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Diversity, Bias, and Student Outcomes

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Abstract

This paper examines how racially-motivated bias incidents relate to college students' academic outcomes, and how this relationship differs across race. There is evidence that students' academic outcomes are negatively impacted by bias, particularly among marginalized groups. This could have severe impacts on equality, overall student success, and future outcomes. I use Colby College student-level data to analyze the effects of bias incidents on both changes in individuals' GPAs, and differences in probability of retention across individuals. I analyze the effects of one severe bias incident in the Spring of 2009, and the effects of several bias incidents which occurred over the span of 16 years. I find that the 2009 incident relates to significant declines in students' GPAs, and small potential declines in the probability of retention. The correlation between multiple isolated incidents and semester GPAs is largely insignificant; however, there is evidence that multiple incidents are related to lower probability of retention, and students' final GPAs decline significantly as they experience a larger number of incidents. As the Spring of 2009 followed two other bias incidents directly, this may suggest that while students are resilient to isolated incidents, an accumulation of several severe bias incidents may have severe, negative effects on academic outcomes.

1 Introduction

A culture of bias may have severe negative impacts on students' academic outcomes. While there is currently little economic research on this topic, the existing literature supports the idea that bias has a strong negative impact. Desmond Ang (2018) finds that exposure to police violence related to significant, long term decreases in GPA, retention, and mental health among high school students. These results vary substantially by race and context; minority populations are strongly affected by the deaths of individuals within the same population, while white students are largely unaffected.

Declines in minority success are serious problems in their own right. Previous literature has shown that GPA is significantly correlated with other critical student outcomes such as retention (Kerkvliet and Nowell 2004). Both have negative implications for adult outcomes such as earnings (Loury 1997). And these results imply serious issues of inequality in student populations, as Ang found that decreases in retention, GPA, and mental health outcomes were driven by declines among students of color in particular. Economic research on equality of opportunity shows that it is important to rectify inequalities such as educational gaps which are caused by circumstances out of individuals' control (Roemer and Trannoy 2016). Gaps caused by bias incidents certainly seem to fall into that category.

Declines in minority success have college-level implications as well, suggesting harmful effects on the social and academic outcomes of entire student bodies, as a successful, diverse student population has been shown to benefit all students (Hurtado 2007; Agurto Adrianzén et al. 2019; Fischer 2008; Carrell et al. 2016). Diverse student populations and institutions that encourage diversity improve critical thinking, social awareness, and democratic skills across student bodies (Hurtado 2007). Diverse study groups have also been found to score higher on

academic quizzes than study groups that were not diverse (Agurto Adrianzén et al. 2019). While improving academic and classroom outcomes, diversity also improves social outcomes. Campus racial diversity increases friendship diversity, and has been shown to lead white men to behave more positively towards marginalized peers—particularly when those marginalized peers are successful (Fischer 2008; Carrell et al. 2016).

The success of marginalized students leads to the success of entire student bodies, and therefore factors that harm the outcomes of marginalized students—such as severe bias incidents—may harm the outcomes of entire student bodies as well. It is critical to study the impact a culture of bias has on marginalized students' academic outcomes because of concerns about inequality and individual outcomes, as well as concerns about the success of entire student bodies.

In this paper, I examine the effects of racial discrimination on students' academic outcomes at Colby College. I analyze the differential effects of racial discrimination on subsets of the greater student population. How do incidents of discrimination and bias affect student GPAs and retention, and how do these effects differ across race? I begin by studying the impact of an incident that occurred in the Spring of 2009, in which campus security violently restrained two students of color. I analyze the differential effects of this incident on student GPAs, controlling for both individual and time fixed effects, testing the difference within individuals across time. I find that students' GPAs decreased significantly in the Spring of 2009 compared to the previous semester. While this effect is true for the entire student body, I find that the magnitude of the decline is nearly five times as large for students of color than it is for white students—close to a 0.2-point drop in Semester GPA. Furthermore, in studying the effects of this incident on retention, I find some evidence that being enrolled during the Spring of 2009 is

associated with a higher likelihood of leaving the college, though these results are not as economically or statistically significant as the GPA findings.

To support the evidence of academic harm that I find in my analysis of Spring 2009, I also examine the impact of multiple bias incidents on students' academic outcomes. I examine the impact of eight bias incidents that occurred from 2002-2018 on students' Semester GPAs, probability of retention, and cumulative GPAs—their final GPA upon graduation. I find some evidence that experiencing any racially-motivated incident lowers the probability of remaining at the college—for those who experienced a bias incident as a sophomore, there is a drop of around 1.32% in the probability of remaining at the college for another full year. Furthermore, while I find no significant impact on semester GPAs, I do find that experiencing a higher number of bias incidents throughout one's time at the college relates to significantly lower final, cumulative GPAs. Experiencing one additional incident is related to a 0.043-point drop in cumulative GPA. Along with the knowledge that the Spring 2009 bias incident directly followed multiple prior bias incidents, these results could suggest that while individuals academic outcomes are not as significantly harmed by isolated bias incidents, experiencing several repeated bias incidents could have damaging effects on students' academic outcomes—which then translate to substantial declines in adult outcomes such as earnings.

There is substantial literature delving into the factors that affect academic outcomes among college students. Previous literature has shown that retention is significantly correlated with GPA and credit hours, financial need and aid, and the amount colleges invest in instruction—professor's salaries, resources, etc (Kerkvliet and Nowell 2004; Wetzel et al. 1999; Scott et al. 2006). However, such analyses often exclude factors that relate to bias. Outside of Ang's research, there has been little study of the impact of bias on student outcomes at all.

My research adds to the literature in several ways. Most literature at the university level—discussing both academic outcomes and diversity—focuses on large, public universities, as data is easier to obtain and includes larger sample sizes. However, non-profit private institutions have substantially different demographic makeups; they are typically less racially diverse, younger, and on average demonstrate less financial need (Horn and Simone 2017). These differences seem especially pronounced in selective institutions such as Colby College. Furthermore, smaller liberal arts college are different on a community level—they have much smaller student populations, and therefore may be closer-knit, more cohesive campus communities than those at larger institutions. Therefore, it is important to examine both diversity and academic outcomes such as retention and GPA in the context of a small, private college, as it is likely that—due to the notable differences between these types of institutions—the results vary.

My research also adds to the current literature in that it focuses on the effects of bias-related crime on college student outcomes. As has been mentioned, there is little literature that examines the effects that bias-related factors have on student outcomes. While Ang does study these effects, his paper is focused on high school students, and the violence he studies is not closely tied to a single institution. In my research, I look at the effects of an incident tied to—and potentially indicative of a larger culture within—a single institution, Colby College, on students at that institution. In this way—and in its focus on a small, private college—my research makes a significant contribution to the current literature.

The paper is organized as follows: in Section 2, I provide background information about the events that occurred in the Spring of 2009, and the more extensive list of overt bias incidents that occurred from 2002-2018. In Section 3, I describe the data I obtained from Colby's

Institutional Research department. In Section 4, I discuss my analysis of the incident of April 12th, 2009, outlining empirical methods and results for the analysis of Semester GPA and retention. Section 5 covers the analysis of multiple incidents, including empirical methods and results for the analysis of Semester GPA, retention, and cumulative GPA. This section also includes brief back of the envelope calculations based on the cumulative GPA results. In Section 6 I conclude with a discussion of my findings and their broader implications.

2 Background

2.1 Spring 2009

On April 12th, 2009, Colby security forcefully restrained two students of color, who were subsequently restrained and arrested by the Waterville police (Martin 2009). As is described in the official investigation report, after confronting a security officer who was questioning another individual in the Pugh Center—a part of Colby's student center typically thought of as a safe space for minorities—the first student was forced to the ground, where he was held by two to three officers for ten to twenty minutes, bleeding from his head. The second student, after attempting to interfere in this incident, was also held forcefully to the ground. A crowd gathered in the center, and several bystanders were also treated aggressively by security officers; one was physically pushed out of the building. Colby security proceeded to call the Waterville police; one officer pepper sprayed the second student multiple times while he was restrained, and both students were subsequently arrested. All security guards involved were white. While the official investigator report "finds that race was not a basis for the security officers' actions on April 12," many students outwardly disagreed (Martin 2009).

The excessive use of force against students of color provoked outrage throughout the Colby community. On April 14th, hundreds of students attended a rally held on the academic

quad (Monroe 2009). Several students, the vice president of student affairs, and the president of the college all spoke to the crowd, who were dressed predominantly in red to represent the blood of one of the students (Monroe 2009). A forum was also held in the days that followed, and students continued to discuss the incident—in person and through Colby's Civil Discourse, a forum in which members of the Colby community discuss various topics and concerns related to the college—for weeks (Eakin 2009). Notably, all of these events occurred less than a month before finals began, and therefore could have had a critical impact on students' grades. Whether the incident itself was officially deemed racially motivated or not, it had a substantial impact on the student population—particularly among students of color (Eakin 2009).

2.2 Overt Bias Incidents from 2002-2018

In addition to analyzing the incident that occurred on April 12th, 2009, I also analyze the relationship between academic outcomes and several other overt bias incidents that occurred over a ten-year span between Spring 2002 and Spring 2018. Unlike April 12th, 2009, none of these incidents involve physical violence—one possible reason why their impact on semester GPA was not significant, while the Spring 2009 incident was. The only incidents that occurred in successive semesters were in the Spring of 2008, Fall of 2008, and Spring of 2009. This succession could be another explanation for the severe drop in GPA associated with April 12th, 2009.

I determine which bias incidents to include based on whether they were followed by physical student protest (rallies, gatherings, forums), and whether they were presence in at least two articles from any of the following sources of information: the college's bias incident log, the *Echo* (Colby's student newspaper), and a timeline of bias and activism at Colby created by the

Education department, titled “A People’s History of Colby College.” The incidents included in the analysis are as follows:

March 2003: Vandalism in the Bridge, SOAR, and Women’s Club offices—three clubs dedicated to supporting those of all genders and sexualities—led to a formal investigation and report, along with a large rally to support victims of homophobia.

November 2005: Derogatory remarks targeting students of color were written on several whiteboards and mirrors throughout one of Colby’s dormitories, sparking several *Echo* articles and a forum discussing racism in the dorms.

April 2008: A racist Cinco de Mayo party invite, accompanied by T-shirts with offensive “Border Patrol” slogans, sparked Civil Discourse discussion, several emails and articles, and a multiculturalism rally.

September 2008: When Colby’s Student Programming Board (SPB) gave Loudness—the events scheduled for the first weekend of classes—a Lu’au theme, racist stereotypes upset students, leading to Civil Discourse discussion, Echo articles, a small student rally, and a public apology from SPB

November 2008: A comedian SPB brought to campus made racist, sexist, and anti-Semitic jokes. Compounded with insensitive Halloween costumes and other insensitive events throughout 2008, this led to a large sit in (130+ students) and substantial conversation.

April 2009: This is the incident outlined in the prior section of this paper—2 students of color were forcefully restrained, assaulted, and arrested by security officers, which led to an official investigation, large protests, and news coverage from Colby and Bangor, Waterville papers.

March 2011: Homophobic Vandalism sparked substantial discussion through the *Echo* and the Civil Discourse.

April 2015: Several racist posts on Yik Yak—a social media platform that facilitated conversations between individuals within a five-mile radius—which targeted the Black Lives Matter movement sparked outrage. A rally with over 500 students was held.

February 2018: A giant swastika was drawn in footprints in the snow, leading to *Echo* articles and Civil Discourse, as well as Dialogue dinners and a "Colby Against Hate" gathering.

I further categorize these incidents based on whether they were racially-motivated. I classify the incidents of November 2005, April 2008, September and November 2008 (which I analysis together, as they occurred in the same semester), April 2009, and April 2015 as racially-motivated, while the events of Mar 2003, Mar 2011, and Feb 2018 are classified as non-racially-motivated. It is worth noting that this is based on primary motivation, so while incidents like that in February 2018 could absolutely be harmful to people of color, the primary motivation seems not to be racism, but anti-Semitism.

3 Data

To research the relationship between the above bias incidents and academic outcomes at Colby, I use student-level data from the college. The dataset includes the past twelve cohorts of students—including those who graduated and those who either transferred or dropped out—who enrolled from 2002 through 2014. This dataset was compiled by Colby College's Institutional Research department specifically for this project, and includes data that were collected by admissions, as well as data collected by the college through academic records. It includes 6,318

individuals, and a total of 74,087 semester observations, including demographic information (such as race and gender) and academic information (such as academic status and GPA).

The above number excludes several individuals who were removed from the sample due to privacy concerns. The data were de-identified, but any individual who was identifiable through the given information—meaning they were the only individual in any category—was removed from the dataset as it was being compiled. For example, if an individual was the only member of their cohort who was a certain race, a member of a certain major, and from a certain region, they were not included in the completed dataset. Ultimately, this led to the removal of around 450 individuals, which accounts for approximately 6% of the total number of students. Most likely, this biases the sample away from minority populations, as minorities are more likely to be identifiable. For the purposes of my analysis, this may cause a bias that ultimately understates the impact of bias incidents on students, as it removes a portion of the hypothetically most affected population—minority students. It may also lead to understatement of differential effects, as the sample size of students of color is even smaller than it otherwise would have been.

Due to the same identifiability concerns, certain variables were clustered in broader categories than they otherwise would have been. Most significantly, the "race" category in the dataset is broken up into only three categories: "White," "Students of Color (SOC)," and "International." In this case, "White" includes all students who are both American and white, or whose race was unknown (a very small portion of the sample). "Students of Color" includes all American, non-white students, and "International" includes all students who are not American, regardless of race.

Individuals who enrolled for greater than twelve semesters (including Colby's one-month January semesters) were removed from the current dataset for the analysis of GPA, as such

students—less than 10% of the total population—may behave very differently from the average student, and therefore may skew the results. Students who were enrolled for fewer than 12 semesters remain in the dataset. This leaves us with 5,871 individuals and 67,542 semester observations. It should be noted that removing this portion of the sample—slightly less than 10%—biases the results somewhat. As students who tend to take longer than four years to graduate often do not graduate at all, the mean retention rate—the percentage of students who graduated from Colby, and therefore neither transferred nor dropped out—for the sample that excludes those students is about 4 percentage points higher than the retention rate for the total sample. Mean GPA, however, is only 0.02 points higher in the adjusted sample after controlling for GPAs that are missing or equal to zero. For this reason, the sample was limited to only students who spent twelve semesters at Colby for the analysis that used Semester GPA as an outcome. For the analysis examining retention, however, the entire population—excluding extreme outliers who had more than 20 recorded semesters—was included in the dataset.

Table 1: Summary Statistics

	Fa2002 - Fa2008	Spr2009	Fa2009 - Sp2018	Overall
Retention Rate	0.939	0.958	0.959	0.951
	(0.001)	(0.005)	(0.001)	(0.001)
GPA	3.385	3.405	3.481	3.442
	(0.003)	(0.011)	(0.003)	(0.002)
I(Financial Need)	0.041	0.187	0.391	0.246
	(0.001)	(0.009)	(0.002)	(0.002)
I(Female)	0.567	0.557	0.555	0.560
	(0.003)	(0.012)	(0.003)	(0.002)
I(Male)	0.433	0.443	0.445	0.440
	(0.003)	(0.012)	(0.003)	(0.002)
I(American Student of Color)	0.086	0.109	0.152	0.124
	(0.002)	(0.007)	(0.002)	(0.001)
I(International)	0.059	0.047	0.072	0.066
	(0.001)	(0.005)	(0.001)	(0.001)
I(White)	0.855	0.844	0.776	0.809
	(0.002)	(0.009)	(0.002)	(0.002)
Observations	27016	1741	38785	67542

Summary statistics for the limited sample can be found in Table 1. Table 1 is separated into the periods before, during, and after Spring of 2009. Overall, 12.4% of the total population is made up of students of color, and only 6.6% of the sample is international, suggesting a substantial lack of diversity. Diversity increases in later semesters, with higher percentages of both international students and American students of color. There are also far more students who received need-based financial aid in the second half of the sample, and the distribution between male and female students is more even.

The mean GPA of the total sample is relatively high, at around 3.4. Just as diversity increases in later semesters, GPA is around 0.1 points higher in the semesters following Spring 2009 than in the preceding semesters. Retention rates within the sample are also substantially higher in later periods.

Differences in GPA based on race can be seen in Figure 1. There is a substantial disparity in GPA across races, with international students' GPAs substantially higher than those of white students, and American students of color's GPAs substantially below both in the Fall of 2002. Over time these gaps converge slightly, though they do remain in the Spring of 2018. Across those fifteen years, GPAs increase substantially across the entire population.

A vertical red line in Figure 1 indicates the Spring of 2009. GPA across the total population increases slightly from the Fall of 2008 to the Spring of 2009, but decreases for both International students and American students of color. This visualization suggests a possible decrease in the GPAs of students of color due to the events of April 2009.

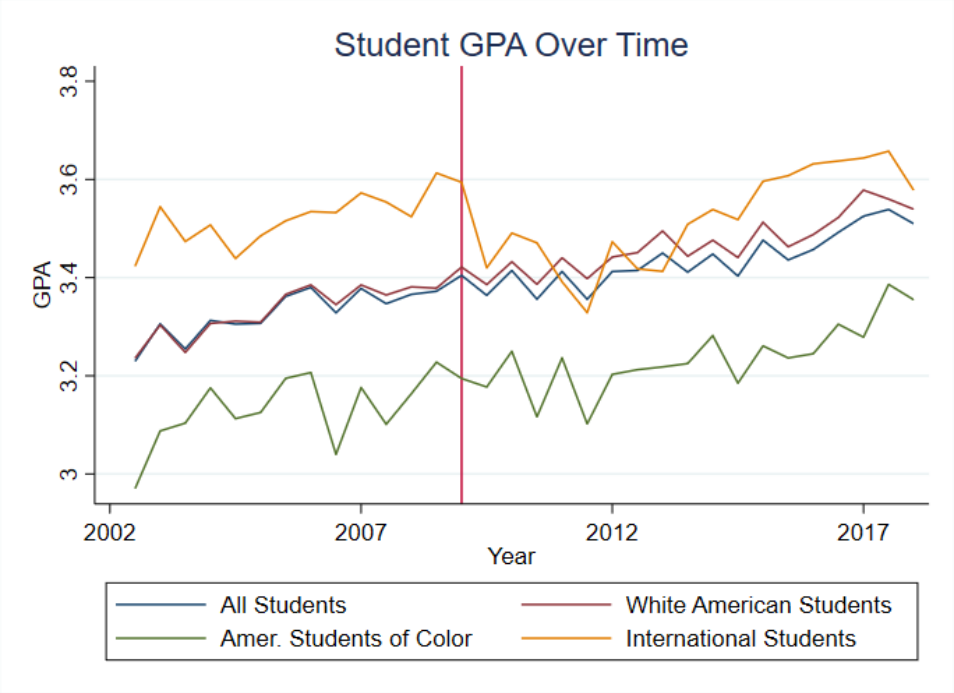

Figure 1: Student GPA Over Time, Across Race

Figure 2 includes indicators for all 8 incidents discussed in this paper. Racially-motivated incidents are marked by red lines, while non-racially-motivated incidents are marked by green lines. The Spring of 2009 is marked by a thick red line.

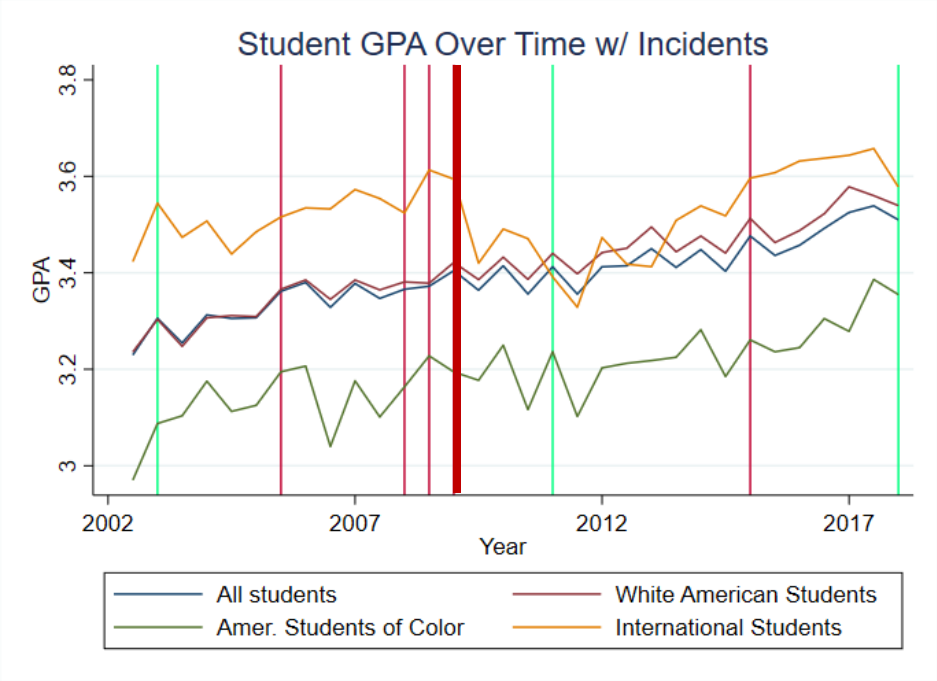

Figure 2: Student GPA Over Time Across Race, with All Incidents

Based solely on this graph, it is difficult to determine any trends in GPA relative to severe bias incidents, though this could be due in large part to confounding factors. For example, GPAs are significantly different in Spring and Fall semesters, and steadily increase over time.

4 April 2009 Analysis

4.1 Empirical Methods: Effects on GPA

To determine the effects of the events of April 12th, 2009 on student GPAs, I run the following OLS regression:

$$GPA_{it} = \alpha_i + \beta_1 Spr2009_{it} + \beta_2 X_{it} + \gamma_t + \mu_i + \varepsilon_{it}$$

where GPA_{it} is an individual's GPA in a specific semester, $Spr2009_{it}$ is an indicator which is equal to 1 if the time period is Spring of 2009 for a specific individual, and X_{it} represents controls for an individual at a specific time—in the current regression, this includes class year (whether an individual was in their first, second, third, or fourth year, or past their fourth year) and whether the semester was Spring or Fall. Spring semester GPAs are significantly higher, so it is important to control for this. γ_t represents individual fixed effects, and μ_i represents semester fixed effects. Standard errors are clustered at the individual student level. All students who were enrolled in the college during the Spring of 2009—those enrolled as early as Fall 2005 and as late as Fall 2008, who typically graduated in Spring 2012—are included in this regression.

While all semesters between Fall 2005 and Spring 2012 are included in the semester fixed effects, in this case, the constant α_i is equivalent to a student's GPA for Fall 2008, the semester directly preceding the semester of interest, Spring 2009. Therefore, the coefficient β_1 represents the difference in an individual's predicted GPA from the Fall of 2008 to the Spring of 2009, holding all else in the model fixed.

To determine differential effects across races, I run four regressions; one for the entire student population, one limiting the sample to white students, one limiting the sample to American students of color, and one limiting the sample to international students.

4.2 Empirical Methods: Effects on Retention

Like GPA, retention is an important measure of academic success. However, as the number of semesters a student spends at Colby is positively correlated with both their retention and their probability of being enrolled during any single semester, the correlation between retention and enrollment during April 2009 has extreme upward bias.

To get around this problem, rather than using retention as an outcome, I use the probability of an individual leaving the college early. I run the following two OLS regressions. The first is as follows:

$$I(\text{Left Before Sophomore Spring})_i = \alpha_0 + \beta_1 I(\text{Exp\_Spring2009 as Freshman})_i + \beta_2 I(\text{Race})_i + \beta_3 I(\text{Exp\_Spring2009 as Freshman}) X I(\text{Race})_i + \beta_4 X_i + \varepsilon_i$$

where $I(\text{Left Before Sophomore Spring})_i$ is an indicator for whether a student either transferred or dropped out before their sophomore spring, equal to 1 if they left and 0 if they were retained to at least that point, and $I(\text{Exp\_Spring2009 as Freshman})_i$ is an indicator for whether a student was enrolled as a freshman during the Spring of 2009. The second OLS regression is as follows:

$$I(\text{Left Between Sophomore and Junior Spring})_i = \alpha_0 + \beta_1 I(\text{Exp\_Spring2009 as Sophomore})_i + \beta_2 I(\text{Race})_i + \beta_3 I(\text{Exp\_Spring2009 as Sophomore}) X I(\text{Race})_i + \beta_4 X_i + \varepsilon_i$$

where $I(\text{Left Between Sophomore and Junior Spring})_i$ is an indicator equal to 1 if a student was retained through their sophomore spring but either transferred or dropped out before they reached their junior spring, and equal to 0 if they were retained through at least their junior spring, and $I(\text{Exp\_Spring2009 as Sophomore})_i$ represents an indicator equal to 1 if a student was

enrolled as a sophomore during the Spring of 2009 and 0 if they were not. This sample is limited to students who were enrolled through at least their sophomore spring, and therefore β_1 compares students who made it to their sophomore spring and were enrolled as sophomores during the Spring of 2009 to students who made it to their sophomore spring and were not enrolled as sophomores during the Spring of 2009. β_1 in the freshman regressions compares any student who was enrolled as a freshman in Spring of 2009 to any student who was not.

Both regressions essentially test the correlation between being enrolled during the Spring 2009 bias incident and leaving the college within the following year. Both regressions also include an interaction between experiencing Spring of 2009 in their respective class years and race, therefore examining the differential effects of being enrolled in Spring 2009 as a freshman or sophomore across race. I also include controls for gender and athletic status, and a control for the year in which a student enrolled at Colby, as retention rates vary slightly over time.

While not a perfect proxy for retention, this outcome is close; of the 573 students in my sample who were not retained at Colby—meaning they either transferred or dropped out—33% left the college before their sophomore spring, and 34% left the college before their junior spring. However, it should be noted that this analysis is more representative of transfers than drop-outs. Students who leave the college before their junior spring represent about 80% of total transfers, but just 40% of total dropouts. Therefore, this analysis is far more focused on students who transferred—still an important outcome in considering student and college-level success.

This regression is also limited in that it cannot control for certain factors that vary across individuals. One such factor is major—as freshmen cannot declare major, and the major division variable in this dataset does not include individuals who did not graduate, it was impossible to control for differences across majors.

4.3 Results – Effects on GPA

As can be seen in Table 2, the Spring of 2009 was generally related to a decrease in student GPAs. For the total population, shown in Column (1), the Spring of 2009—compared to the prior semester—was related to a 0.063-point decrease in predicted GPA for an individual, holding all else in the model fixed. This result is significant at the 99% level.

Table 2: Effects of Spring 2009 on Semester GPA

	(1)	(2)	(3)	(4)
VARIABLES	All Students	White	American SOC	International
Spring 2009	-0.0633***	-0.0436**	-0.190***	-0.169
	(0.0197)	(0.0210)	(0.0648)	(0.117)
Class Year	0.0697***	0.0735***	0.0708***	-0.0388
	(0.00575)	(0.00609)	(0.0195)	(0.0313)
Spring	0.0981***	0.0905***	0.165***	0.118
	(0.0172)	(0.0184)	(0.0552)	(0.112)
Semester fixed Effects	Yes	Yes	Yes	Yes
Constant	3.199***	3.196***	3.039***	3.764***
	(0.0189)	(0.0200)	(0.0630)	(0.0998)
Observations	12,710	10,744	1,382	584
R-squared	0.111	0.116	0.126	0.066
Number of studentID	1,824	1,535	201	88

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

There were substantial differences in these results across race. White individuals did experience a significant decrease in GPA of 0.0436 points, as seen in Column (2), but Column (3) shows that American students of color's GPAs decreased by 0.190 points, almost five times as much. This change represents the difference between a 3.0 GPA and a 2.81 GPA, a substantial difference. This result is also significant at the 99% level.

While the Spring of 2009 does not seem to have any significant effects on the GPAs of international students, this could be due to the small number of observations within this subset; only 88 individuals were international and enrolled in the Spring of 2009, and had nonzero and non-missing GPAs. Furthermore, as the international variable includes students of all races, it does not pick up differential effects on students of color nearly as well as the American Students of Color category.

These results are limited in some ways. For example, though they describe the effects of the Spring of 2009 on students' GPAs, they do not necessarily describe causality based on the specific events described above. It is possible that other events that occurred distinctly in the Spring of 2009 could have affected student GPA, as no such events are controlled for. However, in my research, I have not found evidence of other events or shifts specific to the Spring of 2009, and it seems likely that a change of such magnitude is due to the events of April 12th.

Furthermore, the results are robust to the use of semesters other than the Fall of 2008 as comparison. Looking at the change of an individual's GPA from the Fall of 2007—the first semester before the Spring of 2009 that did not involve its own bias incident—to the Spring of 2009, there are economically and statistically significant declines in American Students of Color's GPAs, as can be seen in Table A.1 in the Appendix.

4.4 Results – Impact on Retention

Table 3 shows the relationship between experiencing the Spring of 2009 as a freshman and a student's probability of transferring or dropping out before their sophomore spring. Remember that the outcome is equal to 1 if a student left the college, and equal to 0 if they were retained, meaning that a positive coefficient represents an increase in the likelihood of leaving Colby.

As can be seen in Columns (1) and (2) there is evidence of a positive correlation between enrollment in Spring 2009 as a freshman and leaving the college within the following year. Being a freshman during the Spring of 2009 is related to a 1.66% increase in the predicted probability of a student leaving the college before their sophomore spring, holding demographic controls and the year of enrollment fixed. This result is significant at the 90% level. However, once interactions with race are included (Column (3)), these results are no longer significant. Possibly, adding too many interactions simply muddles the effect of enrollment during Spring 2009.

Table 3: Effects of Experiencing Spring 2009 as a Freshman on Failure to Reach Sophomore Spring

VARIABLES	(1)	(2)	(3)
I(Freshman During Spring 2009)	0.0165*	0.0166*	0.0113
	(0.00972)	(0.00969)	(0.00989)
I(SOC)			-0.00624
			(0.00663)
I(International)			0.00353
			(0.00964)
I(Freshman During Spring 2009)XI(International)			0.0332
			(0.0822)
I(Freshman During Spring 2009)XI(SOC)			0.0417
			(0.0384)
Enroll Year		0.00222***	0.00226***
		(0.000613)	(0.000614)
Demographic Controls		yes	yes
Constant	0.0290***	0.0188***	0.0190***
	(0.00220)	(0.00517)	(0.00545)
Observations	6,314	6,314	6,314
R-squared	0.001	0.007	0.007

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 4 shows the relationship between a student experiencing the Spring of 2009 as a sophomore and the probability of leaving the college between their sophomore and junior spring.

There is no significant relationship between enrollment as a sophomore during the Spring of 2009 and failure to reach junior spring in this model. There is a significant, negative correlation between the interaction on Enrollment as a Sophomore in Spring 2009 and International, which may suggest that international sophomores who experienced the spring of 2009 were actually less likely to leave the college, and therefore more likely to be retained. However, this result is unreliable, as only 24 international students were sophomores during the Spring of 2009.

Table 4: Effects of Experiencing Spring 2009 as a Sophomore on Failure to Reach Junior Spring

VARIABLES	(1)	(2)	(3)
I(Sophomore During Spring 2009)	-0.00343	-0.00264	0.00141
	(0.00814)	(0.00815)	(0.00945)
I(SOC)			-0.00487
			(0.00690)
I(International)			0.0115
			(0.0113)
I(Sophomore During Spring 2009)XI(International)			-0.0473***
			(0.0143)
I(Sophomore During Spring 2009)XI(SOC)			-0.0109
			(0.0210)
Enroll Year		0.000455	0.000469
		(0.000594)	(0.000608)
Demographic Controls		yes	yes
Constant	0.0319***	0.0375***	0.0370***
	(0.00234)	(0.00612)	(0.00626)
Observations	6,123	6,123	6,123
R-squared	0.000	0.002	0.003

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

5 Multiple Incident Analysis

5.1 Empirical Methods – Impact on Semester GPA

In the hopes of supporting evidence from the initial regression, which focused solely on the Spring of 2009, I run a second linear regression, this time determining the effects of experiencing any racially-motivated incident on an individual's semester GPA. I run the following fixed effects OLS regression:

$$GPA_{it} = \alpha_i + \beta_1 I(Incident)_{it} + \beta_2 X_{it} + \gamma_t + \varepsilon_{it}$$

where GPA_{it} is an individual's GPA for a specific semester, I(Incident) is an indicator for whether an individual experienced a racially-motivated bias incident in a semester, X_{it} represents the same controls included in the Spring2009 regression, and γ_t represents individual fixed effects. This regression includes all students in the sample.

In this regression I hold constant the GPAs of the semesters prior to an incident (referred to as the pre- period) and following an incident (referred to as the post- period), along with Spring/Fall variation and class year variation.

The coefficient β_1 represents the predicted change in an individual's Semester GPA for any semester in which a student was exposed to a bias incident, compared to semesters that do not include bias incidents, holding pre- and post- periods fixed (therefore hopefully controlling for any trends in GPA leading up to an incident).

Once again, I break this analysis down into four separate regressions, studying the correlation between GPA and experiencing any bias incident for the entire population, only white American students, only American students of color, and only International students.

There are several limitations in this analysis. It would be beneficial to study the cumulative effects of an individual's enrollment during several incidents throughout their college

career; however, this method does not capture those effects. I am able to study some cumulative effects in my analysis of the impact of the number of incidents a student experiences on their final GPA, though, which is discussed in section 5.3.

This analysis may also have been more informative if it captured an individual's change in semester GPA from the pre-period to the period of an incident (similar to the analysis of Spring 2009), rather than a comparison between the predicted GPA in any semester of an incident and the predicted GPA in any semester that did not contain an incident (and was also not in a pre- or post-period). The current method may fail to completely control for trends in GPA over time; for example, in this regression, a change in GPA in the Spring of 2015 may seem more positive than it truly is due to grade inflation, as most of the comparison semesters occur prior to Spring 2015. However, the variation within individuals' Semester GPAs between the semester of an incident and any other semester is still an informative comparison.

5.2 Empirical Methods – Impact on Retention

To further examine the impact of multiple bias incidents on students' academic outcomes, I analyze their impact on retention. This analysis is similar to the analysis of the Spring of 2009's impact on retention. Due to the same issues of bias, I once again use the probability of an individual leaving the college early as an outcome, as opposed to the probability of retention itself. I run the following two OLS regressions, the first:

$$I(\text{Left Before Sophomore Spring})_i = \alpha_0 + \beta_1 I(\text{Exp\_Incident as Freshman})_i + \beta_2 I(\text{Race})_i + \beta_3 I(\text{Exp\_Incident as Freshman}) X I(\text{Race})_i + \beta_4 X_i + \varepsilon_i$$

where $I(\text{Left Before Sophomore Spring})_i$ is an indicator for whether a student either transferred or dropped out before their sophomore spring, equal to 1 if they left and 0 if they were retained,

and $I(\text{Exp\_Incident as Freshman})_i$ is an indicator for whether a student was enrolled as a freshman during any bias incident; and the second:

$$I(\text{Left Between Sophomore and Junior Spring})_i = \alpha_0 + \beta_1 I(\text{Exp\_Incident as Sophomore})_i + \beta_2 I(\text{Race})_i + \beta_3 I(\text{Exp\_Incident as Sophomore}) X I(\text{Race})_i + \beta_4 X_i + \varepsilon_i$$

where $I(\text{Left Between Sophomore and Junior Spring})_i$ is an indicator equal to 1 if a student either transferred or dropped out in the time period between their sophomore spring and their junior spring, and equal to 0 if they were retained through at least their junior spring, and $I(\text{Exp\_Incident as Sophomore})_i$ represents an indicator equal to 1 if a student was enrolled as a sophomore during any bias incident and 0 if they were not. This sample is limited to students who were enrolled through at least their sophomore spring, and therefore β_1 compares students who made it beyond their sophomore spring and were enrolled as sophomores during any racially-motivated incident, to students who made it beyond their sophomore spring and were not enrolled as sophomores during any racially-motivated incident. β_1 in the freshman regression compares any student who was enrolled as a freshman during any racially-motivated incident to any student who was not.

Both regressions essentially test the correlation between being enrolled during a bias incident and leaving the college within the following year. The regressions also include an interaction between enrollment during a bias incident and race, therefore examining the differential effects across race of being enrolled during a bias incident as a freshman or sophomore. I also include controls for gender and athletic status, and a control for the year in which a student enrolled at Colby.

5.3 Empirical Methods – Impact on Cumulative GPA

Along with semester GPA, I also study the impact of experiencing racially-motivated bias incidents on cumulative GPA—a student's final GPA upon graduating. I run the following OLS regression:

$$\text{CumulativeGPA}_{im} = \alpha_0 + \beta_1 \text{NumberofIncidents}_{im} + \beta_2 \text{I(Race)}_{im} +$$

$$\beta_3 \text{I(Race)XNumberofIncidents}_{im} + \beta_4 X_{im} + \gamma_i + \varepsilon_{im}$$

In this regression, "Cumulative GPA" is a student's average GPA across all semesters—their final GPA upon graduation—and "Number of Incidents" refers to the number of incidents that occurred during their time at the college. CumulativeGPA is adjusted for grade inflation, meaning that the increase in GPA associated only with the movement through time has been subtracted from each cohort's Cumulative GPA. Therefore, the results are not biased by the upward trend in GPA over the years. I also include interactions between the "NumberofIncidents" variable and each race variable to determine the differential effects of the number of incidents on GPA across race.

I include major division fixed effects to control for variation across major. Therefore, β_1 represents the change in the GPAs of students within the same major division (Humanities, Interdisciplinary Studies, Social Sciences, or Natural Sciences) as they experience one additional bias incident. As the major division variable does not include students who did not graduate from Colby, this removes those students from the dataset. However, as the students who did not graduate from the college—those who either transferred after a few semesters or eventually dropped out—have GPAs that behave very differently from the average student, this most likely removes problematic outliers. Those who transferred within the first few years of college have only GPAs representing grades from freshman and sophomore years—which are very different

from junior and senior GPAs—and those who drop out often have substantially lower GPAs than their peers. Therefore, removing students who transferred or dropped out is beneficial to this analysis.

I also include controls for gender and athletic status. All students in the sample (other than those removed based on graduation) are included in this analysis.

5.4 Results – Semester GPA

As can be seen in Table 5, the results of multiple incidents have far less significance than the results of the April 12th incident. Among all students, experiencing a racially-motivated bias incident is actually related to a predicted 0.0145-point increase in predicted Semester GPA, holding all else in the model fixed. While this result is statistically significant, it is substantially smaller than the results found in the previous regression, and therefore may not be economically significant. Based on analyses of each of the five racially-motivated incidents, with coefficients that reflect the change in semester GPA from the pre-period to the semester of the incident (which can be found in Tables A.3-A.6 of the Appendix) this effect seems to be driven entirely by positive results in the Spring of 2015. This breakdown suggests that the significant positive coefficients may only be the result of one outlier, rather than an overall positive trend.

In this regression I include only racially-motivated incidents in order to discern any likely differential impact on students of color. However, as can be seen in Column (3), experiencing an incident of bias has no statistically significant impact on the GPAs of American students of color. As can be seen in Table A.2 in the Appendix, the impact of all incidents—both racially-motivated and non-racially-motivated—was similarly insignificant, with even less economically and statistically significant coefficients.

Table 5: Effects of Multiple Incidents on Semester GPAs

VARIABLES	(1) All Students	(2) White	(3) American SOC	(4) International
I(Racially Motivated Incident)	0.0145***	0.0145***	0.0143	0.0243
	(0.00405)	(0.00430)	(0.0146)	(0.0164)
Class Year	0.0769***	0.0785***	0.0894***	0.0334***
	(0.00167)	(0.00176)	(0.00588)	(0.00653)
Spring	0.0369***	0.0370***	0.0450***	0.0220**
	(0.00261)	(0.00278)	(0.00957)	(0.00986)
Pre- period	-0.0146***	-0.0170***	-0.00743	0.00774
	(0.00430)	(0.00452)	(0.0163)	(0.0172)
Post- period	-0.00464	-0.00665	-0.00714	0.0396**
	(0.00424)	(0.00456)	(0.0143)	(0.0169)
Constant	3.186***	3.201***	2.964***	3.421***
	(0.00473)	(0.00504)	(0.0163)	(0.0190)
Observations	40,829	33,131	5,075	2,623
R-squared	0.100	0.110	0.091	0.027
Number of studentID	5,852	4,730	728	394

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

5.5 Results – Retention

Table 6 shows the relationship between experiencing any racially motivated incident and a student's probability of leaving the college before their sophomore spring. I analyze only racially-motivated incidents, as 98% of students experience any bias incident, while only around 85% of students experience racially-motivated bias incidents. All students who were retained for a full four years were enrolled during a bias incident, meaning an analysis including all incidents would be severely skewed.

I find no significant results in Table 6, suggesting no clear correlation between enrollment during a racially-motivated incident as a freshman and retention through sophomore year.

Table 6: Effect of Experiencing a Racially Motivated Incident on Failure to Reach Sophomore Spring

VARIABLES	(1)	(2)	(3)
I(Freshman During Racially-Motivated Incident)	0.00496	0.00315	-0.00193
	(0.00480)	(0.00474)	(0.00508)
I(SOC)			-0.00972
			(0.00747)
I(International)			-0.00742
			(0.0100)
I(Freshman During Racially-Motivated Incident)XI(SOC)			0.0197
			(0.0154)
I(Freshman During Racially-Motivated Incident)XI(International)			0.0383
			(0.0245)
Enroll Year		0.00219***	0.00216***
		(0.000611)	(0.000610)
Demographic Controls		yes	yes
Constant	0.0287***	0.0193***	0.0214***
	(0.00253)	(0.00526)	(0.00549)
Observations	6,314	6,314	6,314
R-squared	0.000	0.006	0.007

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 7, on the other hand, does show significant results. Enrollment as a sophomore during a racially-motivated incident is related to a 1.32% increase in a student's predicted probability of leaving the college between their sophomore and junior year, holding demographic controls, interactions, and cohort effects constant. This suggests that enrollment during a bias incident may have harmful effects on probability of retention for sophomores. This result is significant at the 95% level.

There is also a significant negative correlation on the interaction between enrollment as a sophomore during a racially-motivated incident and being a student of color, which seems counterintuitive—it suggests that being present during a bias incident on campus actually relates to an increase in the probability of retention for sophomores of color. However, this result is unreliable, as the sample of American students of color is relatively small—only 22 students of color left the college between their sophomore and junior springs.

Table 7: Effect of Experiencing a Racially-Motivated Incident as a Sophomore on Failure to Reach Junior Spring

VARIABLES	(1)	(2)	(3)
I(Sophomore During Racially-Motivated Incident)	0.00867*	0.00927*	0.0132**
	(0.00509)	(0.00511)	(0.00579)
AmericanSOC			0.00111
			(0.00812)
International			0.0130
			(0.0129)
I(Sophomore During Racially-Motivated Incident)XI(SOC)			-0.0229*
			(0.0132)
I(Sophomore During Racially-Motivated Incident)XI(International)			-0.0144
			(0.0223)
Female		yes	yes
Enroll Year		0.000587	0.000634
		(0.000595)	(0.000610)
Constant	0.0290***	0.0336***	0.0320***
	(0.00258)	(0.00613)	(0.00627)
Observations	6,123	6,123	6,123
R-squared	0.001	0.003	0.003

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

5.6 Results – Cumulative GPA

The correlation between multiple bias incidents and cumulative GPA are substantial and negative for all students. These results can be seen in Table 8. As can be seen in Column (4) of Table 8—which controls for select demographic factors such as gender and athletic status, and is adjusted for grade inflation, meaning that any variation caused by time trends has been removed—I find that experiencing one additional racially-motivated incident is related to a .043-point decrease in predicted cumulative GPA. This change represents the difference from around a 3.00 final GPA to a 2.96 final GPA, associated with just one additional bias incident. This result is significant at the 99% level. It suggests that the cumulative effects of bias incidents may

have a negative impact on students' final GPAs upon graduation. While this analysis considers only racially-motivated incidents, an analysis of all bias incidents—found in table A.7 in the Appendix—shows similarly negative and significant results.

Table 8: The effect of Number of Incidents on Cumulative GPA

VARIABLES	(1)	(2)	(3) Detrended	(4) Detrended
Number of Racially-Motivated Incidents	-0.0463***	-0.0761***	-0.0138**	-0.0427***
	(0.00611)	(0.00492)	(0.00603)	(0.00489)
AmericanSOC	-0.195***	-0.145***	-0.237***	-0.190***
	(0.0392)	(0.0271)	(0.0387)	(0.0269)
Internationalrace	-0.0188	0.0276	-0.0531	-0.00210
	(0.0513)	(0.0383)	(0.0511)	(0.0377)
Number of IncidentsXSOC	0.0164	0.0125	0.0247	0.0213
	(0.0203)	(0.0147)	(0.0202)	(0.0146)
Number of IncidentsXInternational	0.0442*	0.0174	0.0527**	0.0249
	(0.0246)	(0.0202)	(0.0244)	(0.0200)
Demographic Controls		Yes		Yes
Major Division FE		Yes		Yes
Constant	3.013***	3.143***	2.805***	2.949***
	(0.0129)	(0.0176)	(0.0127)	(0.0173)
Observations	6,314	5,741	6,314	5,741
R-squared	0.020	0.063	0.018	0.043

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

5.6.1 – Back of the Envelope Calculations

To provide further support that the effects severe bias incidents have on students' academic outcomes are critical, lasting effects, I quantify the effects of students' predicted GPA changes on earnings. According to Loury (1997), an increase of 1 GPA point relates to a 12% increase in average weekly earnings. Using this information, along with current data on median weekly earnings for individuals with bachelor's degrees (Torpey 2019), I calculate the impact of cumulative GPA changes.

The results of the cumulative GPA analysis are small but substantial impacts on eventual earnings. According to Column (4) of Table 8, experiencing one additional bias incident is related to a .043-point decrease in predicted cumulative GPA, which translates to a decline in adult earnings of $6.14/week, just under $320 annually. While a seemingly small amount, accumulated over a lifetime of work, one additional bias incident relates to thousands of dollars lost; the impact of several incidents would be even more substantial.

6 Conclusion

Based on past literature, it is fair to assume that experiencing incidents of bias may harm students' academic outcomes. The results of my analysis support this assumption, suggesting that in certain cases, bias incidents do harm college students' GPAs, along with their probability of remaining at the college.

The results from my initial regression, studying the impact of the events of April 12th, 2009 on students' semester GPAs, show a significant negative correlation between enrollment during this bias incident and semester GPA. This correlation is much larger for American students of color—a decline of 0.19 GPA points. There is also some evidence of a negative correlation between experiencing the Spring of 2009 and retention, as being a freshman during the Spring of 2009 was related to a 1.66% drop in probability of remaining at the college through sophomore spring. When interactions with race are included, however, this coefficient is not significant.

The retention results are similar when considering not just the Spring of 2009, but multiple racially-motivated incidents. There is some suggestion of a negative relationship, though it is only significant for sophomores in this analysis, rather than freshmen.

However, the results from the analysis of multiple incidents' effects on semester GPA seem to contradict the results from the Spring of 2009 analysis, as this analysis suggests that incidents from 2002-2018 have no significant impact on Semester GPA. There are several explanations for this discrepancy.

One notable difference between the incident in Spring 2009 and the rest of the incidents included in the "Multiple Incidents" analysis is its position following bias incidents that occurred in both the Fall of 2008 and the Spring of 2008. It is the only incident that follows two other incidents directly—all racially motivated. This may suggest that the significant decline in GPA during the Spring of 2009 is related to the impact of experiencing several severe bias incidents in a short period of time.

The Spring of 2009 may result in a sharper decline in GPA due to its physically violent nature, rather than the accumulation of several incidents; it is the only bias incident that involves physical violence towards students. However, the cumulative effect explanation is also supported by the results from the analysis of final GPA. This analysis shows a substantial decline related to enrollment during a larger number of bias incidents; experiencing one additional racially-motivated bias incident (keep in mind that most students at the college experienced at least one) relates to decreases in predicted cumulative GPA of around 0.043 points, a substantial decrease. This may suggest that while individuals are resilient in the face of isolated bias incidents—which we see in the analysis of multiple incidents on semester GPA—the accumulated effects of several concurrent bias incidents wear on students, resulting in declines in their later semester GPAs and cumulative GPAs.

Given the limitations of my analysis, I cannot confirm this explanation with certainty. My data is limited due to identifiability, and therefore is unable to clearly capture the full differential

effects of bias incidents across race. This may explain the lack of significant differential effects in several of my analyses. I am also limited by my inability to capture the effects of cumulative bias incidents on semester GPAs within individuals, as I could find no established framework for studying overlapping multiple event studies.

Still, my results suggest that bias incidents have serious negative implications on students' academic outcomes, which then translate to declines in individual outcomes such as future earnings, and potential declines in college-level success as well.

Based on these results, college administrations should focus far more energy on eliminating cultures of bias, particularly those deep-rooted enough to result in several severe bias incidents occurring in succession. Such incidents have serious negative implications for equality, individual student outcomes, and larger college-level outcomes.

These results bring up many important areas of future study. Studying the impact of bias on larger samples, which include full minority populations, is critical for a better understanding of the topic. Further studying the cumulative effects of bias incidents on students' academic outcomes may also yield important insights. Finally, as Ang (2018) does, it is worth studying non-academic outcomes such as students' mental health outcomes, to fully understand the impact of bias on students.

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Appendix

Table A.1: Effects of Spring 2009 on Semester GPA with Fall 2007 Comparison

VARIABLES	(1) All Students	(2) White	(3) Amer. SOC	(4) International
I(Spring 2009)	-0.0458**	-0.0380*	-0.107*	-0.0495
	(0.0187)	(0.0198)	(0.0631)	(0.107)
Class Year	0.0755***	0.0754***	0.0984***	0.00101
	(0.00472)	(0.00496)	(0.0169)	(0.0246)
Spring	0.0981***	0.0905***	0.165***	0.118
	(0.0172)	(0.0184)	(0.0552)	(0.112)
Semester Fixed Effects	Yes	Yes	Yes	Yes
Constant	3.167***	3.186***	2.887***	3.531***
	(0.0145)	(0.0151)	(0.0553)	(0.0635)
Observations	12,710	10,744	1,382	584
R-squared	0.111	0.116	0.126	0.066
Number of studentID	1,824	1,535	201	88

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table A.2: Effects of All Incidents on Semester GPA, Racially Motivated or Not

VARIABLES	(1) All students	(2) White	(3) American SOC	4 International
I(Bias Incident)	0.00948***	0.0100***	0.0116	0.00657
	(0.00358)	(0.00383)	(0.0124)	(0.0153)
Class Year	0.0768***	0.0783***	0.0890***	0.0345***
	(0.00167)	(0.00176)	(0.00588)	(0.00654)
Spring	0.0318***	0.0317***	0.0357***	0.0252**
	(0.00285)	(0.00305)	(0.0104)	(0.0108)
Pre-Incident	-0.0174***	-0.0189***	-0.0212	0.0131
	(0.00385)	(0.00409)	(0.0137)	(0.0157)
Post-Incident	-0.0137***	-0.0144***	-0.0217	0.0145
	(0.00387)	(0.00414)	(0.0137)	(0.0156)
Constant	3.193***	3.208***	2.976***	3.421***
	(0.00498)	(0.00533)	(0.0170)	(0.0197)
Observations	40,829	33,131	5,075	2,623
R-squared	0.100	0.111	0.092	0.024
Number of studentID	5,852	4,730	728	394

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table A.3: Effects of Fall 2005 on Semester GPA

VARIABLES	(1) Fa2005 All	(2) Fa2005 White	(3) Fa2005 SOC	(4) Fa2005 Internat
Fall2005	-0.0591***	-0.0594***	0.0376	0.0327
	(0.00946)	(0.00998)	(0.0725)	(0.0768)
classyr	0.215***	0.216***	0.0803***	0.0634***
	(0.00230)	(0.00242)	(0.0195)	(0.0193)
Spring	0.0700	0.0700	0.0289	0.0207
			(0.0654)	(0.0678)
Semester Fixed Effects	yes	yes	yes	yes
Constant	2.908***	2.910***	2.986***	3.327***
	(0.0119)	(0.0125)	(0.0958)	(0.104)
Observations	12,610	10,933	924	753
R-squared	0.102	0.108	0.099	0.054
Number of studentID	1,806	1,561	135	110

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A.4: Effects of Spring 2008 on Semester GPA

VARIABLES	(1) Spr2008 All	(2) Spr2008 White	(3) Spr2008 SOC	(4) Spr2008 Internat
Spring2008	-0.0477**	-0.0471**	-0.101*	0.0842
	(0.0194)	(0.0213)	(0.0570)	(0.0787)
classyr	0.0803***	0.0829***	0.0795***	0.0472**
	(0.00611)	(0.00645)	(0.0236)	(0.0185)
Spring	0.0668***	0.0651***	0.154***	-0.115*
	(0.0170)	(0.0190)	(0.0390)	(0.0665)
Semester Fixed Effects	yes	yes	yes	yes
Constant	3.149***	3.156***	2.932***	3.434***
	(0.0198)	(0.0208)	(0.0759)	(0.0613)
Observations	12,948	10,992	1,304	652
R-squared	0.101	0.107	0.111	0.062
Number of studentID	1,854	1,570	188	96

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A.5: Effects of Fall 2008 on Semester GPA

VARIABLES	(1) Fall2008 All	(2) Fall2008 White	(3) Fall2008 SOC	(4) Fall2008 Internat
Fall2008	-0.126***	-0.152***	-0.0307	0.178
	(0.0306)	(0.0321)	(0.124)	(0.128)
classyr	0.0962***	0.0986***	0.113***	0.0191
	(0.00599)	(0.00629)	(0.0214)	(0.0244)
Spring	-0.0856***	-0.0981***	-0.0252	0.0702
	(0.0280)	(0.0290)	(0.120)	(0.125)
Semester Fixed Effects	yes	yes	yes	yes
Constant	3.213***	3.232***	2.934***	3.403***
	(0.0173)	(0.0179)	(0.0890)	(0.0666)
Observations	12,948	10,992	1,304	652
R-squared	0.101	0.107	0.111	0.062
Number of studentID	1,854	1,570	188	96

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A.6: Effects of Spring 2015 on Semester GPA

VARIABLES	(1) Spr2015 All	(2) Spr2015 White	(3) Spr2015 SOC	(4) Spr2015 Internat
Spring2015	0.100***	0.0954***	0.102**	0.124**
	(0.0190)	(0.0227)	(0.0479)	(0.0495)
classyr	0.0715***	0.0718***	0.0967***	0.0299*
	(0.00569)	(0.00617)	(0.0167)	(0.0166)
Spring	-0.0284*	-0.0196	-0.0341	-0.0723*
	(0.0168)	(0.0204)	(0.0402)	(0.0425)
Semester Fixed Effects	yes	yes	yes	yes
Constant	3.233***	3.265***	2.960***	3.467***
	(0.0191)	(0.0211)	(0.0554)	(0.0519)
Observations	12,436	9,132	2,165	1,139
R-squared	0.082	0.102	0.066	0.036
Number of studentID	1,792	1,314	306	172

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A.7: Effect of Total Number of Incidents Experienced on Cumulative GPA

VARIABLES	(5)	(6)	(7) Detrended	(8) Detrended
Number of Incidents Experienced	-0.0291***	-0.0738***	0.00244	-0.0410***
	(0.00658)	(0.00516)	(0.00648)	(0.00512)
AmericanSOC	-0.196***	-0.149***	-0.242***	-0.200***
	(0.0479)	(0.0323)	(0.0473)	(0.0322)
Internationalrace	-0.0530	0.0194	-0.0911	-0.00941
	(0.0661)	(0.0453)	(0.0663)	(0.0455)
Number of IncidentsXSOC	0.0148	0.0123	0.0227	0.0216
	(0.0201)	(0.0144)	(0.0199)	(0.0143)
Number of IncidentsXinternational	0.0537*	0.0167	0.0627**	0.0225
	(0.0277)	(0.0207)	(0.0277)	(0.0207)
Female		Yes		Yes
Major Division FE		Yes		Yes
Constant	2.999***	3.176***	2.778***	2.967***
	(0.0164)	(0.0190)	(0.0161)	(0.0187)
Observations	6,314	5,741	6,314	5,741
R-squared	0.015	0.057	0.018	0.041

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1