Coming Back to Class

What Predicts Reenrollment of Students
Who Have Stopped Out of College?

Success Boston
COLLEGE COMPLETION INITIATIVE

About Success Boston

Success Boston is a college completion initiative dedicated to increasing the number of Boston Public Schools graduates who earn post-secondary credentials. The partners include the Boston Foundation, the City of Boston, the Boston Public Schools (BPS), the Boston Private Industry Council (PIC), 37 higher education institutions—led by UMass Boston and Bunker Hill Community College—and local nonprofit organizations. Success Boston is focused on low-income, first-generation students of color. The initiative was launched in 2008 in response to a study released by the Center for Labor Market Studies at Northeastern University and the PIC, which showed that only 35% of BPS graduates who had enrolled in college completed an Associate's or Bachelor's degree by the time they turned 25. Success Boston's theory of change is that cross-sector partnerships, guided by data and mutual accountability, will significantly change the post-secondary trajectory for BPS graduates. Success Boston's strategic framework focuses on helping Boston's high school students "Get Ready, Get In and Get Through" college, then "Get Connected" to jobs. One of Success Boston's intervention efforts is a coaching model. Other key activities within this framework include improving academic preparation and offering as-needed supports through higher education institutions until students successfully attain a degree prepared to enter the workforce.

Acknowledgements

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Boston Opportunity Agenda

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Introduction

Thirty-six million Americans have some postsecondary education and training but have not earned a degree and are no longer enrolled in college.[1] The number of college dropouts in the U.S. now exceeds high school dropouts.[2] Unfortunately, the ranks of the "some college, no degree" population are likely to increase as college persistence rates dip at many postsecondary institutions as a result of the COVID-19 pandemic. While there is an established body of literature on the predictors of college persistence and completion, researchers are now beginning to learn more about who will return to college after taking a semester or more off from school (known as "stopping out"), the factors that lead to reenrollment, and the specific interventions needed to reengage college stopout populations on a path to a college credential.

As part of Success Boston, the city's college completion initiative, Boston has publicly tracked the college completion rates of Boston Public School (BPS) graduates for over a decade.[3] Since the launch of Success Boston, the college completion rate of BPS graduates who enroll in college has climbed from 35% for the Class of 2000, the first high school class tracked through college completion, to a six-year completion rate of 54% for the BPS Class of 2012.[4] Despite the gains in college completion, this still means that nearly half of those who enroll in college are not completing a postsecondary credential within six years. There also are substantial disparities in college completion rates of BPS graduates across gender and race-ethnic subgroups. In *Staying the Course*, a report on the college enrollment and completion outcomes of the BPS Class of 2011, six-year college completion rates of first-year enrollees ranged from lows of 33.6% and 36.1% for Latinx and Black male students to highs of 71% and 83% for White and Asian female students, respectively.[5]

In this study, a stopout is defined as a student who takes off one or more semesters from college after initial enrollment (as opposed to a student who enrolls continuously through to degree completion).

In recent years, Success Boston has engaged high school, college, and nonprofit partners in two Learning Labs focused on better understanding the extent to which BPS graduates were stopping out in college prior to graduation as well as the demographic and academic characteristics of stopouts. These forums created the opportunity for college and nonprofit partners to share strategies for preventing students from dropping out of college and re-engaging those that have taken a semester or more off from college. Through these discussions, it became clear that more robust data were needed to understand the root causes that lead to stopping out of college and the factors that influence a student's decision to reenroll after taking a semester or more off from college.

To learn more about the factors associated with reenrollment of BPS graduates who have stopped out, the Boston Opportunity Agenda, the Boston Foundation, the Boston Private Industry Council (PIC), Bunker Hill Community College (BHCC), and the University of Massachusetts Boston (UMass Boston) and its Center for Survey Research conducted this stopout research study with funding support from StriveTogether. The study incorporates a mixed-methods design that draws upon a wide array of information from administrative student records, surveys fielded to students who have recently stopped out, and in-depth interviews with a subset of the survey respondents. In this study, a stopout is defined as a student who takes off one or more semesters from college after initial enrollment (as opposed to a student who enrolls continuously through to degree completion). Based on a combination of administrative data and survey data, we created analytic models to identify important predictors and patterns of reenrollment (among those who have stopped out) for BPS graduates from the Classes of 2010–2016 who initially enrolled at the city's two largest public colleges: BHCC and UMass Boston.

In recent years, one in every three BPS graduates that goes on to college immediately after high school initially enrolls at either BHCC or UMass Boston. Over 83% of the BPS graduates enrolling at BHCC and 57% of those enrolling at UMass Boston during the period of analysis in this study were Black or Latinx. As discussed previously, there are significant race-ethnic/gender gaps in the college completion rates of BPS graduates; closing them is one of Success Boston's top priorities. Given the large number of BPS enrollees at these two institutions, it is critical to boost their completion rates and reengage those who have left the institutions. It is also important to improve the completion rates of BPS graduates enrolling at other postsecondary institutions in the Boston area. Hence, one goal of this research is to improve our understanding of what drives reenrollment. This research brief describes how this study was conducted and presents summary findings. The key learnings from this research will inform leaders and policymakers about the current state of stopouts so they are better able to develop and deploy targeted interventions and pursue systemic reforms to address barriers to reenrollment.

What the Research Says about Students Who Stop Out

There is a substantial body of research that examines why students stop out. More recently scholars have begun to look for factors that might explain why some students reenroll and to identify personal and institutional barriers students encounter when returning to college. The key findings from the literature summarized below informed the data collection, modeling, and survey design for this study.

WHY STUDENTS STOP OUT

Prior research has identified specific academic and socioeconomic factors that predict the likelihood of stopping out in college. A student's grade point average (GPA) in specific courses, including math, English, chemistry, and psychology were among the strongest predictors of stopping out in a large study of University of Washington undergraduates.[6] The timing of these student's enrollment also played a role in predicting stopouts. Pell eligibility has also been found to be predictive. In one study on first degree–seeking undergraduates enrolled at public colleges in Ohio and Florida, the probability of stopping out was 1.5 times greater for Pell-eligible students than for ineligible students.[7] Similarly, first-generation students are more likely to stop out. Using data from three longitudinal studies, Cataldi et al. found that a third of first-generation students had stopped out within three years after first enrolling without receiving a credential/degree, compared to a quarter of their peers whose parents had attended some college and to 14% of students whose parents had earned a bachelor's degree.[8]

Researchers have found that academic momentum, defined as the speed with which undergraduates progress in college, affects their likelihood of completing a degree. Attewel et al. found that an early loss of momentum greatly reduces a student's chances of graduation over and above the effects of a student's sociodemographic background and high school academic preparation.[9] Mabel and Britton similarly found that students who struggle to maintain momentum, in terms of both their persistence from one semester to the next in their early college years and their success at completing attempted coursework, were at greater risk of stopping out later, even if they had completed three-quarters of the credits typically required to graduate. Late departure is widespread, especially at two- and open-admission four-year institutions, where nearly 20% and 14% of students, respectively, left with no degree after earning at least three-quarters of the credits typically required to graduate.[10]

These academic and demographic factors are easily measured, and many institutions have based their retention strategies on them. However, a declining GPA may be an indicator of a potential stopout, but not the core reason for stopping out. ReUp Education, a startup based in California, has been partnering with colleges across the U.S. to help engage and reenroll college stopouts. Compiling the results from interviews with more than 125,000 stopouts between 2016 and 2019 (more than 85% of students from whom the data was collected were pursuing bachelor's degrees), Horn and Lyle found life balance issues, such as personal commitments and the need to work to pay for living expenses while also taking classes, were more often a cause of stopping out than were academics.[11] These life balance issues can also affect a student's commitment to school and an educational goal.

In a survey of 600 young adults (22 to 30 years of age) in the U.S. who had completed at least some postsecondary schooling, the Public Agenda also found that the need to work and make money and the financial costs of college were two major reasons for deciding to withdraw from school. The young adults surveyed also reported that needing to work full-time, family commitments, and not being able to afford college were the top three major reasons for not returning to school.[12]

WHY STOPOUTS REENROLL

The literature on why stopouts reenroll is less established though there have been several recent contributions. These studies found that stopouts are not a homogeneous group and a number of factors influence students' reenrollment decisions. Pelman and Watson provide examples to illustrate how different stopouts can be: A 23-year-old, single working parent with 90 credits who stopped out five years ago because of issues balancing work and school, but who is intrinsically motivated to earn her degree, is very different from a 19-year-old student who left school six months ago with a 3.0 GPA, suffering from health issues related to academic stress and lack of community support.[13]

ReUp Education has found that students often return to college to "finish what they started" or to achieve a personal goal of earning a college degree. This commitment to personal, educational, or career goals is consistent with the literature on the predictors of college persistence when students first start college.[14] While career considerations are certainly important, the forces leading students to reenroll often include social and emotional reasons as well. Just as students who stop out have different reasons for leaving school, they have varied motivations for considering a return. Advisors need to understand these circumstances and be able to speak to each student in a nuanced way, then offer the appropriate personalized path forward.[15] The literature contains many examples of institutions trying to reengage stopouts to return by targeting subpopulations of college stopouts. But without knowing what motivates students to return to school and the institutional barriers they face, institutions may focus on the wrong things.

Study Design, Data Sources, and Key Definitions

The primary objective of this research is to better understand the reenrollment behavior of Boston Public School (BPS) graduates who had stopped out of BHCC or UMass Boston. Previous research demonstrates that the decisions to stop out and then return to school are based on a complicated set of academic, financial, personal, and institutional factors.

The study combined quantitative and qualitative research methods. The research team first identified a study sample of BPS graduates from the Classes of 2010 to 2016 who initially enrolled at BHCC and UMass Boston and stopped out of college one or more times. To gather more contextual information on stopouts' personal situations, motivations, and experiences that may have influenced their decision to stop out and why they reenrolled or did not reenroll after stopping out, the research team designed a survey and sent it to the full study sample. Using a combination of administrative and survey data, we then created separate analytic models to identify important predictors and patterns of reenrollment. Concurrent with the predictive modeling work, we conducted 29 in-depth interviews with stopouts who completed the survey to gain a deeper understanding of their experiences in college and after stopping out. **Chart 1** below displays how these data sets were combined and used in this study. This study was approved by Institutional Review Boards at both UMass Boston and BHCC and consent for survey data collection as well as permission to link survey and administrative data was obtained from all students whose data we used in the development of the analytic models. A more detailed description of the data sources, definitions, and sample sizes follows.

CHART 1

Study Design and Process

Administrative Data Gathering, Stopout Identification

Survey Development, Recruitment and Data Collection

In-Depth Interviews from Stopouts within Segments Identified in Administrative Data

Modeling Stopout Reenrollment Based on Survey Data and Administrative Data

This process was done independently and separately for both UMB and BHCC.
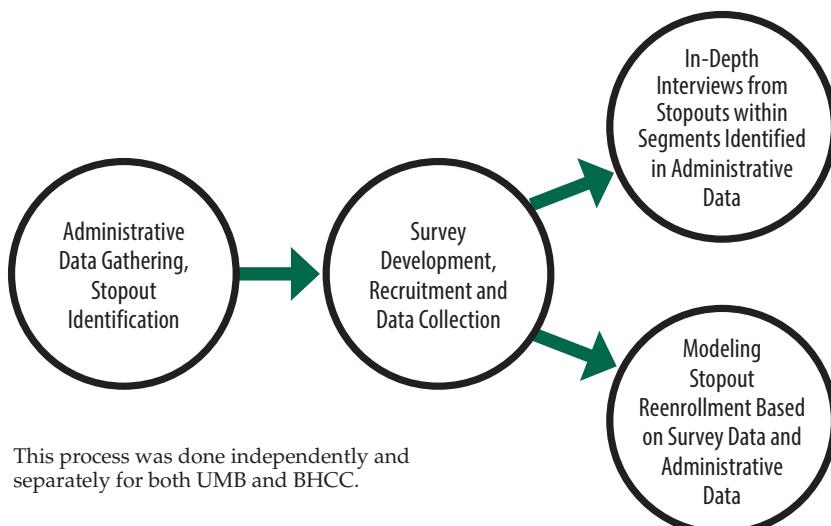
ADMINISTRATIVE DATA

This study utilized administrative data from UMass Boston and BHCC as well as information from the PIC on BPS graduating classes, the National Student Clearinghouse (NSC), and the Boston Foundation's Success Boston coaching services database. The combined longitudinal data file provided a comprehensive view of students who had stopped out.

To create the file, the PIC analyzed the college enrollment patterns of BPS graduates who first enrolled at BHCC or UMass Boston at some point after high school graduation. The NSC's Student Tracker for High Schools report was provided to the PIC by BPS. The Student Tracker report captures 99% of enrollment at all types of colleges and universities in the U.S.[16] This allowed us to track semester-level enrollment for BPS graduates at BHCC and UMass Boston and their transfer (if any) to other institutions in the NSC system during the study period. Specifically, semester-level enrollment data were used to categorize students as continuously enrolled or as having had a semester (or more) break in enrollment.

A continuously enrolled student is defined as a student who enrolls in every fall and spring semester following initial enrollment in college through degree completion or through the spring 2019 semester. As mentioned earlier, a stopout is defined as a student who takes one or more fall or spring semesters off from the time of initial enrollment to completing a credential or degree by the early fall 2019, which is the end point of our analysis. This stopout definition includes students who took one or more semesters off and reenrolled in any college and those who did not reenroll during the time period of our analysis. It also includes students who stopped out of college multiple times.

The original sample of stopouts, based on NSC records, consisted of:

- 1,898 Boston Public School (BPS) graduates from the Classes of 2012–2016 who first enrolled in BHCC and stopped out at some point before the fall of 2019. These students either reenrolled and completed their postsecondary credential, were currently working toward it, or had not yet reenrolled by the fall of 2019.

- 633 Boston Public School (BPS) graduates from the Classes of 2010 to 2016 who first enrolled at UMass Boston and stopped out at some point by the fall of 2019. These students either returned and completed their degree, were currently working toward it, or had not yet reenrolled by the fall of 2019. Smaller numbers of BPS students enrolled annually at UMass Boston during the study period, so the high school classes of 2010 and 2011 were included in the UMass Boston sample to ensure a sufficient sample size for survey and modeling objectives.

Upon receiving IRB approval, BHCC and UMass Boston provided administrative data on these students' academic experiences (GPA, course credits, semesters enrolled, major, degree outcomes), receipt of financial aid, and contact information for survey outreach. We requested specific socioeconomic and academic experience variables that were found to be predictive of stopping out in the research literature to see the extent to which they played a role in predicting reenrollment.

A small percentage of students (less than 1.5%) at each school were not found in the institutional data, withdrew before completing a full semester, or were determined to not be a stopout based on a second review of college administrative and NSC data. These students were not included in the study sample. In addition to the college administrative data, the Boston Foundation provided Success Boston coaching participation data to identify those who had been coached and this participation data was linked to the administrative data received from the colleges to include in the reenrollment modeling analysis.

SURVEY DESIGN, ADMINISTRATION, AND COLLECTION

The purpose of the survey was to supplement the administrative data with student-centric data to better understand financial, academic, personal, and other factors that might influence a student's decision to reenroll once they had stopped out. The research literature demonstrates the importance of including these non-academic factors in models to understand who is at risk for stopping out and who is likely to return. We reviewed concepts and questions from other surveys looking at college stopouts, including the Public Agenda's "With Their Whole Lives Ahead of Them," and Rutgers University's Former Student Opinion Survey. A final survey was created with questions divided into six sections.

1. Problems/reasons for stopping out (including academic/school related, personal reasons, other reasons)

2. How things were going before stopping out (including home and work life situation, feelings about campus, and financial situation)

3. Current life situation (school, home, and work)

4. For those who reenrolled: Factors that influenced their decision to return to school

5. For those who did not reenroll: Feelings and thoughts about returning to school

6. Demographic questions

The instrument was designed to ask about either UMass Boston or Bunker Hill Community College. Students were sent an email explaining the survey along with a link to complete the survey online. Reminder emails were sent to those who did not respond. Where possible, telephone calls and text reminders were also used to encourage eligible students to participate in the study. A small number of non-responders were mailed a paper version of the survey. Students who completed the survey were given a $15 gift card as a token of appreciation.

Survey respondents were asked permission to combine their survey answers with their administrative data. Almost all respondents gave permission. **Table 1** displays the response rate for each college along with the gender, race-ethnicity and key background, work, and enrollment characteristics of respondents who consented to combining their survey and administrative data. Of the 602 UMass Boston students who were eligible, just under 18% or 106 completed the survey and consented to link their survey and administrative data. For BHCC, the survey completion was 12% or 219 of 1,856 eligible completed. Appendix Tables A-1 and A-2 compare the demographic and reenrollment status of survey respondents to the target population of stopouts eligible for our study at each institution.

TABLE 1
Survey Response Rates and Demographic and Educational Characteristics of Respondents

	UMass Boston	BHCC
Eligible sample (after matching to institutional records and obtaining contact info)	602	1,856
Completed surveys for analysis*	106	219
Response Rate	17.6%	11.8%
GENDER		
Male	43.4%	38.4%
Female	56.6%	57.5%
Genderqueer/Gender non-conforming/Other	—	4.1%
RACE/ETHNICITY		
Latino or Hispanic	31.1%	48.4%
Black, non-Hispanic	30.2%	35.2%
White, non-Hispanic	7.5%	5.9%
Asian/Pacific Islander, non-Hispanic	21.7%	2.3%
Other, non-Hispanic	9.4%	8.2%
Highest level of education of parent(s)/guardian(s): Associate degree or higher	32.1%	13.2%
Worked 21+ hours/week before stopping out	59.4%	74.9%
Reenrolled after stopping out	68.9%	64.8%
Stopped out more than once	46.2%	22.8%

*Two UMB students completed a survey but did not consent to linking their survey and administrative data. They were excluded from the analysis. Nine survey respondents from BHCC were excluded for various reasons, including but not limited to not consenting to linking their data and determining that they were not eligible because they did not meet the definition of a stopout in this study.

Modeling Analysis: Findings on Predictors of Reenrollment

I n this section, we describe the findings from the analytic models developed for predicting reenrollment. Given differences in administrative data structure, content, and availability across institutions, we developed separate analytic models for predicting reenroll among stopouts from UMass Boston and BHCC, using the linked survey and administrative data of the 106 UMass Boston and 219 BHCC survey completers, respectively. Each separate model was constructed using a two-phase approach including: i) variable selection – to identify the most relevant variables in the data set; and ii) construction, validation and tuning of the prediction model. Appendix B provides a detailed description of the model development methodology.

UMASS BOSTON MODEL

The modeling analysis for UMass Boston began with 42 variables from the comprehensive set of administrative and survey data. In phase one, the variable reduction models identified eight variables that were the most important candidates for the final model for predicting whether a UMass Boston stopout in our sample would reenroll. We note that the eight variables were selected based on conditional importance scores, which indicate the degree to which the variable itself, or in conjunction with other variables taken together, helps the model to accurately predict reenrollment status. The eight variables are listed in **Table 2**. Four of the variables are derived from the survey data while the remaining four came from administrative records.

TABLE 2
Top Variables for Consideration in Final Reenrollment Prediction Models
Stopouts from UMass Boston

Variable	Data Source
Parent's highest level of education (associate's or higher)	Survey
Cumulative GPA before stopping out	Administrative
Cumulative credits earned before stopping out	Administrative
Status as an upper-classman	Administrative
Whether or not convenience of class schedule was a factor in returning	Survey
Whether or not availability of financial aid was a factor in returning	Survey
Whether or not students had two or more jobs before stopping out	Survey
Number of semesters enrolled before stopping out	Administrative

In phase two of model construction three of the eight variables were retained as predictors for explaining patterns in reenrollment. The three predictors were a parent's highest level of education, cumulative GPA before stopping out, and cumulative credits earned before stopping out. The findings in Charts 2-4 below describe their association with reenrollment status. Taken together, these three variables in our final model correctly predicted the reenrollment status of 78% of respondents.

Prior research has found that first-generation college students are less likely to persist and complete college than children of college-educated parents. In the stopout student survey, we asked stopouts about their parent's highest level of educational attainment. Non first-generation students who stopped out, those whose parents had an associate's degree or higher, had a reenrollment rate that was 28 percentage points higher than the rate of first-generation stopouts (i.e., those whose parents had not completed an associate's degree or higher) (**Chart 2**).

Based on the final prediction models, two key academic variables, stopouts' grade point averages (GPA) and their cumulative credits earned were found to be predictors of future reenrollment. Charts 3 and 4 display the median GPA and credits earned by stopouts' reenrollment status. The median GPA of reenrollees before stopping out was 2.46 compared to 1.95 for those who did not reenroll (**Chart 3**).

CHART 2
Reenrollment Rates Based on Stopouts' Parent's Highest Level of Educational Attainment
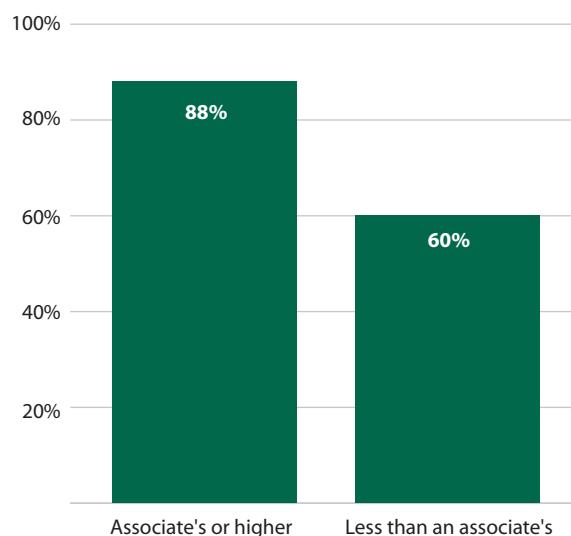
Notes: Parent's education: $X^2(1)=8.757$; p-value<0.0

CHART 3
**Median Cumulative GPA by Reenrollment Status**
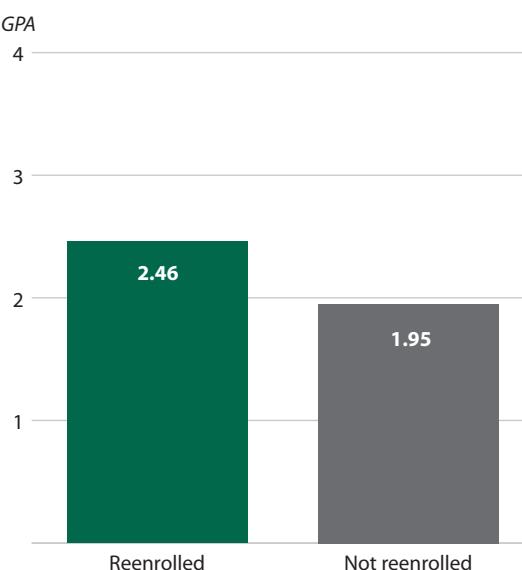
CHART 4
**Median Credits Earned by
Reenrollment Status**

*# of
credits*
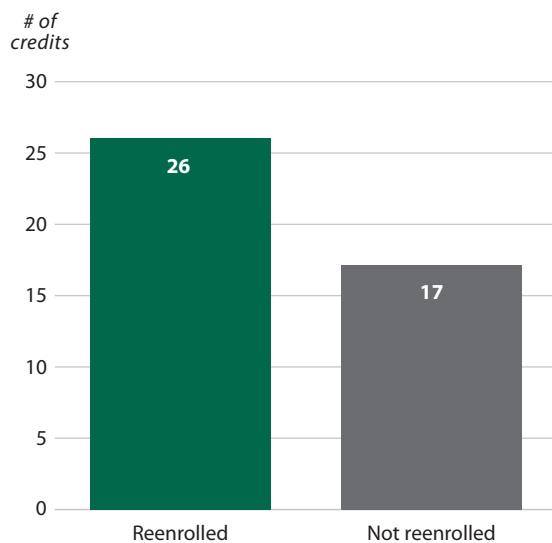
The median cumulative credits earned before stopping out was 26 for reenrollees compared to 17 for those who did not reenroll (**Chart 4**).

An important advantage of the final classi-fication model is that it allows us to show how these variables, in conjunction with one another, help predict reenrollment outcomes. For example, a first-generation stopout is less likely to reenroll than a stopout who has a parent with a college degree. However, if the first-generation student has earned more than 19 cumulative credits before stopping out, their predicted reenrollment rate rises. Further, if that same first-generation student has a GPA above a 2.0 before stopping out, their predicted reenrollment rate is similar to that of non–first generation stopouts.

PROFILES OF UMASS BOSTON STOPOUTS
BASED ON ACTUAL REENROLLMENT STATUS

Finally, we asked stopouts who reenrolled to identify a list of factors associated with their decision to reenroll. Similarly, we asked stopouts who did not reenroll to identify the factors in their decision to not continue. **Chart 5** displays how personal, education/career, institutional, and financial factors were associated with specific positive and negative reenrollment decisions of stopouts who reenrolled and those who did not, respectively. Among those who reenrolled, 30% indicated that financial aid and, specifically, that they received more aid, was a factor in the decision to return, compared to 52% of the stopouts who did not reenroll and indicated that financial costs were reasons for not going back. On needing a degree for the future, 36% of reenrollees indicated it was a factor in their decision to return. For those who did not reenroll, 30% stated that they did not need a degree for the future and 39% indicated that they had figured out a future direction. Stopouts who did not reenroll were also more likely to state class scheduling reasons and their sense of belonging on campus as factors in their decision to not return to school. These profiles help identify the reasons driving stopouts' decisions to reenroll and inform interventions and changes in policies and practices.

CHART 5
Examining Profiles of UMass Boston Stopouts by Reenrollment Status

percentage
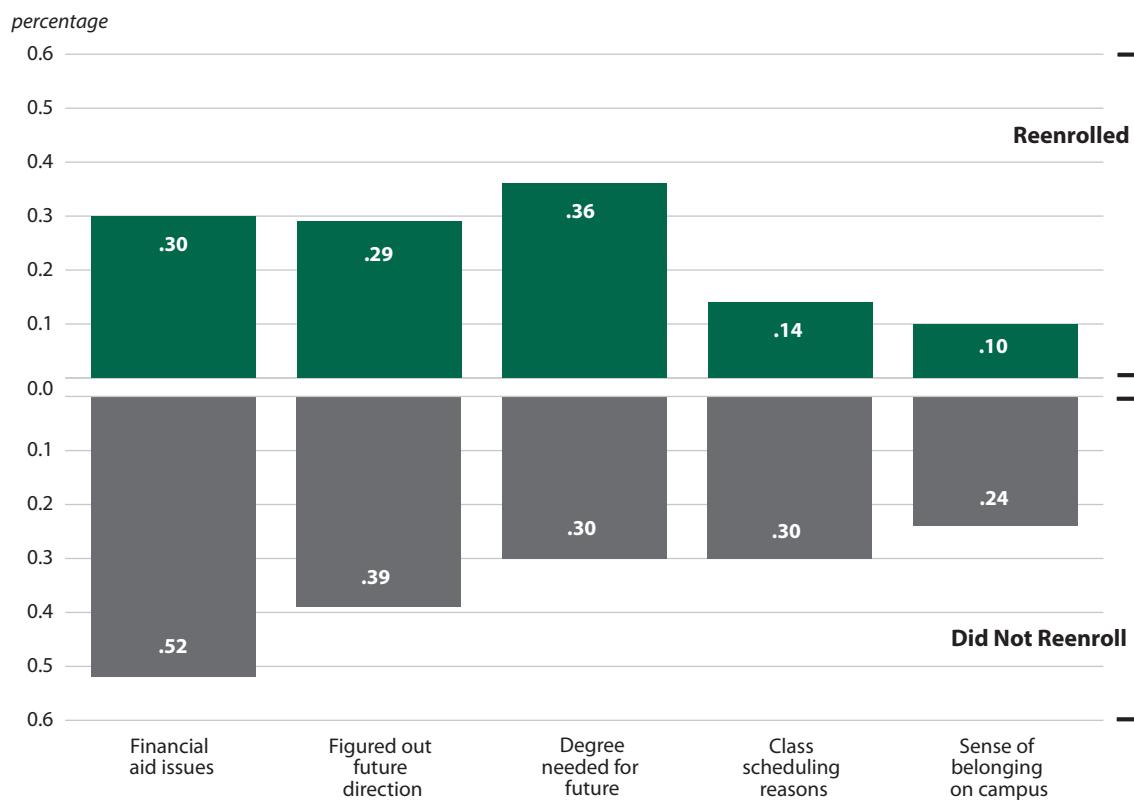
BHCC MODEL

The BHCC modeling analysis began with 46 variables based on administrative and survey data. In phase one, the variable selection models identified 15 variables that were the most important candidates to include in our final models for predicting reenrollment. The 15 variables are in **Table 3**. Similar to the findings from UMass Boston, about half of the variables are from survey data. In phase two of this modeling analysis, five variables (bolded in Table 3) were retained in our final model predicting reenrollment. They were cohort group, cumulative credits earned before stopping out, proportion of terms in a learning community before stopping out, sense of belonging on campus, and personal health. Taken together, these five predictor variables in our final model were able to correctly classify about 79% of our BHCC respondents into reenrollment status. The descriptive findings below explain their association with stopouts' reenrollment status.

TABLE 3
Top Variables for Consideration in Final Reenrollment Prediction Models
Stopouts from Bunker Hill Community College

Variable	Data Source
Cohort group (based on initial enrollment in college)	Administrative
Is a degree needed for future career goal?	Survey
Was feeling like you didn't belong influencing your decision to leave?	Survey
Proportion of terms before stopping out enrolled in a learning community	Administrative
Cumulative GPA before stopping out	Administrative
Whether or not availability of financial aid was a factor in returning	Survey
Cumulative credits earned before stopping out	Administrative
In good academic standing before stopping out?	Administrative
Was getting into class you wanted to take a factor in influencing your decision to stop out?	Survey
Number of semesters enrolled before stopping out	Administrative
Was coordinating school and work schedule an issue when you decided to stop out?	Survey
Were big classes an issue when you decided to leave?	Survey
Was first enrollment at BHCC during a fall term?	Administrative
Was your health a factor in deciding to stop out?	Survey

The final model found that high school class cohort was an important predictor of reenrollment status. Earlier cohorts were much more likely to reenroll (**Chart 6**). The reenrollment rates for the Classes of 2012 and 2013 and 2014 and 2015 were 76% and 72%, compared to only 33% for those from the Classes of 2016 and 2017. A high share of the 2016 and 2017 cohorts would have stopped out just before our period of analysis ended. Their reenrollment rates will likely rise over time as more stopouts decide to reenroll.

Similar to the final model results for UMass Boston, the BHCC model found that cumulative credits earned before stopping out is a strong predictor of reenrollment. Median credits earned before stopping out for those stopouts who later reenrolled were 15 credits, compared to nine credits for those who did not reenroll (**Chart 7**).

The final model identified that the proportion of a student's academic terms with a learning community course was important for predicting reenrollment. Students first attending BHCC between 2012 and 2018 could have participated in two kinds of learning community courses— learning community seminars (3 credits) required of all degree-seeking students in their first semester and course clusters that are either aimed at accelerating progress through developmental courses or at exposure to careers and industry sectors. The variable used in the model included enrollment in both kinds of courses. Stopouts who reenrolled had a lower proportion of semesters enrolled in a learning community course before they stopped out compared to those who did not reenroll. Students who had a higher proportion of terms enrolled in a learning community course

CHART 6

Reenrollment Rates by Class Cohort Group

%
reenrolled

Chart 6: Reenrollment Rates by Class Cohort Group. Bar chart showing 2012-2013: 76%, 2014-2015: 72%, 2016-2017: 33%.
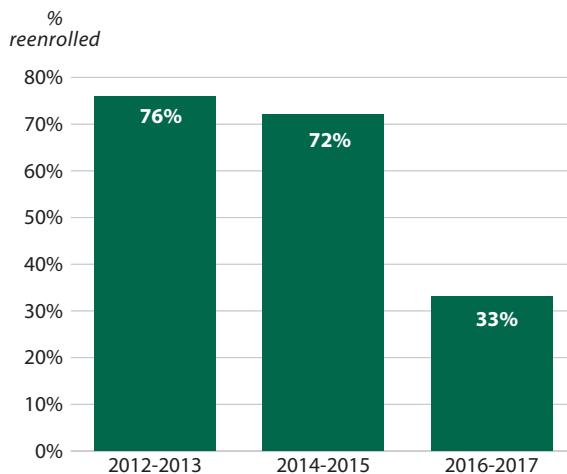
Note: X²(2)=26.779; p-value<0.0001

CHART 7

Median Cumulative Credits Earned by Reenrollment Status

of
credits

Chart 7: Median Cumulative Credits Earned by Reenrollment Status. Bar chart showing Reenrolled: 15, Not reenrolled: 9.
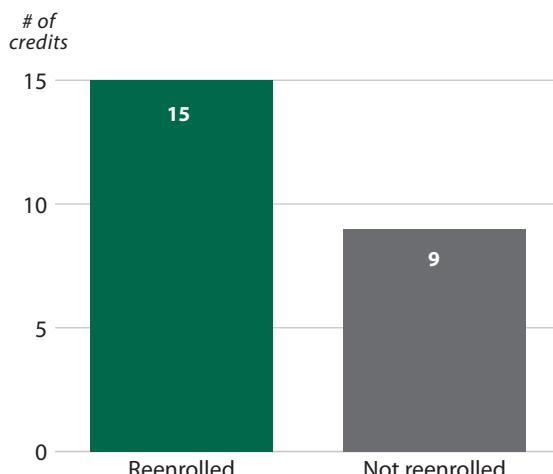
would likely be taking developmental English and math courses in their first year or two of college and may have been at higher risk of not completing college.

Two survey variables were also found to be important for predicting reenrollment. Stopouts were asked about their sense of belonging on campus and their personal health before stopping out. Among those who said sense of belonging was not an issue before stopping out, 74% reenrolled compared to 47% of those who stated that it was an issue, a difference of 27 percentage points (**Chart 8**). Stopouts who experienced a health problem before stopping out were more likely to reenroll compared to those who did not report their health being a problem. Among those reporting a health problem, 68% reenrolled compared to 63% who did not report a health problem. This result seems to suggest that in the case of health problems, the decision to stop out may be temporary pending improvement in health.

In the final modeling phase, a classification model allows us

CHART 8

Reenrollment Rates by Whether Sense of Belonging or Personal Health Were Problems Before Stopping Out

%
reenrolled

Chart 8: Reenrollment Rates by Whether Sense of Belonging or Personal Health Were Problems Before Stopping Out. Bar chart. "Was feeling like you didn't belong on campus a problem?": 74% and 47%. "Was your health a problem before you stopped out?": 63% and 68%.
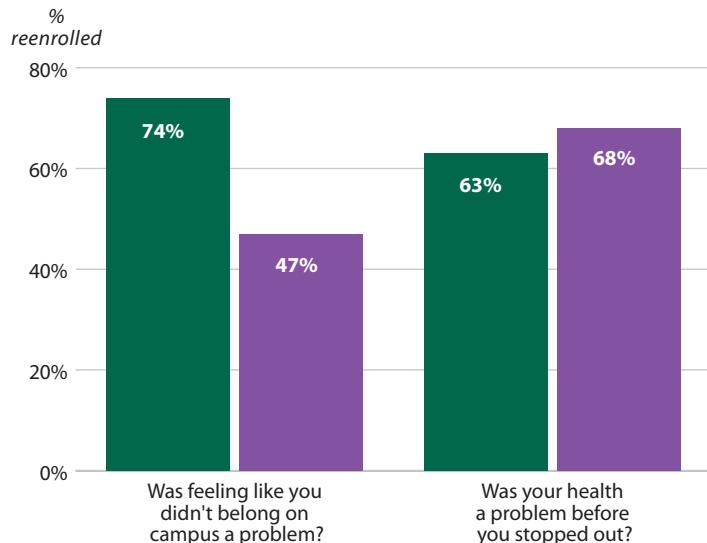
Note: Sense of Belonging: X²(1)=16.097; p-value<0.0001;
Health: X²(1)=0.561; p-value=0.454

to see how these five variables, in conjunction with each other, can help predict reenrollment status of stopouts. For example, a stopout from a more recent high school class cohort (Class of 2016) has a lower reenrollment rate than a peer from an earlier high school class, on average. However, when combining their cohort with credits earned before stopping out, the 2016 graduate has a much higher probability of reenrollment if they have earned more than 14 credits before stopping out compared to stopouts in their cohort who earned less than 14 credits before stopping out. Similar interactions occur when examining stopouts' cohort, proportion of terms in a learning community, feelings of belonging, and personal health with some variables having a moderating effect on others.

PROFILES OF BHCC STOPOUTS BASED ON ACTUAL REENROLLMENT STATUS

Finally, as was the case with UMB stopouts, we asked BHCC stopouts who reenrolled to identify which factors were associated with their decision to reenroll. Similarly, we asked stopouts who did not reenroll to identify the factors influencing their decision to not continue their education within the next 12 months. **Chart 9** displays how personal, education/career, institutional, and financial factors were associated with specific positive and negative reenrollment decisions of stopouts who reenrolled and those who did not, respectively. Among reenrollees, 46% stated that needing a degree for the future was a factor in in their decision to reenroll, compared to 19% for those who did not reenroll. Of the reenrolled, 23% or nearly one in four cited classes now fitting their schedule as a reason for coming back to school. This suggests that some students were able to make changes to their schedule or their college created more flexible course options. Among those who did not reenroll, 34% stated financial aid and cost issues were a factor in deciding not to reenroll.

CHART 9

Examining Profiles of BHCC Stopouts by Reenrollment Status
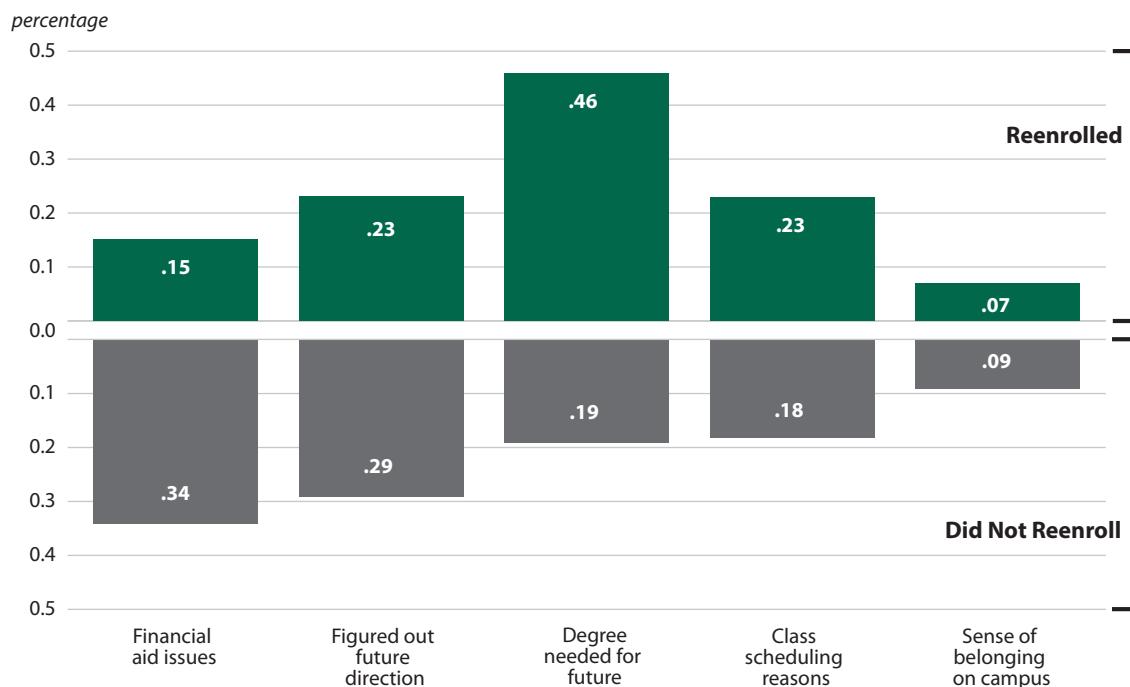
Interviews with Students on Their Experiences: Summary of Findings

To further understand the complex set of factors that impact the experiences of stopouts, UMass Boston's Center for Survey Research conducted in-depth individual follow-up interviews with a small sample of survey respondents. We used administrative data to divide the survey respondents into groups based on academic and reenrollment variables. We then recruited from these groups to make sure the in-depth interviews generally represented the experiences of the full sample of survey respondents. Interviews were conducted with 12 respondents from BHCC and 17 from UMass Boston, for a total of 29. While the survey asked closed-ended questions that allowed us to analyze the group as a whole, these in-depth interviews gave us a more personal understanding of what phrases like "not feeling you belong on campus" or "financial aid issues" actually meant to respondents. The summary below provides an analysis of the themes raised by BHCC and UMass Boston stopouts in the interviews.

When asked about reasons for stopping out, the interviewees talked about several factors, including academic problems, personal/health reasons, financial concerns, experiencing a lack of connection on campus, and difficulty navigating school resources. Several shared that they had poor grades in their early semesters and were on academic probation, which eventually led to their leaving school. While some interviewees noted that they felt academically unprepared for college-level coursework, others said that the coursework (especially in core subjects) seemed like an extension of high school classes, which they didn't think would help them with their career goals.

Several of the stopouts, including those who reenrolled, noted that they were mentally or emotionally not ready to commit to their college program or they had personal issues they needed to handle that took precedence over school. Personal issues included health and mental health challenges as well as family emergencies and crises. And, while the survey asked about affordable and reliable childcare, what some of the respondents wanted to discuss was that they took time off to have their child. Interviewees reported that taking time off from school allowed them time to address these kinds of issues.

In terms of support that colleges could provide, we found a variety of opinions. Some interviewees indicated that they didn't think the college could have helped them or prevented them from stopping out. They described having to take a break to address their own personal situations. Others wished there had been more support available to them from a coach/advisor or wished they had used (or known about) some of the resources that were available through the school. Although we found out in the survey whether a respondent had talked to professors or advisors before they stopped out, we learned in these interviews that some who had tried to get school resources felt that the services seemed to lack a personal approach and that each time they went in for help

different advisors/counselors would speak with them. A personal coach/advisor was mentioned as a way to provide more regular support as well as a single contact for students to go to for help and guidance.

Financial issues were a major reason for stopping out for many respondents. In the interviews, we found that it wasn't only the cost of school or getting to campus, but that these costs were just part of the problem. Many were working a lot of hours to support themselves and would get in trouble academically due to missing classes or assignments. Respondents talked about missing financial aid deadlines and then being stuck. They left school to focus on work and financial needs. Some reenrolled when they were able to get more financial aid. Others took time off to make money so they would have enough money to return to school.

In summary, the interviews confirmed that personal, academic, financial, institutional, and life factors played important roles in students' decisions to stop out of school. They were also important factors in their decision to reenroll. Many were able to resolve personal issues and return to school. In fact, several interviewees felt that they were able to reenroll with a renewed sense of purpose and felt confident that they would persist through degree completion.

Discussion and Implications for Practice

The economic returns on going to college are highest for those who complete a credential or degree. However, the path from initial enrollment to college graduation is not a continuous one for many students. This is particularly true for college students attending two-year public colleges, non-residential colleges or universities, and for those mixing part-time and full-time enrollment. It is important to recognize in this research that not every student who stops out wants to return to their chosen degree path while others may not be able to return even if they want to complete a degree. Improving our knowledge about why students stop out and what it takes to reengage and graduate those who desire to return is important for increasing postsecondary degree attainment.

Similar to findings on predictors of college persistence, this research confirmed the need to also integrate administrative and student survey data to identify the most predictive factors for reenrollment. While demographic variables like race and gender can reveal disparities in reenrollment rates, their predictive power decreases when more temporally relevant factors can be used that are specifically related to student experiences and performance while enrolled. We see this again here in our models. After accounting for specific academic-related variables along with personal, contextual factors relating to the time when a student stopped out, we found that the importance of demographic variables became less pronounced. Interview findings with stopouts provided further evidence of the influence of non-academic reasons on students' decisions to withdraw and return to college. One demographic background variable, parent's highest level of educational attainment, was associated with reenrollment behavior of stopouts attending UMass Boston. This finding is consistent with previous research on the experiences of first-generation students at four-year colleges and universities.

In addition to confirming the power of combining student survey data with administrative data, the study also illuminated some of the challenges in doing so. Data on key demographic background variables such as first-generation status is collected from several sources—the Common Application, FAFSA, and entering student surveys; however, the definitions used vary. Having a standard definition that is used across each would improve institution's ability to identify their first-generation students. Some of the survey variables used in this research could be captured through an enrollment survey that students complete as part of the matriculation process. Others would need to be included in student climate surveys or in a specific survey targeting students who have taken one or more semesters off from college. These surveys should capture information on students' current personal/health, work and home life, and financial situations as well as institutional barriers to their success.

This research also reinforced the challenges associated with getting students to respond to surveys and participate in interviews, especially students who are no longer engaged with the institution.

This was particularly a challenge at BHCC where reenrollees are overrepresented in the sample of survey respondents–65% of the survey respondents had reenrolled after stopping out compared to 41% of the larger stopout sample. Males at both institutions were underrepresented in the survey respondents. The findings may not fully capture all of the factors influencing males at both institutions and stopouts who have not reenrolled at BHCC.

Given the range of reasons that can influence student's decisions to stop out and return, colleges and nonprofit organizations providing student support services need to have a comprehensive set of strategies and policies to increase reenrollment. Data analytics that incorporate administrative and survey data can help colleges segment their own stopout populations to better target interventions. The student who has completed only two semesters will likely need a different set of supports than the one who is one semester from completion. Both models found that credit accumulation was predictive of reenrollment and that credit accumulation moderated the influence of other factors. This is consistent with the literature on academic momentum.

The research reinforced the need for increased financial, health, and wellness supports—for example, financial aid was a reason for not returning for 52% of the UMass Boston and 34% of the BHCC stopouts who had not reenrolled. There is increased urgency to boost efforts in this area as more students have stopped out during the COVID-19 pandemic and are experiencing serious economic and health challenges. The research also reinforced the need for the institutions to look at the ways and extent to which the culture fosters a sense of belonging for students and at class scheduling options that provide flexibility for students who have to balance work and family schedules with school.

In recent years, colleges have responded with increased supports to ease the reenrollment transition for stopouts; they have also changed institutional polices to remove barriers to reenrollment. The research literature suggests several strategies for bringing stopouts back to school and for supporting them once they return, including:[17]

- Extra support to students with discontinuous enrollment histories, including dedicated advisors or "completion concierges" whose job is to find students the clearest, shortest, most efficient path to a degree;

- Scholarships for students who have exhausted their eligibility for federal student aid;

- Considering the amount of debt owed when a student defaults on a student loan, and issuing "microgrants" or "completion grants" or offering loan forgiveness to encourage students to return to school and finish their degrees;

- Excluding prior Fs or Ds from the returning student's new GPA;

- Asking faculty to evaluate free online courses to help students gain credit for prior learning at the lowest possible price; and

- Realizing that life balance issues are the most common driver of stopping-out, not academics, and subsequently focusing attention on counseling centers or affordable child-care centers located near campus rather than scaling up writing centers and tutoring labs.

At the local level, UMass Boston and BHCC also are actively employing strategies to help bring former students back to campus. In 2020, UMass Boston launched a proactive campaign to reengage undergraduate students who had stopped out. Enrollment management staff outreached to nearly 3,000 students who had left the university over the previous five years and offered the opportunity for individual assistance via Zoom or phone meeting. UMass Boston's efforts resulted in an over 9% increase in reenrolled students for fall 2020 as compared to 2019. The outreach campaign is ongoing. UMass Boston has also prioritized raising emergency aid funds. BHCC has planned its own outreach and survey campaign.

BHCC has undertaken two major initiatives, which may address some of the factors that influence stopouts' decisions to both leave school and reenroll. BHCC's Halting Oppressive Pathways through Education (HOPE) initiative is designed to examine and eliminate the social, institutional, and academic barriers that often prevent males of color from achieving their full potential at BHCC and beyond. HOPE is a campus-wide initiative to uplift student voices around what is and is not working for young men of color on campus. It is run by a group of men of color faculty, staff, and administrators who are focused on driving institutional change through research, advocacy, and targeted peer mentoring. After the spring 2020 semester, an Institutional Research Department analysis revealed that the number of students receiving Incomplete Progress (IP) grades had more than doubled. HOPE student interns have been reaching out to students with incomplete grades after the spring and fall 2020 semesters to encourage and support them in earning a final grade in these courses. In 2020, BHCC administered the HEDS Diversity and Equity Campus Climate Survey, which asks students, faculty, staff, and administrators about their perceptions of their institution's climate, perceptions of how their institution supports diversity and equity, and experiences with discrimination and harassment at their institution. The lessons learned from these efforts could potentially lead to specific strategies to address factors that influence student's stop out and reenrollment decisions.

While not specifically designed for reenrolling stopouts, BHCC and UMass Boston also are part of the City of Boston's Graduate Ready to Achieve Degree (GRAD) initiative, which provides last mile funding to Boston students, including stopouts, who are near completing a degree but have a financial gap. Students are eligible to receive up to $2,500 for non-academic costs that are preventing them from completing their degree, and to help pay university costs, if no other university-based fund is available. This strategy is helping enrolled students persist through their final semester and is incentivizing stopouts to return and complete their degree requirements.

In conclusion, while there are many factors that impact a stopout's decision to reenroll, there is much that postsecondary institutions can do to increase the reenrollment of stopouts. Institutions can develop predictive models that couple survey and administrative data and provide a more nuanced understanding of which students are likely to reenroll, which are not, and the factors influencing them. Having a deeper understanding of the different segments of the stopout population will enable institutions to target outreach, services, and interventions. It will also enable them to identify and change policies and practices that negatively impact segments of the population and advance policies that incentivize and facilitate reenrollment.

APPENDIX A: SURVEY

The tables below provide a comparison of the demographic characteristics and reenrollment status of the survey respondents and the deligible sample universe for UMass Boston (A-1) and BHCC (A-2).

Gender, Race-Ethnicity, and Reenrollment Characteristics of Survey Respondents and the Eligible Sample of Stopouts

TABLE A-1

UMass Boston

Gender/ Race/ Reenrollment Status	UMass Boston Survey Respondents	Eligible UMass Boston Sample of Stopouts*
All	106	602
Male	43.4%	50.2%
Female	56.6%	49.7%
Genderqueer/ Gender non-conforming/ Other	—	—
Latino or Hispanic	31.1%	35.0%
Black, non-Hispanic	30.2%	27.8%
White, non-Hispanic	7.5%	13.0%
Asian/Pacific Island, non-Hispanic	21.7%	22.9%
Other	9.4%	1.2%
Reenrolled after stopping out	68.9%	72.1%

TABLE A-2

BHCC

Gender/ Race/ Reenrollment Status	BHCC Survey Respondents	Eligible BHCC Sample of Stopouts*
All	219	1,856
Male	38.4%	50.2%
Female	57.5%	49.7%
Genderqueer/ Gender non-conforming/ Other	4.4%	—
Latino or Hispanic	48.4%	40.5%
Black, non-Hispanic	35.2%	45.3%
White, non-Hispanic	5.9%	7.2%
Asian/Pacific Island, non-Hispanic	2.3%	5.8%
Other	8.2%	1.2%
Reenrolled after stopping out	64.8%	40.6%

*The race-ethnic categories are not directly comparable. Survey respondents were asked their Latino or Hispanic ethnicity as a standalone question and then could select a race. For the eligible sample, we relied on race-ethnicity provided in administrative records and did not ask Hispanic or Latino ethnicity separately.

APPENDIX B: ANALYTIC MODELS METHODOLOGY

This appendix provides a more detailed description of the random forest and classification tree modeling techniques used in this study to predict reenrollment. Models were developed separately for predicting reenrollment among stopouts from UMass Boston and BHCC, respectively. Each separate model was constructed using a two-phase approach including: i) variable selection to identify the most relevant variables in the data set; and ii) construction, validation and tuning of the prediction model.

Given that many of the variables we collected were correlated or associated with each other, we used conditional random forest models and the corresponding conditional importance measures to identify the most important variables for predicting reenrollment. Specifically, the variable importance measures were averaged from across five different conditional random forest models that were run using different random starts but using the same variables to predict reenrollment. Variables with average importance scores that exceeded the largest observed negative importance were retained and used in a classification tree model to predict reenrollment.[17] These tree models were pruned based on an exhaustive grid search to identify the optimal value of the complexity tuning parameter. The findings in the report show the list of variables (Tables 2 and Tables 3) that were most important for predicting reenrollment based on conditional importance measures. We then presented the findings for the variables that were retained in the classification tree model use to predict reenrollment.

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