



Early Performance Feedback and Success

Early Performance Feedback (EPF) is an early warning program started in FA09 to enhance first year student performance in 100-level courses. Courses with high D, F, W grades were initially targeted for this program, however, based on learning analytics of courses at CSU that predict graduation and department willingness to participate in EPF, other courses have been added to the program.

This report is an update to a previous report from [Spring 2019](#), which focused on associations between the EPF program, course-level success, and second fall persistence among FA09-FA18 FTFT and transfer cohorts. Results indicated a positive association between EPF participation and course success, and a slight positive association between second fall persistence and participating in three or more EPF sections compared to students that only enrolled in one EPF course. In addition, early academic performance indicators were strongly associated with course success, and while U-Turn attendance was not associated with course success, it was associated with higher W-drop rates and a higher first fall GPA. Rather than individual course success outcomes, this report examines observed second fall persistence and first fall academic probation rates by aspects of the EPF program using the most recent fall cohorts (FA15-FA19). Course-level outcomes are available from the Collaborative for Student Achievement upon request.

Key Findings

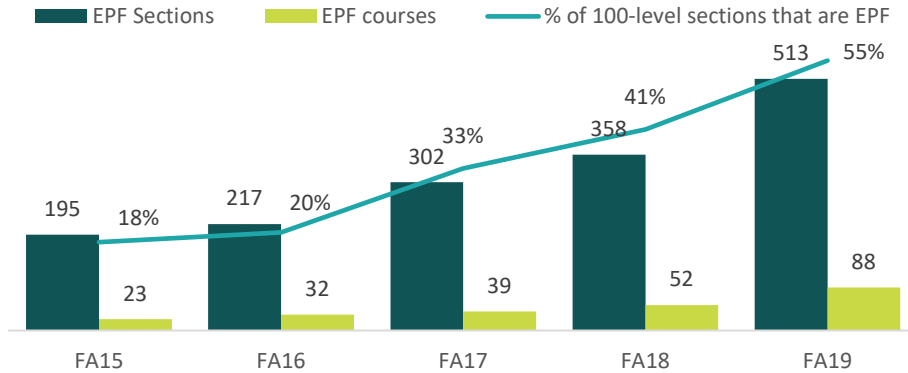
- The number of EPF courses and EPF sections offered has increased significantly over time, as well as the proportion of students who enroll in at least one EPF course. Almost all FTFT students from the FA19 cohort were enrolled in an EPF section, and 4 out of 5 transfer students during their first fall. The proportion of students enrolled in multiple EPF sections has also grown considerably over time.
- After controlling for high school GPA, FTFT students who enrolled in three or more EPF sections compared to one section had slightly higher odds of persisting to second fall across cohorts. This confirms findings from the [previous report](#), which found a slight positive association between persistence to second fall for FTFT students who were enrolled in three or more EPF sections vs. one section during their first fall semester. This association holds for FTFT students with two or more structurally underserved attributes (limited income, first gen, and/or racially minoritized), although not statistically significant due to low headcount. This association has decreased over time as the number of EPF courses and sections increase.
- Second fall persistence rates among transfer students fluctuated by number of sections across time. No significant associations were found between EPF enrollment and persistence, regardless of the number of courses.
- Within EPF courses, the 'Not Yet Meeting Expectations' (NYME) and 'Meeting Expectations' (ME) notifications can serve as an early indicator of second fall persistence and first fall academic probation status. On average, students without any NYME indicators were 8 PP more likely to persist to their second fall and 21 PP less likely to be on academic probation during their first fall compared to students who received one NYME indicator. Students who received two or more NYME indicators had the lowest persistence rate at 15 PP below ME students and 7 PP below students with one NYME, on average. They also had a higher first fall academic probation rate compared to students with just one NYME (24 PP higher) and students without any NYME indicators (45 PP higher), on average. This pattern is similar for students with multiple underserved attributes.
- FTFT students with one or more NYME indicators who attended U-Turn were more likely to persist to their second fall. When averaged across cohorts, attendees persisted at a 5 PP higher rate, with a 7 PP lower academic probation rate their first fall compared to non-attendees. Students with multiple attributes who

attended U-Turn were also more successful, with larger positive gaps (8 PP for each outcome) compared to FTFT overall, suggesting that the program may also be a useful strategy for these students.

EPF Growth Over Time

Figure 1 displays the number of courses and sections that participated in EPF by term, and the proportion of 100-level lecture sections that participate in EPF. Please note that courses have multiple sections in a semester and some or all of the sections of an EPF course might participate in the program.

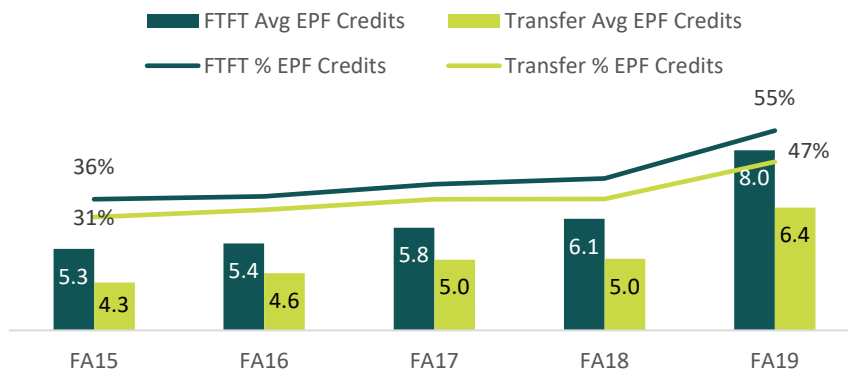
Figure 1. EPF Section/Course Count and Percent of 100-Level Sections that are EPF



The number of EPF courses have more than tripled over the past five years, and the number of sections have more than doubled. The proportion of 100-level lecture sections that participate in EPF has grown as well, from 18% in FA15 to 55% in FA19.

Figure 2 displays the average number of EPF credits earned by FTFT and transfer cohorts as well as EPF course credits as a percentage of total first fall credits.

Figure 2. First Fall Average and Percent EPF Credits Enrolled for FTFT and Transfer Cohorts with an EPF Course



In FA15, FTFT students with at least one fall EPF course averaged just over 5 EPF credits; in FA19, average credits increased to 8. This represents about 36% of overall credits for FTFT students in FA15, which grew to 55% by FA19. Transfer students also experienced a similar increase, from an average of 4.3 first fall EPF credits in FA15 to 6.4 in FA19. The proportion of overall EPF credits also increased from 31% to 47%.

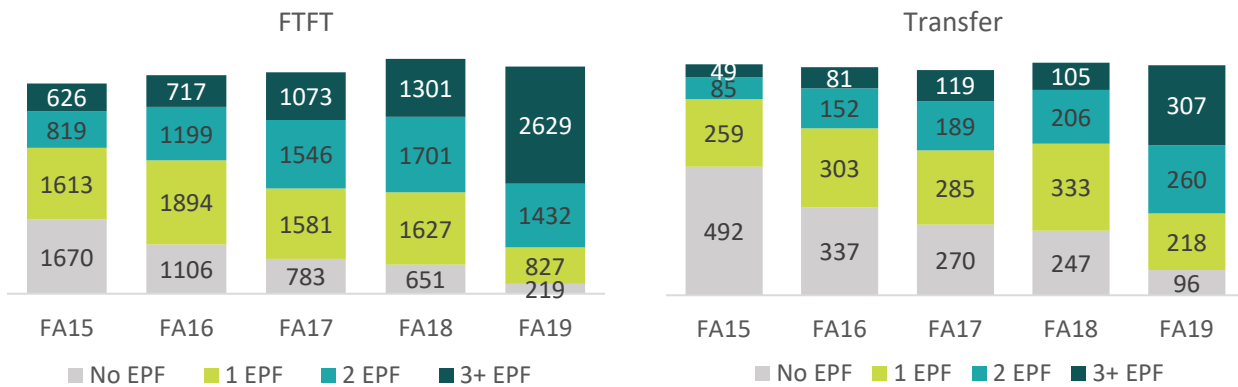
EPF, First Fall Probation, & Second Fall Persistence

This section examines first fall probation rates and second fall persistence by number of EPF sections, by number of NYME indicators (ME, 1 NYME, 2+ NYME), and by participation in the U-Turn program. Transfer students are limited to those who started at CSU with freshman or sophomore status; about 70% of transfer students who take at least one EPF course during their first fall are freshman or sophomores.

Persistence by Number of EPF Sections

As the number of EPF courses and sections have increased over time, so has the proportion of students who are enrolled in multiple EPF sections. See the [Appendix](#) for demographics and success outcomes by number of EPF sections. Figure 3 displays student headcounts by the number of EPF sections they enrolled in during their first fall on campus.

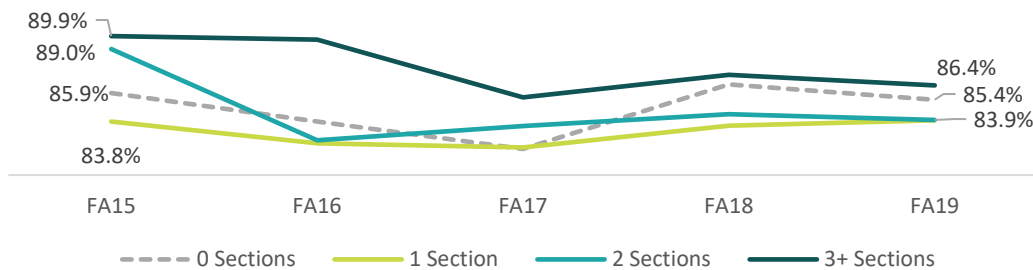
Figure 3. Student Headcount by Number of EPF Sections (FA15-FA19 FTFT and Transfer Cohorts)



The proportion of students enrolled in at least one EPF course has grown considerably over time. About two-thirds of FTFT students in the FA15 cohort had an EPF course; almost all students in the FA19 cohort (96%) experienced at least one EPF course. The proportion of students enrolled in multiple EPF courses has also increased significantly. In FA15, about 13% of FTFT EPF students were enrolled in three or more EPF courses; by FA19, this proportion had expanded to 52%. The proportion of transfer students with at least one EPF course doubled between FA15 and FA19, and like FTFT students, the proportion enrolled in three or more courses increased from 6% in FA15 to 35% by FA19.

Figure 4 displays second fall persistence rates over time by the number of EPF sections among FTFT students.

Figure 4. Second Fall Persistence by Number of EPF Sections (FA15-FA19 FTFT Cohorts)

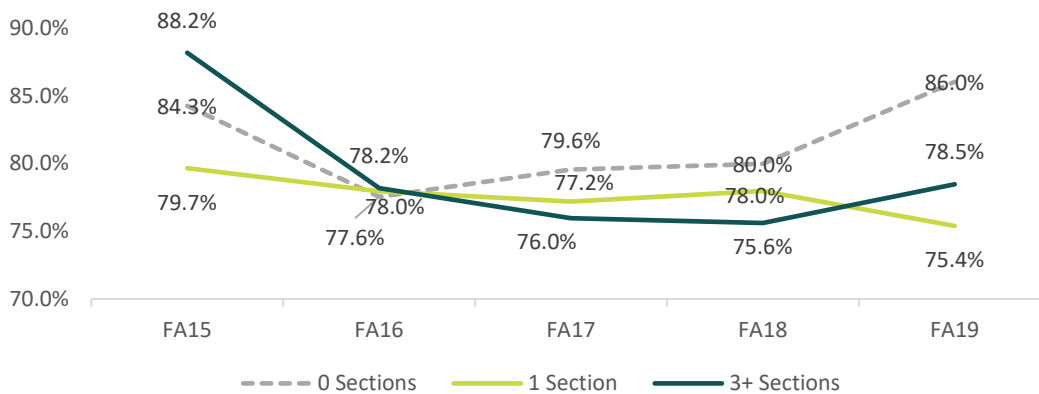


Students with three or more EPF sections had a higher observed second fall persistence rate compared to students without any EPF sections, and students with one or two sections. This gap has decreased over time; among the FA15 cohort, students with 3+ sections persisted at a 6 PP higher rate compared to students with 1 section; in FA19, this gap was 2.5 PP. After accounting for HS GPA, enrolling in three or more EPF courses compared to one course was significantly associated with higher odds of persistence among earlier cohorts (FA15-FA16) as well as more recent cohorts (FA18-FA19). The magnitude of this association is larger for earlier cohorts. Predicted persistence for FA15-16 was 88% for students with three or more sections compared to 84% for students with one section (4 PP), and 86% compared to 84% for FA18-FA19 (2 PP).

Students without any EPF courses had a slightly higher persistence rate compared to students with one course. In general, students who did not take any EPF courses had a higher HS GPA compared to students with one course. Given their higher level of pre-academic preparation, these students were less likely to take 100-level courses.

Figure 5 displays second fall persistence rates over time by the number of EPF sections among FTFT students with 2 or more structurally underserved attributes.

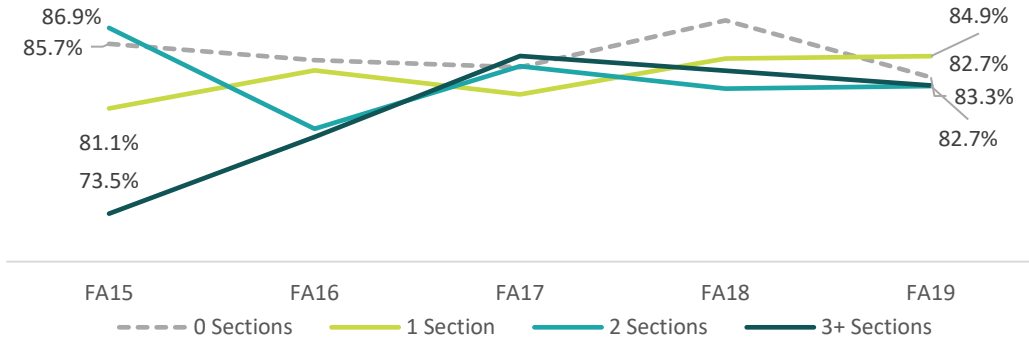
Figure 5. Second Fall Persistence by Number of EPF Sections Among Students with 2+ Attributes (FA15-FA19 FTFT Cohorts)



Among FTFT students with multiple attributes, those with three or more EPF sections persisted at a higher rate compared to students with one section for the FA15 and FA19 cohorts, and at or slightly below the one section rate for FA16 through FA18. Students with one EPF section persisted at a lower rate compared to students without any sections during their first fall. The association between the number of EPF sections and persistence is not significant for this group for recent cohorts (FA18-19), after accounting for HS GPA. However, this is most likely to be due to the low headcount, as the odds ratio comparing three or more sections to one was similar to that of FTFT students overall.

Figure 5 displays second fall persistence rates over time by the number of EPF sections among transfer students.

Figure 5. Second Fall Persistence by Number of EPF Sections (FA15-FA19 Transfer Cohorts)



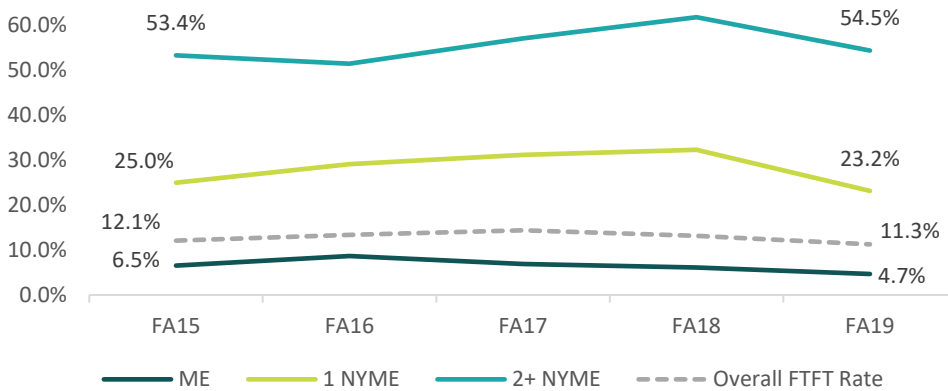
Transfer students in the FA15 and FA16 cohorts with three of more sections had lower persistence rates compared to students with one, two, or no EPF sections; rates were relatively similar across EPF groupings for the most recent three cohorts. After accounting for transfer GPA, enrolling in one EPF section compared to three or more was not significantly associated with second fall persistence.

Among transfer students with multiple attributes, minimal differences in persistence were observed between one vs. three or more sections, with the exception of the FA18 cohort. For FA18, students with one course persisted at 83%, compared to students with multiple courses, who persisted to second fall at 76%.

Outcomes by Number of EPF ‘Not Yet Meeting Expectations’ Indicators

As part of the EPF program, students tracking toward an unsuccessful course completion are issued a notification that they are ‘Not yet meeting expectations’ (NYME). [Previous course-level findings](#) indicated a strong positive correlation between receiving an NYME indicator and course failure; only 48% of students who received an NYME indicator were successful. Across cohorts, the majority of students meet expectations (about 75%), about 20% receive one NYME notification, and about 5% receive two or more notifications. Figure 6 displays first fall academic probation for FTFT students by NYME indicators.

Figure 6. First Fall Academic Probation by Number of NYME Indicators (FA15-FA19 FTFT Cohorts)



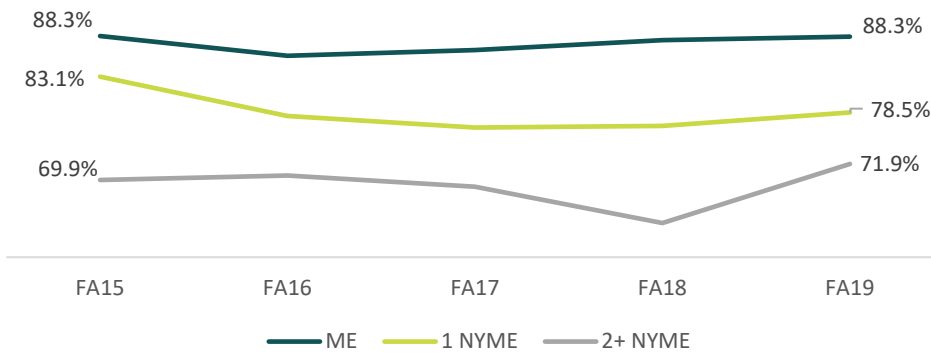
Among students who met expectations, academic probation was relatively low, and has decreased over time by about 2 PP. About one in four students who receive one NYME indicator and over half of students with two or

more indicators were on academic probation for the first fall. These rates have remained relatively consistent across time.

Students with 1 or 2 or more NYME indicators had a higher probation rate compared to the overall FTFT rate across cohorts. Among students with 2+ attributes, probation rates were higher for each group (ME, 1 NYME, 2+ NYME), but display a similar pattern.

Figure 7 displays second fall persistence among FTFT students by NYME indicators.

Figure 7. Second Fall Persistence by Number of NYME Indicators (FA15-FA19 FTFT Cohorts)

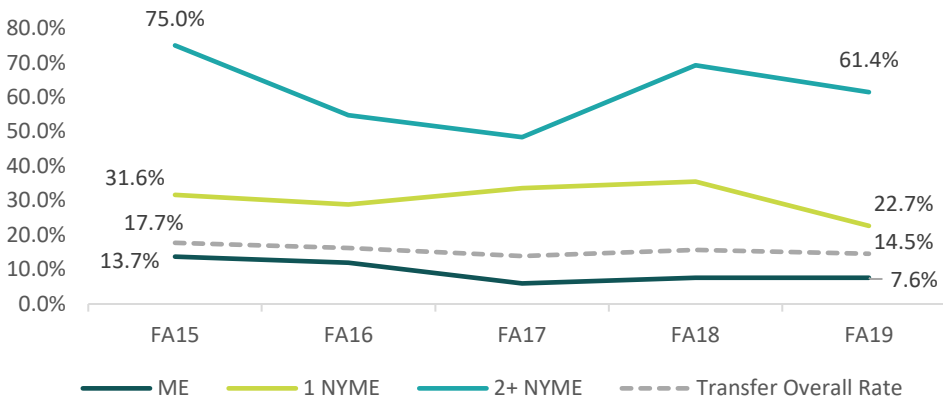


About 88% of students who met expectations persisted to their second fall; this rate has remained relatively unchanged across cohorts. The persistence rate for students with one NYME indicator has decreased from 83% to 79% (about 4 PP) between FA15 and FA19, and the persistence gap between students meeting expectations and this group has increased from about 5 PP to 10 PP across cohorts. Students with two or more NYME indicators have the lowest rates overall.

Among students with multiple attributes, each NYME group had a lower persistence rate compared to students overall for each cohort year. While 2+ attribute students who met expectations had much higher persistence rates compared to students with one or multiple NYME indicators, the gap between one and 2+ NYME was within 1-3 PP for three out of five cohorts.

Figure 8 displays first fall academic probation rates by number of NYME indicators among transfer students.

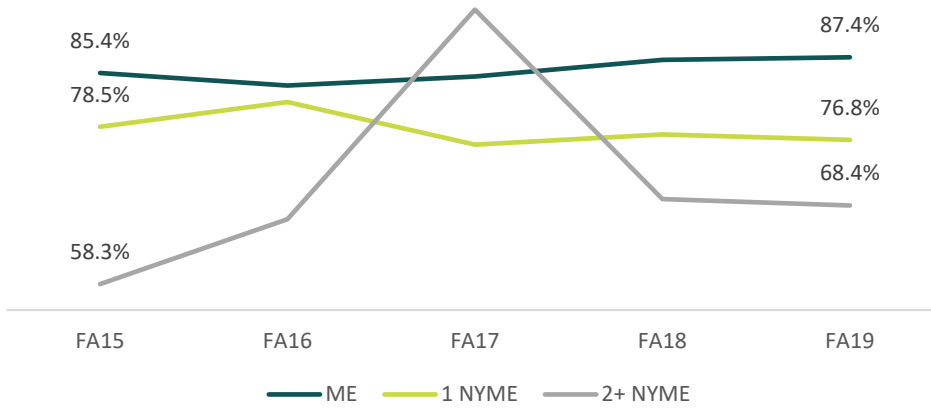
Figure 8. First Fall Academic Probation by Number of NYME Indicators (FA15-FA19 Transfer Cohorts)



In general, transfer students had higher first fall academic probation rates compared to FTFT students, although rates have decreased for each group across cohort years. A similar pattern is observed, in that probation rates increased as the number of NYME indicators increased. Students with 1 or 2 or more NYME indicators had higher probation rates across time compared to first year transfer students overall.

Figure 9 displays second fall persistence for transfer students by the number of NYME indicators.

Figure 9. Second Fall Persistence by Number of NYME Indicators (FA15-FA19 Transfer Cohorts)

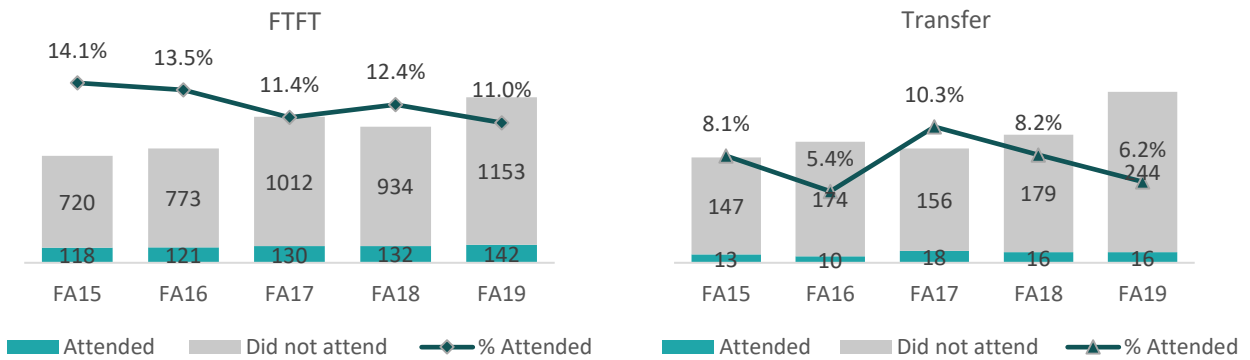


Transfer students who met expectations in their EPF courses persisted at a higher rate compared to students who received one or more NYME notifications with the exception of 2+ NYME students in the FA17 cohort. Students with one NYME notification had a similar persistence rate across time; the gap between this group and students who met expectations grew from about 7 PP in FA15 to about 10 PP in FA19. Students with two or more NYME notifications had the lowest persistence rate across groups with the exception of students in the FA17 cohort. Persistence rates for this group increased by 10 PP from FA15 to FA19.

U-Turn

Students who receive an NYME notification are encouraged to attend U-Turn, a voluntary program through TILT that provides guidance and strategies to achieve academic success. Figure 10 displays the headcount and percent of FTFT and transfer students who received one or more NYME notifications their first fall and attended U-Turn.

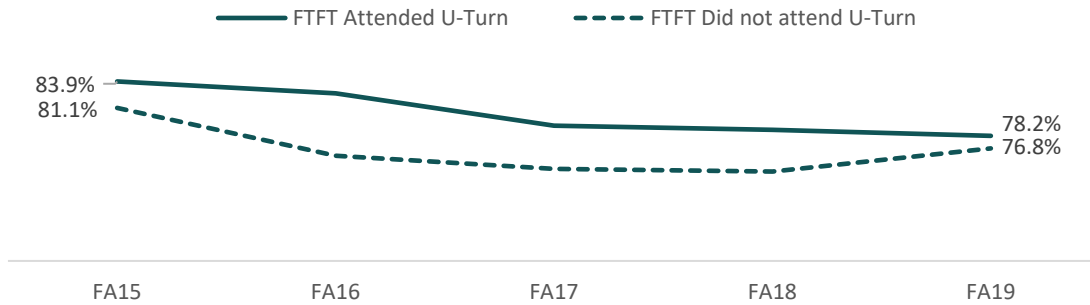
Figure 10. U-Turn Participation Among Students with 1+ NYME Indicators (FA15-FA19 FTFT & Trans Cohorts)



The majority of students who received an NYME notification did not attend U-Turn; the proportion who attended has decreased for both FTFT and transfer students across cohort years. Transfer students were less likely to attend U-Turn compared to FTFT students. Among students with two or more structurally underserved attributes, the proportion who attended U-Turn is about 1.5 times greater compared to students overall.

Figure 11 displays second fall persistence rates by U-Turn attendance among FTFT students who received one or more NYME indicators. Rates for transfer students are not displayed due to low headcount.

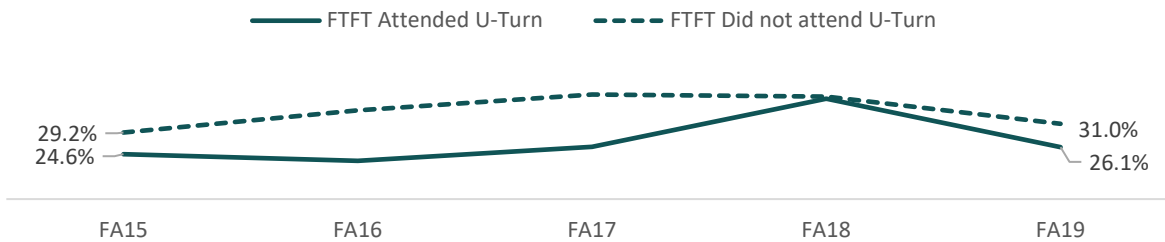
Figure 11. U-Turn and 2nd Fall Persistence Among Students with 1+ NYME Indicators (FA15-FA19 FTFT Cohorts)



FTFT students who attended U-Turn persisted at a higher rate to second fall compared to non-attendees across cohorts. This positive difference was largest for FA16 cohort (6.6 PP), and smallest for FA19 students (1.3 PP). When averaged across cohorts, attendees persisted at a 5 PP higher rate.

Figure 12 displays FTFT students' first fall academic probation rate by U-Turn attendance across cohorts. Rates for transfer students are not displayed due to low headcount.

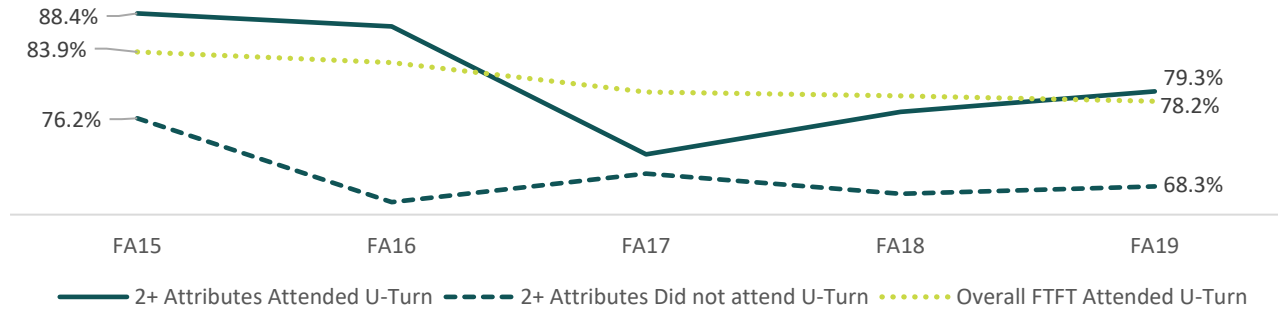
Figure 12. U-Turn and 1st Fall Probation Rates Among Students with 1+ NYME Indicators (FA15-FA19 FTFT Cohorts)



Among FTFT students with one or more NYME indicators, those who attended U-Turn had a lower academic probation rate for all terms except FA18, for which the rate was approximately the same (36%). When averaged across cohorts, students who attended U-Turn had a 7 PP lower academic probation rate their first fall compared to non-attendees.

Figure 13 displays second fall persistence rates by U-Turn attendance among students who received one or more NYME indicators and hold two or more structurally underserved identities. Only FTFT students are displayed, as headcounts are too small for transfer students with two or more identities.

Figure 13. U-Turn and 2nd Fall Persistence Among 2+ Attribute Students with 1+ NYME Indicators (FA15-FA19 FTFT Cohorts)



The difference in persistence rates by U-Turn attendance is striking in that attendees were at least 10 PP more likely to persist compared to non-attendees for all cohorts except FA17. These positive gaps are much larger compared to the gaps observed among FTFT students overall (Fig. 10), suggesting that U-Turn might be more impactful for these students. Persistence rates for this group were similar (FA18, FA19) or higher (FA15, FA16) compared to the overall rate for FTFT students who attended U-Turn, with the exception of the FA17 cohort. Similar to FTFT students overall (Fig. 11), U-Turn attendees had a lower first fall academic probation rate compared to non-attendees among students with multiple attributes for all terms except FA18.

Conclusions

The EPF program has grown significantly across time, such that the majority of new FTFT and transfer students enroll in at least one EPF course during their first fall due to the growth in EPF courses and sections. FTFT students who enrolled in three or more EPF sections have slightly higher odds of persisting to second fall compared to students enrolled in one section. However, this association has decreased over time as the number of EPF courses and sections continue to increase, and is heavily influenced by other factors that impact students' ability to enroll in multiple EPF courses, such as prior academic preparation or credit load. This association is similar for students with multiple underserved attributes; although, it is not statistically significant. No significant associations were observed between number of EPF sections and persistence among transfer students. It is likely that prior learning credits influence their participation in the program, as students have often already completed 100-level coursework and are therefore less likely to enroll in EPF courses.

For both FTFT and transfer students, an inverse relationship was observed between the number of NYME indicators and second fall persistence; as the number of NYME indicators increased, persistence decreased. Thus, NYME flags have the potential to serve as early indicators of persistence and academic probation, and might be useful in identifying students who could benefit from additional support services and programming. For FTFT students with NYME indicators, those who attended U-Turn had higher persistence and lower academic probation rates. U-Turn attendance was even more impactful for students with multiple attributes, suggesting that U-Turn could be an important strategy for these students in their first year.

Appendix

Table 1. FTFT Demographics, 1st Fall Academic Probation, & 2nd Fall Persistence by Cohort Term and EPF Status

	Hdct	Pct	FG	RM	Pell	NR	Female	STEM	HS GPA	1 st FA Prob	2 nd FA Persist
FA15	4728	100.0%	25.9%	21.7%	20.5%	30.4%	53.2%	39.0%	3.59	12.1%	86.2%
First Fall No EPF	1670	35.3%	28.9%	22.0%	21.4%	27.2%	50.8%	16.7%	3.50	11.3%	85.9%
First Fall EPF	3058	64.7%	24.3%	21.5%	19.9%	32.1%	54.5%	51.1%	3.64	12.6%	86.5%
1 EPF section	1613	52.7%	27.7%	22.3%	21.9%	31.2%	55.7%	35.6%	3.53	13.3%	83.8%
2 EPF Sections	819	26.8%	23.7%	21.0%	19.5%	33.0%	54.5%	56.9%	3.68	12.7%	89.0%
3 EPF sections	626	20.5%	16.5%	20.0%	15.5%	33.2%	51.4%	83.4%	3.89	10.4%	89.9%
FA16	4916	100.0%	22.8%	25.3%	20.8%	31.8%	56.1%	39.1%	3.62	13.4%	83.7%
First Fall No EPF	1106	22.5%	22.6%	25.8%	22.6%	27.7%	53.9%	16.0%	3.60	10.4%	83.8%
First Fall EPF	3810	77.5%	22.9%	25.2%	20.2%	33.0%	56.7%	45.8%	3.63	14.3%	83.7%
1 EPF section	1894	49.7%	23.4%	27.1%	22.7%	33.7%	56.4%	33.7%	3.56	14.8%	82.3%
2 EPF Sections	1199	31.5%	24.3%	25.1%	19.3%	32.4%	54.4%	46.0%	3.60	15.0%	82.5%
3 EPF sections	717	18.8%	19.2%	20.4%	15.2%	32.2%	61.4%	77.1%	3.85	11.4%	89.7%
FA17	4983	100.0%	22.8%	27.7%	21.9%	33.4%	53.9%	40.0%	3.62	14.4%	83.2%
First Fall No EPF	783	15.7%	24.8%	31.3%	26.6%	32.2%	52.2%	18.5%	3.61	12.4%	81.9%
First Fall EPF	4200	84.3%	22.5%	27.0%	21.0%	33.7%	54.2%	44.0%	3.63	14.8%	83.5%
1 EPF section	1581	37.6%	25.1%	29.6%	23.8%	35.5%	53.1%	31.8%	3.56	15.2%	82.0%
2 EPF Sections	1546	36.8%	22.4%	27.3%	21.1%	32.8%	56.5%	45.7%	3.63	14.0%	83.5%
3 EPF sections	1073	25.5%	18.6%	22.8%	16.7%	32.2%	52.6%	59.6%	3.72	15.2%	85.6%
FA18	5280	100.0%	22.5%	28.1%	21.4%	36.7%	53.8%	41.0%	3.65	13.2%	85.1%
First Fall No EPF	651	12.3%	21.4%	25.2%	23.0%	31.6%	51.2%	16.1%	3.60	13.2%	86.5%
First Fall EPF	4629	87.7%	22.6%	28.5%	21.1%	37.5%	54.2%	44.5%	3.65	13.2%	84.9%
1 EPF section	1627	35.1%	25.4%	28.6%	24.2%	37.6%	55.2%	31.3%	3.60	12.8%	83.5%
2 EPF Sections	1701	36.7%	21.9%	30.1%	20.0%	37.6%	52.6%	46.7%	3.64	14.2%	84.4%
3 EPF sections	1301	28.1%	20.2%	26.2%	18.8%	37.0%	55.0%	58.1%	3.73	12.3%	87.2%
FA19	5107	100.0%	23.4%	28.9%	21.2%	35.8%	57.0%	42.2%	3.70	11.3%	85.3%
First Fall No EPF	219	4.3%	26.0%	27.4%	23.7%	31.1%	60.3%	20.5%	3.86	5.9%	85.4%
First Fall EPF	4888	95.7%	23.3%	29.0%	21.1%	36.0%	56.8%	43.1%	3.70	11.5%	85.3%
1 EPF section	827	16.9%	24.2%	31.8%	22.4%	40.9%	60.6%	38.6%	3.72	11.0%	83.9%
2 EPF Sections	1432	29.3%	24.4%	29.8%	22.0%	37.4%	56.8%	42.2%	3.69	11.0%	83.9%
3 EPF sections	2629	53.8%	22.4%	27.7%	20.2%	33.7%	55.6%	45.0%	3.69	12.0%	86.4%

Table 2. First-Year Transfer Demographics, 1st Fall Academic Probation, & 2nd Fall Persistence by Cohort Term and EPF Status (Freshmen and Sophomores Only)

	Hdct	Pct	FG	RM	Pell	NR	Female	STEM	Transfer GPA	1 st FA Prob	2 nd FA Persist
FA15	885	100.0%	32.2%	17.1%	26.8%	25.9%	50.7%	30.7%	3.12	17.7%	83.8%
First Fall No EPF	492	55.6%	32.7%	16.9%	27.6%	25.0%	51.4%	23.8%	3.15	13.0%	85.7%
First Fall EPF	393	44.4%	31.6%	17.3%	25.7%	27.0%	49.9%	39.4%	3.08	23.7%	81.4%
1 EPF section	259	65.9%	31.3%	17.4%	25.5%	28.2%	49.0%	32.4%	3.08	18.5%	81.1%
2 EPF Sections	85	21.6%	31.8%	17.6%	27.1%	25.9%	47.1%	43.5%	3.02	29.4%	86.9%
3 EPF sections	49	12.5%	32.7%	16.3%	24.5%	22.4%	59.2%	69.4%	3.17	40.8%	73.5%
FA16	873	100.0%	28.9%	20.7%	25.8%	30.0%	45.7%	30.7%	3.12	16.3%	82.9%
First Fall No EPF	337	38.6%	30.6%	17.5%	29.4%	29.4%	52.2%	20.8%	3.17	10.7%	84.6%
First Fall EPF	536	61.4%	27.8%	22.8%	23.5%	30.4%	41.6%	36.9%	3.10	19.8%	81.9%
1 EPF section	303	56.5%	30.4%	21.8%	24.1%	30.7%	44.9%	32.3%	3.11	16.2%	83.8%
2 EPF Sections	152	28.4%	24.3%	25.0%	21.1%	30.9%	37.5%	38.8%	3.07	21.7%	79.6%
3 EPF sections	81	15.1%	24.7%	22.2%	25.9%	28.4%	37.0%	50.6%	3.12	29.6%	79.0%
FA17	863	100.0%	30.7%	22.5%	29.1%	29.1%	47.2%	34.2%	3.09	13.9%	83.5%
First Fall No EPF	270	31.3%	31.1%	20.4%	32.2%	26.7%	50.4%	28.1%	3.07	11.9%	84.1%
First Fall EPF	593	68.7%	30.5%	23.4%	27.7%	30.2%	45.7%	36.9%	3.10	14.8%	83.3%
1 EPF section	285	48.1%	28.4%	24.2%	31.6%	30.5%	49.5%	38.6%	3.10	13.0%	82.1%
2 EPF Sections	189	31.9%	32.3%	22.2%	24.3%	30.2%	40.7%	31.2%	3.11	17.5%	84.1%
3 EPF sections	119	20.1%	32.8%	23.5%	23.5%	29.4%	44.5%	42.0%	3.07	15.1%	84.9%
FA18	891	100.0%	34.2%	25.5%	27.7%	31.9%	48.9%	35.4%	3.14	15.7%	84.8%
First Fall No EPF	247	27.7%	36.4%	27.9%	28.3%	29.1%	53.8%	25.9%	3.13	11.3%	87.4%
First Fall EPF	644	72.3%	33.4%	24.5%	27.5%	32.9%	47.0%	39.0%	3.14	17.4%	83.9%
1 EPF section	333	51.7%	32.7%	21.3%	26.7%	30.6%	48.3%	41.4%	3.15	15.0%	84.7%
2 EPF Sections	206	32.0%	32.5%	29.6%	27.7%	35.4%	48.1%	36.9%	3.14	19.4%	82.5%
3 EPF sections	105	16.3%	37.1%	24.8%	29.5%	35.2%	41.0%	35.2%	3.13	21.0%	83.8%
FA19	881	100.0%	30.9%	25.5%	24.9%	26.9%	48.4%	33.7%	3.11	14.5%	83.3%
First Fall No EPF	96	10.9%	42.7%	28.1%	37.5%	18.8%	54.2%	25.0%	3.09	7.3%	83.3%
First Fall EPF	785	89.1%	29.4%	25.2%	23.3%	27.9%	47.6%	34.8%	3.11	15.4%	83.3%
1 EPF section	218	27.8%	32.1%	32.6%	28.4%	26.1%	50.5%	36.2%	3.12	11.5%	84.9%
2 EPF Sections	260	33.1%	30.0%	20.8%	25.0%	33.5%	46.2%	37.7%	3.09	17.3%	82.7%
3 EPF sections	307	39.1%	27.0%	23.8%	18.2%	24.4%	46.9%	31.3%	3.12	16.6%	82.7%