps. Males, students who qualified for FRPL, English language learners (ELL), students with individualized education plans (IEPs), at-risk students, and URM students were overrepresented among graduates who melted. Additionally, graduates who did not enroll in postsecondary education the following fall attended schools with higher rates of FRPL students and with higher proportions of URM students relative to all college-intending students.

Table 2. Student and School Characteristics of High School Graduates Intending to Enroll in PSE by Enrollment Status: Class of 2017 through Class of 2019

Characteristics	Intended to enroll in PSE		Intended to enroll in PSE but did not	
	Mean	SD	Mean	SD
No FAFSA & no ACT/SAT	0.13	[0.33]	0.46	[0.50]
No FAFSA & took ACT/SAT	0.10	[0.31]	0.16	[0.37]
FAFSA & no ACT/SAT	0.16	[0.36]	0.18	[0.38]
FAFSA & ACT/SAT	0.61	[0.49]	0.20	[0.40]
Enrolled in PSE	0.78	[0.42]	0.00	[0.00]
Enrolled in 2-year public	0.33	[0.47]	0.00	[0.00]
Enrolled in 4-year public	0.31	[0.46]	0.00	[0.00]
Enrolled in 4-year private	0.13	[0.34]	0.00	[0.00]
Female	0.54	[0.50]	0.50	[0.50]
FRPL	0.38	[0.48]	0.63	[0.48]
ELL	0.03	[0.18]	0.07	[0.25]
IEP	0.08	[0.26]	0.18	[0.38]
At-risk student	0.32	[0.47]	0.58	[0.49]
URM	0.19	[0.39]	0.29	[0.45]
Percent FRPL in school	0.36	[0.17]	0.42	[0.19]
Percent URM in school	0.21	[0.17]	0.26	[0.20]
Class of 2017	0.33	[0.47]	0.33	[0.47]
Class of 2018	0.34	[0.47]	0.34	[0.47]
Class of 2019	0.33	[0.47]	0.33	[0.47]
N	78,508		17,405	

At-risk is defined by individual school districts using guidance from the Student Reporting in Iowa Data Dictionary. URM is all students who do not identify as "White/Non-Hispanic."

Descriptive statistics shed light on characteristics associated with summer melt; however, further analysis is needed to determine which factors are significantly and strongly related. Therefore, we conducted several linear probability models to determine the conditional association between these variables of interest and summer melt.

Table 3 provides the average marginal effects for four regressions that predict the probability that a student who intended to enroll in postsecondary education did not enroll in the fall immediately following high school graduation. The average marginal effect is the average percentage point change in the predicted probability from the base category. The four regressions build on one another to illustrate how completing important college-going steps (i.e., filing the FAFSA and taking the ACT/SAT) are attenuated by including other factors in the model. All regressions include school and year fixed effects, and standard errors are clustered at the school level. The four models include the following variables:

Model 1: ACT/SAT and FAFSA completion

Model 2: Model 1 plus math proficiency in 11th grade

Model 3: Model 2 plus gender, FRPL status, ELL indicator, IEP indicator, at-risk indicator, and URM status

Model 4: Model 3 plus the percentage of FRPL students in the school building and the percentage of URM students in the school building

Model 1 illustrates that taking the ACT/SAT decreases the probability of melt by 26 percentage points, and completing the FAFSA decreases the probability of melt by 37 percentage points. Even when all variables are included (Model 4), completing the ACT/SAT still reduces the likelihood of melt by 19 percentage points; filing the FAFSA, by 36 percentage points. These findings illustrate that completing standardized tests and the FAFSA are highly and significantly correlated with graduates' follow-through on plans to enroll in college.

Considering the other variables in the models, we find much smaller coefficients in the full model (Model 4). Academic achievement is negatively related to summer melt. For example, relative to individuals who did not have an 11th-grade math score, students who earned an “advanced proficient” were 10 percentage points less likely to melt. Students who qualified for FRPL were 8 percentage points more likely to melt than students who did not qualify. There is no difference in the predicted probability of summer melt between White students and URM students.

Table 3. Summer Melt Linear Probability Model: Average Marginal Effects

Variables	Model 1: College Steps Only	Model 2: College Steps + Academic Achievement	Model 3: College Steps + Academic Achievement + Demographics	Model 4: College Steps + Academic Achievement + Demographics + School- Level Characteristics
Took ACT/SAT	-0.27*** (0.01)	-0.24*** (0.01)	-0.20*** (0.01)	-0.20*** (0.01)
Filed FAFSA	-0.38*** (0.01)	-0.37*** (0.01)	-0.37*** (0.01)	-0.37*** (0.01)
Math: Not proficient		0.00 (0.01)	-0.02 (0.01)	-0.02 (0.01)
Math: Proficient		-0.09*** (0.01)	-0.09*** (0.01)	-0.09*** (0.01)
Math: Advanced proficient		-0.13*** (0.01)	-0.10*** (0.01)	-0.10*** (0.01)
Female			-0.01*** (0.00)	-0.01*** (0.00)
FRPL			0.08*** (0.00)	0.08*** (0.00)
ELL			-0.02 (0.01)	-0.02 (0.01)
IEP			0.05*** (0.01)	0.05*** (0.01)
At-risk			0.07*** (0.00)	0.07*** (0.00)
URM			0.00 (0.01)	0.00 (0.01)
Percent FRPL in school				0.00* (0.00)
Percent URM in school				-0.00 (0.00)
N	78,508	78,508	78,508	78,508

Standard errors clustered at the school level in parentheses. All models include school and year fixed effects.

\* p<0.05 \*\* p<0.01 \*\*\* p<0.001

## CONCLUSION

Summer melt affects approximately 1 in 5 college-intending high school graduates in Iowa. While this analysis identifies multiple factors associated with summer melt, the most substantial are the relationships with taking the ACT/SAT and filing the FAFSA. Therefore, policymakers, practitioners, and advocates should champion every college-intending student to complete these important steps in the college-going process. If college-intending students complete the ACT/SAT and file the FAFSA, they are much more likely to follow through with their plans than students who do not complete these steps.

Unfortunately, high school counselors and other practitioners who could encourage and assist college-going students with these two important steps do not necessarily know students' intentions early enough to act. High school students indicate their intentions at the end of their senior year, when they ideally should have already taken the ACT/SAT and filed the FAFSA. While Course to College, a program developed by Iowa College Aid to increase the college-going culture in the state, collects students' post-high school intentions at the beginning of the senior year and provides that information to high school counselors, the data are limited. Early college-intention information is gathered only for those schools that participate in Course to College and only for those seniors who complete the survey. Therefore, we recommend that the statewide senior exit survey be administered much earlier during senior year or even at the end of junior year. Gathering students' post-high school plans earlier would allow all counselors to identify college-intending students in time to provide ACT/SAT and FAFSA support.

We find a strong relationship between filing the FAFSA or completing the ACT/SAT and enrolling in PSE for college-intending students. Prior research yields similar findings. Mandatory SAT/ACT for juniors in Maine, Illinois, and Colorado increased enrollment rates at four-year institutions (Hurwitz et al., 2015; Klasick, 2013). Hyman (2017) found that policies mandating college entrance exams were beneficial for low-income students and students who attended the poorest high schools. Twenty-four states plus the District of Columbia require high schoolers to take the ACT or SAT (Gewertz, 2020).

While mandatory FAFSA is gaining traction, few states have implemented the policy. Louisiana was the first state to require all high school seniors to complete the FAFSA, beginning in 2018. Texas and Illinois followed suit in 2019 (Cameron & Lacy, 2020). Given the policy's recent implementation, its effect on college enrollment is unknown. However, Granville (2020) found that Louisiana's policy closed FAFSA completion gaps. For example, the difference between FAFSA completion rates at high-income districts and low-income districts dropped from approximately 9 percentage points to 1 percentage point. Previous research has also shown that receipt of just \$1,000 in financial aid per semester increased a student's likelihood of enrollment by 30 percent (Richburg-Hayes et al., 2009). Because little financial aid is available to students who do not file the FAFSA, an increase in FAFSA filing could increase access to aid and therefore reduce summer melt.

In light of our research and prior research on mandatory SAT/ACT and FAFSA, we recommend that Iowa focus on promoting these steps to high school students, especially college-intending students. As mentioned above, an earlier survey of post-high school intentions will identify these students so they can be targeted for assistance with the ACT/SAT and the FAFSA. Further, we recommend that Iowa investigate the feasibility of mandatory FAFSA and ACT/SAT completion for all high school students. We note, however, that the impact of ACT/SAT completion might diminish in the future as higher education institutions move toward test-optional policies—a trend that has been accelerated by the difficulty of administering tests during the pandemic.

We also find that college-intending students who qualify for FRPL are more likely to melt than their counterparts. Therefore, more resources and programs should focus on students and schools with higher rates of students who qualify for FRPL. The GEAR UP Iowa program administered by Iowa College Aid provides resources to low-income school districts to cultivate a college-going culture. More programs like GEAR UP are needed if the gap between graduates' intentions and actions is to close.

Iowa College Aid works to build a college-going culture throughout Iowa through our various programs and interventions. This analysis illustrates that two important behaviors are highly correlated with continuing on to higher education for students who desire to do so: taking the ACT/SAT and filing the FAFSA. Policies and resources should focus on these two important college-going steps that could close the gap between graduates' intentions and their actual enrollment behavior.



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