RESEARCH BRIEF

Office of Policy Research

Transfer Application and Transfer Melt: Longitudinal Analysis of Students who Start in Associate Programs

Research Brief
Transfer Opportunity Proiect
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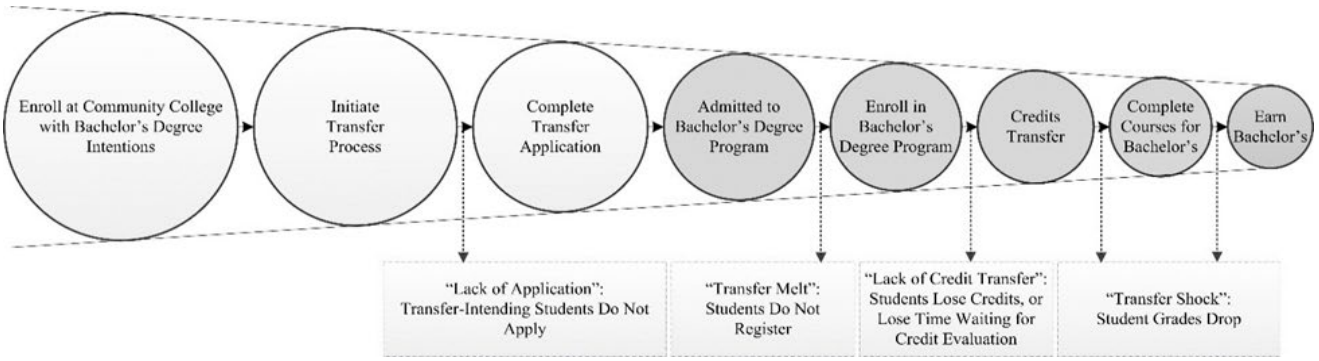
College transfer has grown to be extremely common in the United States. Approximately three out of every eight (38%) of United States college students now transfer between colleges at some point during their college careers (National Student Clearinghouse Blog, 2018). Transfer is also extremely common within The City University of New York (CUNY) system of colleges, which includes both associate degree-granting community colleges and four-year colleges that offer baccalaureate degrees (and higher). Each fall alone, more than 10,000 students transfer from one CUNY college to another, with more than two-thirds of these students transferring from a community college to a baccalaureate college. The transfer path from a community college to a bachelor's degree is, however, not smooth, and even though transfer numbers are high, many students who intend to transfer do not end up doing so (Sutcliffe & Condliffe, 2020). At the start of college, 87% of CUNY community college students say that their ultimate goal is to attain at least a bachelor's degree (C. Chellman, personal communication, February 8, 2021), but only 16% do so within six years of beginning college. Whether or not students realize it, their bachelor's-degree aspirations are consequential, because the median annual earnings of workers with bachelor's degrees are $15,000 higher than those of workers with only associate degrees, and over the course of a lifetime, individuals with a bachelor's degree earn about $200,000 more than individuals with an associate degree, even accounting for the increased costs of obtaining the bachelor's degree (Ma et al.,2019).

The Transfer Opportunity Project (TOP), funded by a grant from the Institute for Education Sciences (IES), explores the possible factors contributing to the low percentage of community college students who go on to earn bachelor's degrees. The project uses a combination of quantitative and qualitative research in the CUNY system of colleges to identify possible malleable factors related to four possible critical challenges in the transfer student pathway, and to study which factors offer promise for intervention. Figure 1 below illustrates the steps (shown by the circles) in transfer students' progress, from enrollment in a community college to receipt of a bachelor's degree, as well as the four possible critical challenges or "leaky pipeline points" (shown by the squares). The possible challenges include:

(1) Transfer-intending students who do not apply to transfer ("Lack of Application");
(2) Accepted transfer students who do not enroll or register ("Transfer Melt"; cf. "Summer Melt," high school students who are accepted to college but never enroll in the fall, Castleman & Page, 2014);
(3) Transfer students who lose credits or lose time waiting for credit evaluation ("Lack of Credit Transfer"); and
(4) Students whose grade point averages declines after transferring ("Transfer Shock," Hills, 1965).

The circles decrease in size from left to right to represent that there are multiple leaky points where students exit the pipeline from community college enrollment to bachelor's degree receipt, decreasing the number of students progressing through the pipeline.

Figure 1. Stages of the Transfer Pipeline



This study was funded by The City University of New York, and by Grant R305A180139–19 from the Institute of Education Sciences (IES) of the Department of Education (the contents of this paper do not necessarily represent the policy of the Department of Education, and endorsement by the Federal Government should not be assumed). Grant partner MDRC contributed to analysis plans and review.

One component of TOP is a longitudinal analysis of student data, which tracks the progress of students who entered a CUNY community college in Fall 2013 or Spring 2014 and determines the number of them who progressed past each major leaky point in the pipeline. This brief presents this analysis's descriptive findings related to the first two leaky pipeline points: Application to Transfer and Transfer Melt. We will present findings related to the third and fourth leaky pipeline points, Lack of Credit Transfer and Transfer Shock, in a subsequent brief.

In the current brief, we discuss the analytic decisions required to quantify how many students are lost at each point. We also compare the characteristics of students who persist past each point and those who do not. Thus, this brief's contents may be of interest to both college administrators who work with potential transfer students and to researchers focused on transfer.

Findings presented here are purely descriptive. As part of the broader TOP project, these findings will inform later quasi-experimental analysis and be synthesized with data from college student and staff surveys and focus groups to better identify possible malleable factors related to critical challenges along the transfer student pathway.

DATA

To conduct this longitudinal analysis, we constructed a dataset from several administrative sources. Using enrollment data, we defined our cohort of interest as all first-time freshmen (both full-time and part-time) who enrolled in an associate-degree program at one of CUNY's seven community colleges in Fall 2013 (N=17,455). (A comparison using the cohort that entered in Spring 2014 is included in the appendix.) This enrollment dataset contains semester-by-semester enrollment and graduation dates for the duration of these students' college careers. It is updated approximately once a year to include the most recent data; currently it contains data through Fall 2019. Onto this enrollment dataset we merged information on transfer applications to other colleges within the CUNY system. We scanned for every term after Fall 2013 to check if any student from our starting cohort applied to a bachelor's degree program through the central CUNY admissions process. Lastly, we added data from the National Student Clearinghouse on non-CUNY enrollment and graduation to capture outcomes for students who transferred outside of CUNY.

EARLY COLLEGE PERSISTENCE AND APPLICATION TO TRANSFER

As we describe in detail below, most of the students in our dataset who apply to transfer do so two to three years after they have entered community college. So, to examine the size of the pool of students likely to apply for transfer, we looked at how many students from the Fall 2013 cohort were still enrolled in community college in the early semesters of the longitudinal analysis (see Table 1). A total of 81.6% of students from the initial cohort were still enrolled in a CUNY community college in the second semester and 64.6% of students were still enrolled for a third semester. The size of our community college cohort thus started decreasing rapidly in the initial semesters of college. These rates of persistence are actually somewhat higher than national averages. According to the National Student Clearinghouse, 57.6% of all students who started in community colleges in fall 2013 returned to any college in the Unites States in fall 2014, and 46.9% returned to the same institution[1] (National Student Clearinghouse, 2015). Nevertheless, many CUNY students stopped out early in college, and this finding is an important reminder that many community college students struggle to navigate higher education even before encountering the complexities of the transfer process. One potential malleable factor to explore in promoting successful transfer could be better supporting community college students' academic momentum in their first year of college. In addition to uncovering a large point of potential leakage, the fact that many students leak out of the pipeline at its very beginning also has large implications for how we measure application to transfer (see next section).

[1] The rates of persistence for full-time students are closer to persistence rates at CUNY, which is consistent with the fact that an unusually high percentage of CUNY community college freshmen enroll full-time.

Table 1. Students from the Fall 2013 cohort who were still enrolled in CUNY community colleges				
	F13	S14	F14	S15
N	17,455	14,240	11,276	9,768
% of initial	100	81.6	64.6	56.0

The students who were still enrolled in community college in the second semester differed from those who stopped out in the first semester in several ways. As shown in Table 2, students who were still enrolled had higher high school GPAs and were less likely to have been assigned to remediation in any subject than students who stopped out. Those who were still enrolled were also more likely to be female and Asian or White, less likely to be Black or Hispanic, and more likely to be Pell recipients.[2] These findings are generally consistent with previous research on gaps in college retention between different student groups (Greene et al., 2008). We also see similar gaps between groups of students at later points in the pipeline between community colleges and bachelor's degrees.

Table 2. Characteristics of students in Fall 2013 cohort, by 2nd semester status (N= 17,455)			
	Baseline (N=17,455)	Still enrolled in CUNY community college (N=14,240)	Stopped out (N=3,010)
Demographic characteristics			
% female	52.9	54.1	47.1
% Asian	14.3	15.2	10.2
% Black	27.9	27.4	30.1
% Hispanic	43.6	42.8	47.6
% White	13.8	14.1	11.8
Mean age (college entry)	20.1	20.0	20.6
% Pell (college entry)	74.6	76.7	65.0
Academic preparation			
High school GPA	75.7	76.1	73.5
% assigned to remediation: any	73.2	72.0	79.4
" math	67.4	65.6	75.9
" reading	23.7	23.0	27.5
" writing	27.1	26.1	31.7

Note. The sum of those still enrolled in community college and those stopped out does not equal the baseline N because there were 205 students who were not in either category in the 2nd semester: 120 were enrolled in a 4-year college (CUNY or non-CUNY) and 85 were enrolled in a non-CUNY 2-year college. Missingness: Pell status is missing for 3,549 students (888 students with an award amount of zero are counted as not receiving Pell), high school GPA is missing for 3,991 students, and remediation assignment status is unknown for 1,667 students (these cases are treated as not being assigned to remediation).

[2] The finding that Pell recipients are more likely to persist than non-recipients might appear surprising because Pell eligibility is often used as a marker of low-income status. However, among this overwhelming low-income population, Pell receipt may actually reflect some positive selection in terms of the characteristics of students that allow them to complete the federal financial aid application, such as cooperative relationships with guardians or citizenship status. It also reflects the receipt of a substantial monetary benefit that supports college persistence (Reeves & Guyot, 2018).

Rates of application to transfer

We now turn to looking at steps in the actual transfer process. We find that at least 47% (N=8,126) of the students in our starting community college cohort applied for transfer to a bachelor's program—inside or outside the CUNY system—at least once within six years of starting at a community college.[3] As discussed above, many students stop out of community college in early semesters and are therefore not enrolled at a point at which they would be likely to apply for transfer. Transfer application rates among students who have persisted to later semesters are notably higher. Among students who persisted into a second semester of college (N=14,240), the percentage who applied to transfer rose to 57%, and 65% of students who have persisted into the fourth semester of college apply for transfer at some point (including those who have already transferred by the fourth semester and are no longer enrolled in community colleges at that point). The fact that rates of application to transfer are relatively high among students who have persisted several semesters into college suggests high levels of awareness of and interest in transfer to bachelor's programs among students who have found success in community colleges.

Overall, 81% of the students who transfer to a bachelor's program enroll at a baccalaureate college within the CUNY system, which means we are able to track enrollment histories and academic trajectories in detail for the large majority of all the students in our cohort who transfer.

[3] We have a CUNY application record for 5,460 of these students; for the remaining 2,666, we infer that they applied because they went on to enroll at a bachelor's institution (either within or outside the CUNY system). Of these 2,666, the 1,262 that are enrolled at a CUNY bachelor's institution likely applied in person on a college campus, rather than through the online central application system from which we drew application records for analysis. Our application figures somewhat underestimate the actual number of students who applied for transfer because we do not have a way to count students who applied to only non-CUNY institutions and did not enroll in any, or those who applied in person on a CUNY campus and did not ultimately enroll. In addition, in some previous terms, university admissions did not process a subset of applications received late in the term and so we do not have a count of these unprocessed applications. Approximately 21% of applicants applied for transfer in more than one term, which is related to the issue of transfer melt described below.

Table 3a. Fall 2013 cohort (N=17,455) at stages of transfer pipeline		
Stage in transfer pipeline	**Number of students who reach given stage**	**% who reach given stage, out of initial cohort**
Enrolled in CUNY associate programs	17,455	N/A
Total applied to bachelor's programs	8,126	46.6
Application record to CUNY bachelor's	5,460	N/A
Inferred application - record of enrollment at CUNY bachelor's	1,262	N/A
Inferred application - record of enrollment at non-CUNY bachelor's	1,404	N/A
Total enrolled in bachelor's programs (CUNY or non-CUNY)	7,239	41.5
Table 3b. Fall 2013 cohort (N=17,455) at stages of transfer pipeline, students with CUNY application record *only*		
Stage in transfer pipeline	**Number of students who reach given stage**	**% who reach given stage, out of those who reached previous stage**
Enrolled in CUNY associate programs	17,455	N/A
Applied to CUNY bachelor's programs	5,460	31.3
Admitted to CUNY bachelor's program	4,816	88.2
Enrolled in bachelor's programs (CUNY or non-CUNY)	3,979	82.6

Note. Some students applied in more than one term. For students who applied to a bachelor's program a second (or greater) time after having already been enrolled in a bachelor's program, we count only their initial application. Among students for whom we inferred application, 111 had a record of enrollment at both a CUNY and a non-CUNY bachelor's program. In these cases, we assigned them as inferred application to whichever enrollment occurred first. 231 students were potential "reactivates", i.e. students who didn't enroll in the term they applied for, but enrolled in the following term without submitting a new transfer application. In Table 3a, these students are counted in the "Application record to CUNY bachelor's" category and in Table 3b, they are counted as having applied and being admitted, but not as having enrolled.

Characteristics of applicants

Not surprisingly, students who applied for transfer to bachelor's programs differed from those who did not apply for transfer on various academic characteristics. Applicants on average had a higher high school GPA and were less likely to have been assigned to remediation upon entry to CUNY. Applicants were also much more likely to be female and more likely to Asian or White, and less likely to be Black or Hispanic, than non-applicants.

Table 4. Characteristics of students who applied for transfer vs. did not apply for transfer, Fall 2013 cohort (N= 17,455)

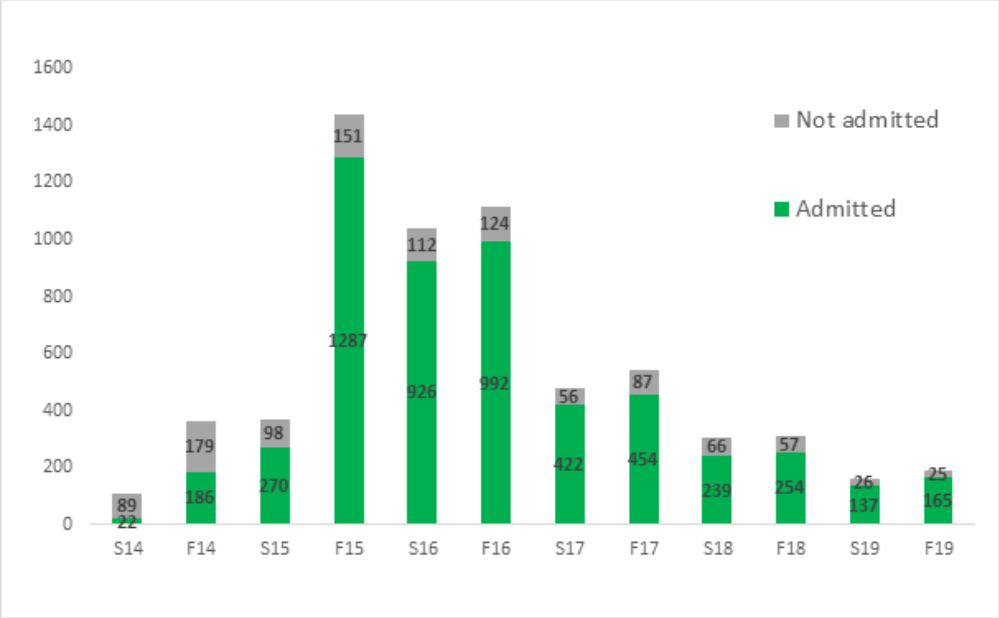
	Baseline (N=17,455)	Applied (N=8,126)	Did not apply (N=9,329)
Demographic characteristics			
% female	52.9	60.5	46.3
% Asian	14.3	17.3	11.7
% Black	27.9	26.0	29.7
% Hispanic	43.6	40.0	46.7
% White	13.8	16.4	11.6
Mean age (college entry)	20.1	19.6	20.5
% Pell (college entry)	74.6	74.3	74.9
Academic preparation			
High school GPA	75.7	77.6	73.9
% assigned to remediation: any	73.2	67.0	78.6
" math	67.4	59.6	74.1
" reading	23.7	20.1	26.8
" writing	27.1	21.8	31.8

Note. Missingness: Pell status is missing for 3,549 students (888 students with an award amount of zero are counted as not receiving Pell), high school GPA is missing for 3,991 students, and remediation assignment status is unknown for 1,667 students (these cases are treated as not being assigned to remediation).

Timing of applications

Among students for whom we have an application record to a bachelor's program, the most popular time of application is two to three years after entry to the associate program. As shown in Figure 2, the single most popular application term (where term refers to the semester in which applicants are seeking to start enrollment at the new college) is two years after starting at the community college (in this case, Fall 2015)--with 1,438 applications filed for that term. The following two terms (Spring 2016 and Fall 2016) are also popular, with over 1,000 applications each. Overall, students are more likely to apply for transfer for fall than for spring terms, with a total of 3,961 fall applications and 2,463 spring applications.

Figure 2. Transfer applications to CUNY bachelor's degree programs, by term: Fall 2013 cohort (Total N=6,424)



The application spike two years after entry may have been influenced by transfer admissions criteria. At CUNY baccalaureate colleges, applicants below a certain credit threshold (which varies by college and is generally 24 to 30 credits) are evaluated using the same high school GPA and SAT admission criteria as freshman applicants. Applicants above the credit threshold are reviewed differently and are instead evaluated based on their GPA in their college courses and the number of college credits they have completed. Generally, the more college credits the applicant has already earned, the lower the GPA a transfer college is willing to accept for admission.[4] The semesters in which large numbers of students apply for transfer coincide with the semesters in which large numbers of students have accumulated the credits required to be evaluated against the college, rather than high school, academic criteria.

The fifth and sixth terms are also the terms in which significant numbers of students start to earn associate degrees and therefore need to transfer if they wish to stay enrolled in college. We heard in TOP focus groups that college advisors start to engage students in planning for transfer as they get closer to community college graduation. Overall, 53% of transfer applications were submitted with the student having an associate degree.[5]

[4] Indeed, we see that the average GPA a student transfers with is lower in every subsequent semester. We will discuss this pattern more in the second longitudinal analysis brief, which covers GPA trajectories before and after transfer.
[5] Among applicants for Fall 2015, 54% held a CUNY associate degree. In subsequent application terms, the share of applicants who have a CUNY associate degree ranges from 55% to 70%.

Transfer admissions

CUNY allows transfer applicants to apply to up to four colleges using a single application, ranking their choices in order. We count this as one application because during the time period we observe here, an applicant could receive an admission offer from only one CUNY college, no matter to how many colleges a student applied in that application. If the applicant was admitted to their first-ranked college, their application was not reviewed by the student's lower-ranked colleges. If the applicant was not admitted to the first-ranked college, they were reviewed by the second-ranked college, and so on.[6] As shown in Table 3b, the large majority (88%) of applicants who applied to a CUNY bachelor's degree program were admitted to at least one of the bachelor's programs to which they applied.

TRANSFER MELT

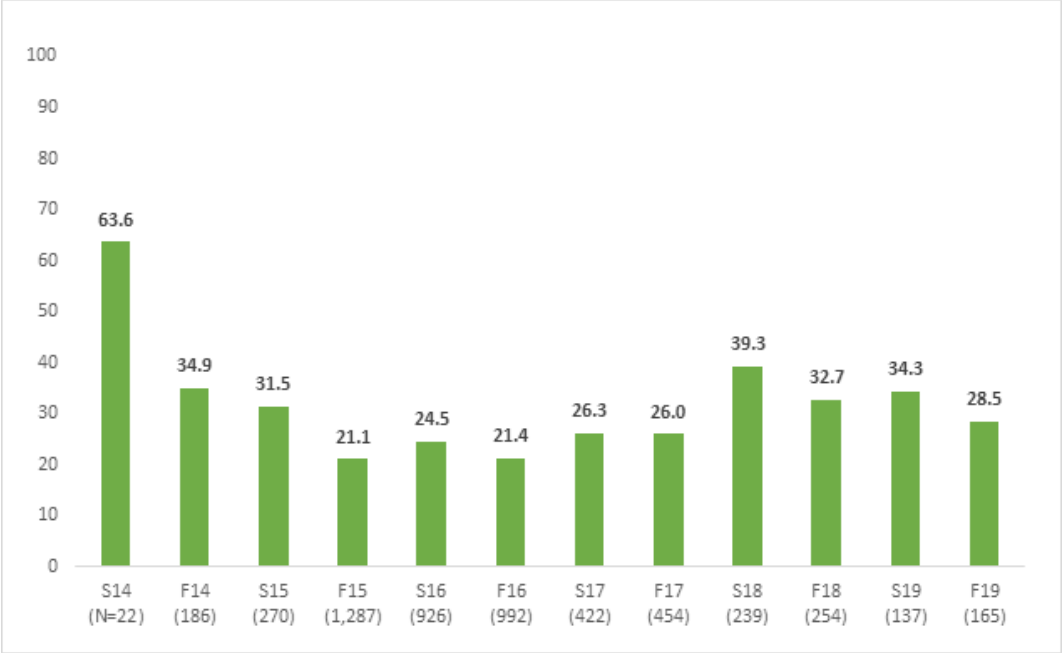
Rates of melt

As shown in Table 3b, of the 4,816 students who we know were admitted to a CUNY bachelor's program, 4,365 or 91% went on to enroll in a CUNY or non-CUNY bachelor's program at some point in our six-year tracking window, while 451 or 9% never did. An additional 386 students did not enroll in the first term for which they are admitted but went on to enroll in a later term. As shown in Figure 3, in any given term, 21% to around 39% of admissions to a bachelor's program did not result in enrollment (the first term is an outlier and has a small N). We refer to this outcome as transfer melt.

An important goal for the later stages of this project is to better understand why students who have applied and been admitted to bachelor's programs fail to enroll so that we can suggest interventions to support their enrollment. At this point we can observe that transfer melt appears to happen less during the terms in which transfer is most common: two to three years after entry to the community college. There are a number of possible reasons for this pattern, reflecting characteristics of the transfer process, characteristics of students, or interactions between students and the process. Transfer melt may be lowest in the second and third years because, given these are the most common points at which to transfer, these are also the points at which students are targeted with the most support and encouragement to transfer. Students who apply for transfer two to three years after entering community colleges may also be more likely to maintain full-time enrollment with no stop-outs than students who transfer later, whereas students who apply later may have more disrupted enrollment patterns generally. (It is also possible that the longer a student is in college, the more likely it is that aspects of their lives external to college will interfere with college persistence and prevent them from enrolling as intended.) Students who apply earlier may also be more motivated to enter bachelor's programs.

[6] This description holds for most of our period of analysis. Starting in Spring 2019, CUNY switched to a new admissions system. In this system, students can choose up to 10 colleges to apply to and receives an admissions outcome (admitted or not) for each choice.

Figure 3. Percentage who did not enroll in a bachelor's degree program (CUNY or other), of those admitted to a CUNY bachelor's program, by term: Fall 2013 cohort (Total N=5,354 applications)



Note. For students who applied in more than one term, their applications are represented in the chart for each term they apply. Enrollment status is determined based on the immediate term for which students applied.

We also see that transfer melt is higher for spring than for fall terms. This may be because the longer gap between terms over the summer may benefit students by giving them more time to make arrangements with their new colleges and allowing longer time for their credit evaluations to be processed. Given that the fall term is also when the large majority of first-time-freshmen start in bachelor's programs, there may be other ways in which starting college is easier or more attractive in the fall term.

Characteristics and trajectories of melters

Table 5 shows the characteristics of students who melted, compared to those who enrolled. Melters have a slightly lower mean GPA than enrollees (2.9 compared to 3.1) and have accumulated fewer credits (56.6 compared to 52.0 for enrollees). Melters and enrollees have the same gender breakdown, but melters are more likely than enrollees to be Black, less likely to be Asian or White, and more likely to be Pell recipients.

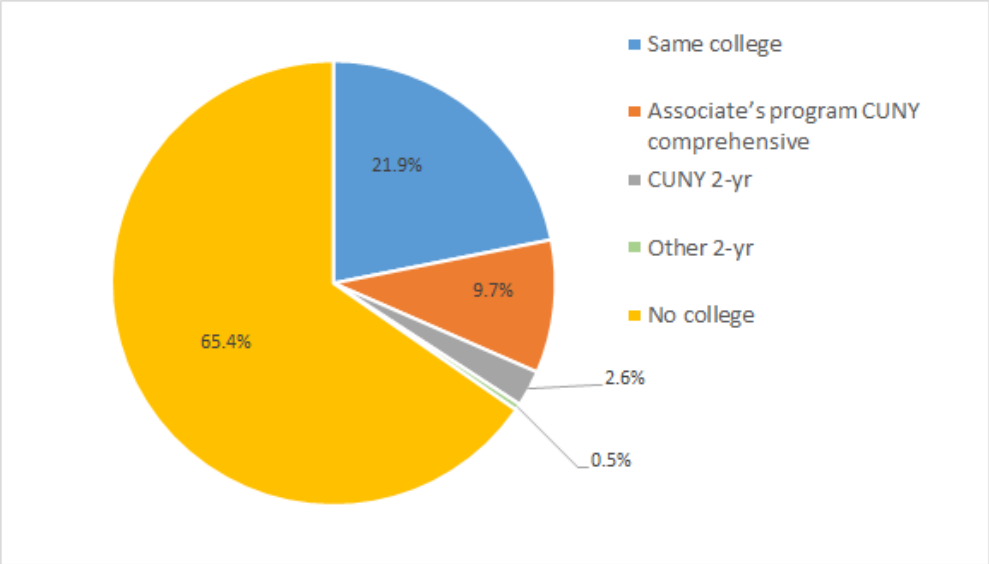
Table 5. Characteristics of admitted students who enrolled in bachelor's program vs. melted: Fall 2013 cohort (Total N=4,816)

	All admitted students (N=4,816)	Enrollees (N=3,979)	Melters (N=837)
Demographic characteristics			
% female	62.6	62.6	62.8
% Asian	20.3	20.8	17.9
% Black	21.8	20.1	29.9
% Hispanic	39.8	40.2	37.5
% White	17.7	18.4	14.6
% Pell (college entry)	76.6	76.0	79.5
Mean age (college entry)	19.7	19.6	20.2
College performance			
Mean cumulative GPA	3.0	3.1	2.9
Mean cumulative credits	55.7	56.6	52.0

Note. 392 students are enrollees in one term and melters in another term. For students who applied for transfer multiple times, this table reports on their most recent application. Missingness: Pell status is missing for 870 students and 259 students with an award amount of zero are counted as not receiving Pell.

Instead of enrolling in a bachelor's-degree program, melters most often stopped out of college all together (they did not continue in an associate program). As shown in Figure 4, this is the case for around two thirds (65%) of our melt population. A fifth of melters remained enrolled in the same college. Just under 13% of melters transferred to another college, but remained in an associate program.

Figure 4. Pathway of melters: Fall 2013 cohort (outcomes for N=837 students)



SUMMARY AND NEXT STEPS

Overall, we find that there is substantial room for improvement at multiple points in the pipeline between starting in a community college and transferring to a bachelor's program. First, we find that many community college students stop attending college within the first three semesters. More than 35% of the cohort had stopped out before the third semester, calling attention to the need for more support in the early years of community college. Accounting for this attrition, we find that a relatively high percentage (65%) of students who persist into the fourth semester of college apply for transfer to a bachelor's program, suggesting that awareness of and interest in bachelor's programs is relatively high among these students, but there is room to improve the numbers who apply for transfer, especially among Black and Hispanic students, who apply at lower rates than Asian and White students. Surprisingly, approximately 9% of students who applied to and were admitted to a CUNY bachelor's program did not go on to enroll in a bachelor's program, comparable to the 8-40% value found for freshman summer melt (Castleman & Page, 2014). This transfer melt might represent a promising point of intervention because these students have not only applied for transfer, but have earned only slightly lower college GPAs and credits than students who enrolled in a bachelor's program. This analysis has also found that each stage in the leaky pipeline seems to further disparities between Black and Hispanic students and Asian and White students.[7]

Next we plan to continue the longitudinal analysis into the third and fourth main leaky pipeline points identified by TOP: Lack of Credit Transfer and Transfer Shock. It will then be possible to synthesize the results of the longitudinal analysis, in their entirety, with other transfer research data, including results from TOP's focus groups and surveys. This synthesis will help guide practitioners to the interventions that will be most effective in facilitating success in the greatest number of transfer students.

[7] These findings are based on a 6-year tracking period and we may find that some additional students apply for transfer and enroll in bachelor's programs when we add additional years of data, but, given the decreasing trend we see in applications over time, we do not expect additional years of data to substantially change this finding.

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Appendix 1: Applied Associate Degree (AAS) students

Our Fall 2013 cohort includes 3,827 students (22%) who seek an Associate in Applied Science Degree (AAS). As shown in Table 6, AAS students differ from other associate students only slightly on most demographic and academic preparation indicators, but they are noticeably less likely than other associate students to be female (44% vs. 55%).

An AAS prepares students for entry into a specific career area immediately after graduation and is not designed for transfer into bachelor's programs. Therefore, we might expect a relatively low share of students who start in these programs to transfer. Our data show that AAS starters do enroll in bachelor's programs at lower rates than other associate students (34% vs. 44%), but this still leaves a large number who do transfer. For the two leaky pipeline points tracked in this brief, we repeated our analyses for students who start in AAS programs and compared results to those of students who start in regular associate programs.

Compared to other associate students, AAS starters remain enrolled in community college at slightly lower rates in the initial semesters. For example, only 62% of AAS starters, compared to 65% of other students, make it to the second year (third semester) of college. These differences between groups, however, are small compared to the overall magnitude of stop-out/drop-out in the early semesters among both types of students.

AAS starters apply for transfer to bachelor's programs at lower rates than other associate students: 39% vs. 49% of everyone in the starting cohort. This outcome could be due to the differing student characteristics between the two groups and/or the different college program they attend. Among those who do apply to (CUNY) bachelor's programs, AAS students are admitted at almost the same rate as other associate students: 87% vs. 88%.

AAS students who are admitted to CUNY bachelor's programs enroll at almost the same rate as other associate students: 82% vs. 83%, implying that there is no noteworthy difference in transfer melt between the two groups. We will continue to analyze the outcomes for AAS starters separately when we look at the final two stages in the leaky pipeline.

Table 6. Characteristics of AAS vs. other associate students, Fall 2013 cohort

Demographic characteristics	AAS (N=3,827)	Other associate (N=13,628)
% female	44.2	55.3
% Asian	14.2	14.3
% Black	30.6	27.2
% Hispanic	43.2	43.7
% White	11.7	14.4
Mean age (college entry)	20.9	19.9
% Pell (college entry)	74.8	74.5
Academic preparation		
High school GPA	75.3	75.8
% assigned to any	75.2	72.7

Appendix 2: Spring Entrants

We replicated all analyses for the community college cohort that started in Spring 2014 (N=7,074) to see if similar patterns exist with respect to the leaky pipeline points between students who start in spring compared to those who start in fall. Students in the spring cohort are slightly less likely than students in the fall cohort to be female, Hispanic or White, and slightly more likely to be Asian or Black. The mean age at college entry is around two years higher among spring entrants and a larger share of them are assigned to remediation in all subjects.

We saw among fall students that the size of the initial cohort decreases rapidly in the early semesters of community college, decreasing the pool of potential transfer applicants. This pattern is even more pronounced among spring entrants: only 69% of students are still enrolled in the second semester and 57% are still enrolled after one year (compared to 82% and 65%, respectively, for the fall cohort).

At the first leaky pipeline point, application to transfer, the difference between spring and fall entrants is striking: when counting both those with an application record, as well as those for whom we infer application, only 35% of students in the spring cohort apply to a CUNY bachelor's program, compared to 47% in the fall cohort. (Note that the 35% comes from 5.5. years of tracking, compared to 6 years of tracking for the 47%. The 5.5-year equivalent for the fall cohort is 45%.)

At the second leaky pipeline point, transfer melt, the difference between spring and fall entrants is much less pronounced. Among students with a CUNY application record who were admitted to a bachelor's program, 79% of spring starters enrolled, compared to 83% of fall starters.

For all points at which we see differences between fall and spring entrants, patterns could be due to the differing student composition and/or a different college experience for students who enter at a non-traditional time. Further analyses would be needed to disentangle the effects of these factors.