



Early Performance Feedback and Student Success

Early Performance Feedback (EPF) is an early warning program started in FA09 to enhance first year student performance in one-hundred-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. EPF is a central program for improving academic feedback during the critical early weeks of the semester by providing a structure for feedback early in the semester.

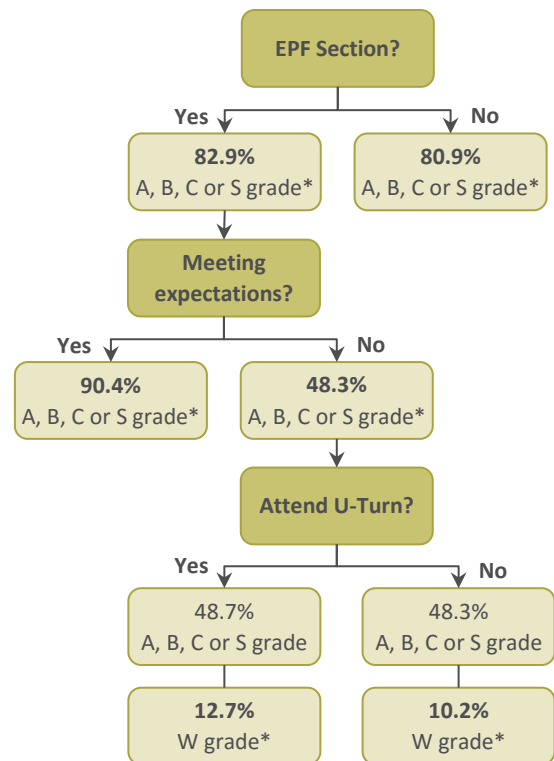
This report confirms the findings of a [previous report](#) that explored the association between student course-level success and course participation with the EPF program and assesses the following areas of EPF:

- Growth in EPF sections and courses over time as well as growth in the proportion of students and credits in EPF sections
- The association between section-level participation in EPF and course success
- The association between the EPF notification indicator or Meeting Expectations (ME) versus Not Meeting Expectations Yet (NMEY) and course success in EPF sections
- The observed persistence rate of first-time, full-time (FTFT) students by frequency of EPF enrollment
- The association between U-Turn attendance (a voluntary program that provides guidance and strategies for academic success) and course success among students with an EPF NMEY notification

Executive Summary

The EPF program has grown considerably over the last ten years. In FA18 the majority of first-time and transfer students have at least one course that participates in EPF and, on average, about 40% of their first-fall credits are in sections that participate in EPF. There is a slight positive association between persistence to the second fall for FTFT students that are enrolled in three or more EPF sections during their first fall semester, but this association did not hold if the student is only enrolled in one EPF section.

Similar to results from a prior study, overall section level participation in the EPF program is positively associated with course success after controlling for a variety of student demographic and academic characteristics. In other words, a student enrolled in an EPF section of a course has a predicted probability of earning an A, B, or C grade that is two percentage points higher than a similar student enrolled in the same course but in a section that does not participate in EPF. At the course level, there is significant variation in the association between EPF participation and course success. For instance, five of the 48 courses included in this analysis have a negative association between EPF participation and success. This is most likely due



*statistically significant at p < .001

to variations in the implementation of EPF and indicates the importance of faculty and staff buy-in for participation to have the intended impacts on student learning. Future work should also explore if there are any pedagogical or qualitative reasons for the variation between EPF and success at the course level.

Academic performance during the first-four weeks of the semester is strongly associated with course success. For instance, a student in an EPF section who receives a notification that they are “not meeting expectations yet” has 91% lower odds of course success compared to a student (in the same course section) who is meeting expectations. The EPF indicator provided to students during the fourth week of classes is highly predictive of final course grade and could be a metric to help strategically target interventions.

U-Turn is the primary, voluntary, intervention for students who are not yet meeting expectations and the assessment of its effectiveness shows mixed results. U-Turn attendance is not associated with higher course success, but is associated with higher W-drop rates and a first semester higher semester GPA. The higher levels of course success for EPF sections is mostly likely not due to students who are not yet meeting expectations attending U-Turn.

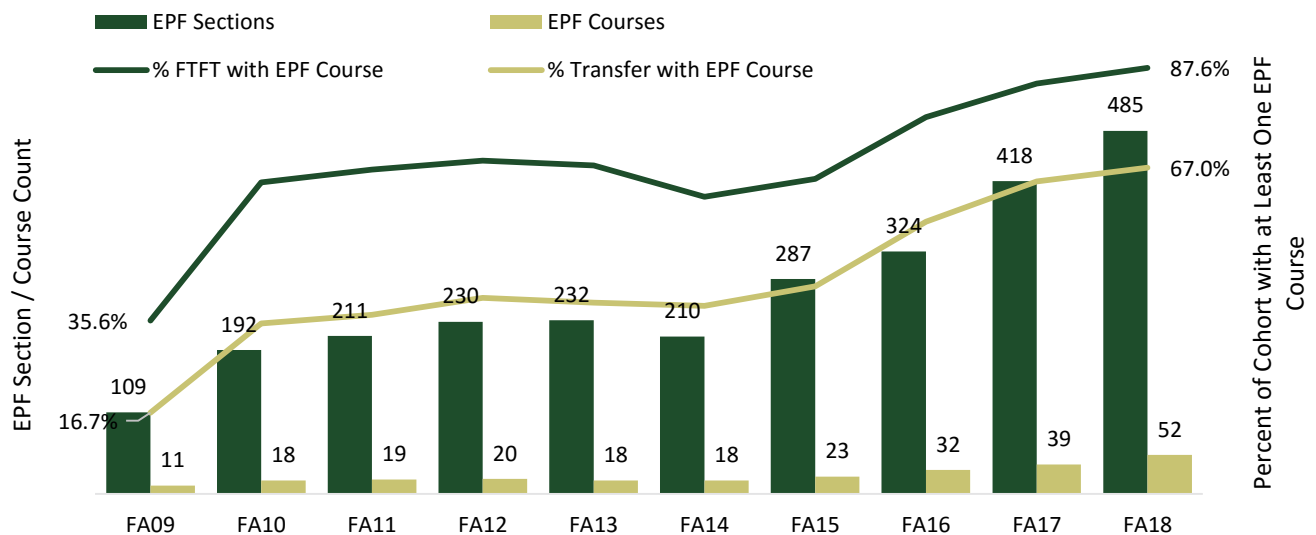
Study Limitations

The data presented in this study are observational and only provide descriptive information about the EPF program. Additionally, the multivariate associations described in this study only account for variables available in the system of record. Important data, such as pedagogical changes in courses over the study period, are not accounted for and most likely play a significant role in the changes of course success rates over time. It is essential for future work to gather information on pedagogical or qualitative reasons for the variation between EPF participation and success at the course level.

EPF Growth Over Time

Figure 1 displays the number of courses and sections that participate in EPF by semester and the proportion of first-time, full-time (FTFT) or transfer student cohorts with least one EPF course. 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.

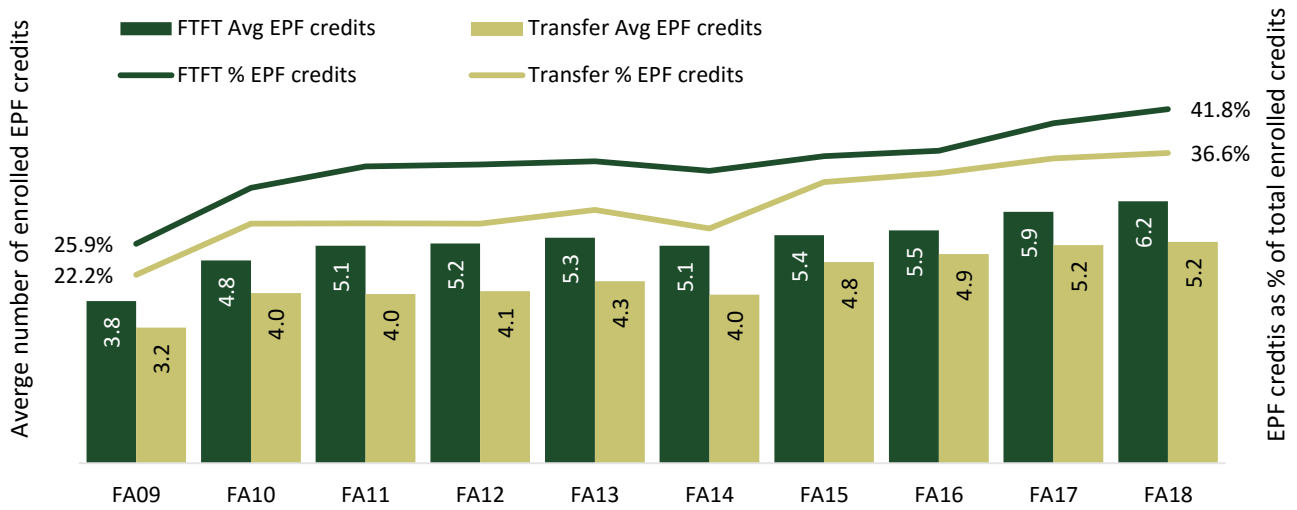
Figure 1. EPF Section/Course Count and Percent of FTFT and Transfer Cohorts with an EPF Course



The number of course sections participating in EPF program has grown considerably (over 300%) over the past nine fall semesters of programming (from 109 sections across 11 courses in FA09 to 485 sections across 52 courses in FA18). About 88% of the FA18 FTFT cohort had at least one EPF course during their first fall semester and 67% of the transfer cohort had at least one EPF course (up from 36% and 17%, respectively, in FA09). The intensity of the EPF experience has been increasing for students as well. For the FA18 cohort, about 25% of FTFT students were enrolled in 3 or more EPF sections, compared to 15% for FA16 (see Table 11, p. 16).

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



For FTFT students enrolled in at least one EPF course, the average number of EPF credits earned during their first term has increased from about 4 credits in FA09 to about 6 in FA18. As a proportion of their total credits, EPF course credits comprised over 40% of FTFT students' total credits in FA18, up from 26% in FA09. Average and total EPF credits for transfer students showed similar growth rates between FA09 and FA18; increasing from 4 credits to 5 on average and 22% to about 37% of total credits over the past nine fall terms.

EPF's Association with Course Success

This section replicates the analysis in the [prior report](#) with the three most recent fall semesters (FA16, FA17, and FA18) of EPF section participation. The purpose of this section is to explore if course success is associated with section level participation in the EPF program. Additionally, this section also describes the association between the EPF expectations notification and course success among students in EPF sections. Detailed tables with course level statistics on grades and demographics can be found in the [Technical Appendix](#), provided under separate cover).

Methods

The association between section-level EPF participation and student success in the course is calculated with a logistic regression model that controls for student type (new first-time or transfer students as well as continuing students) and student demographics (gender, first generation status, racially minoritized, and Pell recipient status) for each course. This analysis is limited to degree-seeking undergraduates in courses with face-to-face delivery and course enrollment of at least 200 students.

In order to assess the association between EPF participation and student course success a binary indicator for student course success (earned an A, B or C) is compared across course sections that participate in the EPF program to those that do not participate. In most cases (about 80%), all sections of a course in a semester participate in EPF; therefore, the non-EPF course section grades are taken from semesters prior to the EPF implementation in that course. However, for some courses, participation in EPF varies by section within a term so the course's non-EPF students are obtained from the same semester (see *Terms Included in EPF versus Non-EPF Course Comparisons*, p.11, in the Appendix, for each course's comparison type, between or within term).

Results

Table 1 displays the observed headcounts, success rates (A, B, C, or S grade) and observed percentage point (PP) gaps in success for EPF and non-EPF courses and sections, as well as the logistic regression odds ratios and changes in predicted probability of success by course. The differences between the observed and predicted values are based on the predicted associations controlling for other factors that are associated with course level success. The observed values do not control for other factors. The overall course average results are averaged across the 48 course-specific analyses (course level model statistics are available in the [Technical Appendix](#), provided under separate cover).

EPF Notifications and Course Success

Also of interest to this study, IRP&E evaluated the association of the EPF notification of *Not Meeting Expectations Yet* on course success. This single logistic regression model compares the final course grade by notification status, controlling for course topic (natural or physical science versus other subject; see p. 13 for complete model statistics).

- Overall, a student with a *Not Meeting Expectations Yet* notification has 91.4% lower odds of completing the course successfully (0.086 odds ratio) compared to a student with a *Meeting Expectations* notification.
- A student with a *Meeting Expectations* notification has a predicted course success rate of 93.2% compared to a predicted course success rate of 54.3% for a student with an NMEY notification.
- There is nearly a 39 PP gap between students meeting expectations versus those who are not.

Table 1. Course Success Rates¹ by EPF Status

Course	Comparison type ²	EPF Student Count	Non-EPF student count	Observed Values			Predicted values ³	
				EPF successful	Non-EPF successful	Observed PP gap	Odds ratio ⁴	Predicted PP gap
AA 100	Between	523	572	69.6%	77.3%	-7.67	0.65*	-8.70
AA 101	Between	147	148	91.8%	93.9%	-2.08	0.80	-1.00
AGRI116	Between	148	144	87.8%	94.4%	-6.61	0.43	-1.81
ANTH120	Between	257	290	85.2%	80.7%	4.52	1.43	4.29
BZ 111	Between	640	548	69.7%	70.1%	-0.39	1.00	-0.10
BZ 120	Between	695	662	83.5%	83.5%	-0.08	1.01	0.17
CHEM103	Between	194	192	83.0%	75.5%	7.47	1.65	7.74
CHEM104	Between	311	845	86.5%	92.5%	-6.05	0.56*	-6.18
CHEM107	Between	1,306	895	76.4%	72.6%	3.79	1.21	3.72
CHEM108	Between	1,034	444	92.0%	90.8%	1.21	1.58*	4.26
CHEM111	Between	3,351	3,029	75.7%	64.7%	10.94	1.82*	14.65
CHEM112	Between	2,942	1,818	90.4%	84.6%	5.78	1.86*	10.75
CHEM113	Between	1,914	1,475	72.8%	67.1%	5.68	1.33*	5.71
CHEM114	Between	1,444	831	92.2%	91.9%	0.31	1.04	0.31
CO 130	Between	596	345	91.6%	87.8%	3.78	1.49	5.12
CO 150	Between	4,285	3,937	91.0%	91.7%	-0.65	0.84*	-2.16
CO 300	Within	138	652	89.9%	87.4%	2.43	1.30	2.91
CS 150	Between	247	88	66.0%	69.3%	-3.33	0.88	-2.74
ECON202	Within	1,554	464	88.0%	88.8%	-0.83	0.94	-0.62
ECON204	Within	361	231	91.1%	91.3%	-0.21	0.98	-0.14
FSHN150	Between	1,363	1,322	81.1%	83.7%	-2.52	0.84	-2.48
GEOL120	Between	1,739	1,592	93.2%	81.3%	11.88	3.22*	10.71
HES 145	Within	651	311	92.5%	89.1%	3.41	1.51	3.56
HIST100	Between	513	305	77.2%	83.3%	-6.09	0.68*	-7.07
HIST101	Between	402	311	87.1%	89.4%	-2.32	0.80	-2.30
HIST151	Within	395	2,357	88.4%	90.0%	-1.68	0.85	-1.55
HIST170	Within	323	192	84.2%	84.9%	-0.69	0.81	-2.55
HIST171	Between	331	95	84.3%	87.4%	-3.08	0.73	-3.24
IE 116	Between	134	135	85.1%	90.4%	-5.30	0.58	-6.31
LIFE102	Between	4,831	2,502	78.1%	71.9%	6.21	1.45*	7.21
LIFE103	Between	691	662	70.5%	67.1%	3.41	1.17	3.21
MATH141	Between	1,788	1,813	75.4%	80.2%	-4.85	0.76*	-5.05
MATH155	Between	871	628	74.5%	56.7%	17.82	2.37*	20.43
MATH160	Between	974	454	68.8%	71.6%	-2.80	0.86	-3.78

¹ Course Success rate is the percent of students at end of term that earned an A, B, C, or S grade among all students that received a letter grade or W-drop/Incomplete.

² Predicted values are based on a course's logistic regression model that has EPF status as the primary independent variable and course success as the dependent variable controlling for student type, gender, first-generation status, Pell grant recipient status, and minoritized status. The predicted probabilities assume the average level of all the control variables.

³ Comparison type indicates how the EPF control group is collected: Within terms (not all course sections are in EPF) and Between Terms (EPF control group is collected in non-EPF terms). The terms for analysis can be found in *Appendix Terms Included in EPF versus Non-EPF Course Comparisons*.

⁴ The asterisk indicates statistical significance (the odds ratio's p-value is less than .05) and positive significant results are highlighted light green and negative significant relationships are highlighted pink.

Course	Comparison type ²	EPF Student Count	Non-EPF student count	Observed Values			Predicted values ³	
				EPF successful	Non-EPF successful	Observed PP gap	Odds ratio ⁴	Predicted PP gap
MATH161	Within	542	326	65.3%	67.2%	-1.86	0.91	-2.30
PH 110	Between	125	101	89.6%	87.1%	2.47	1.27	1.32
PH 122	Between	257	190	89.1%	81.6%	7.53	1.77*	5.86
PH 141	Between	1,192	1,073	78.4%	69.2%	9.19	1.51*	8.30
POLS131	Within	269	846	90.7%	85.8%	4.89	1.68*	4.37
POLS232	Within	292	231	84.6%	75.8%	8.83	1.69*	8.50
POLS241	Within	145	116	85.5%	90.5%	-5.00	0.57	-2.63
PSY 100	Between	5,015	5,058	85.1%	84.8%	0.31	1.06	1.04
SOC 100	Within	829	459	85.2%	86.1%	-0.89	0.92	-0.96
SOC 105	Between	448	539	85.2%	76.3%	8.95	1.84*	12.44
SPCM100	Between	566	684	91.7%	92.3%	-0.56	0.92	-0.70
SPCM130	Between	118	159	86.4%	79.9%	6.57	1.19	3.37
SPCM201	Between	118	147	82.2%	68.0%	14.18	2.21*	18.02
SPCM207	Between	131	113	96.9%	90.3%	6.68	3.80*	8.43
Overall		47,140	40,331	82.9%	80.9%	1.96	1.27	2.33

Overall, about 83% of students in the EPF courses earned an A, B, C, or S compared to about 81% of students in non-EPF courses. After controlling for student demographics and student type, EPF sections are associated with 27% higher odds of course success compared to students in the same course but not in an EPF section. On average, EPF participation increases a student’s predicted probability of success in a course by 2 PP.

While EPF participation does have a positive association with course success overall, success varies greatly by course and is negative for some courses. Of the 48 courses evaluated, participation in EPF is significantly positively associated (highlighted green in Table 1) with 14 courses (29%) and significantly negatively associated (highlighted pink) with 5 courses (10%). For the majority of courses (29 courses, 60%), there is no significant association between EPF participation and course success, though for many of these courses the associations are positive. These variations in results could be due to differences in program implementation by instructors. Standardized program protocols could aid in more stable, predictable results in the future.

Positive associations between EPF participation and student success are strongest in CHEM111, MATH155, and SPCM201, in which predicted probabilities of success range between 15 PP and 20 PP *higher* for EPF sections versus non-EPF sections.

For the five courses with statistically significant negative associations between EPF participation and student success (AA100, CHEM104, CO150, HIST100, and MATH141), the predicted probabilities of success range between 2 PP and 9 PP *lower* for EPF sections versus non-EPF sections.

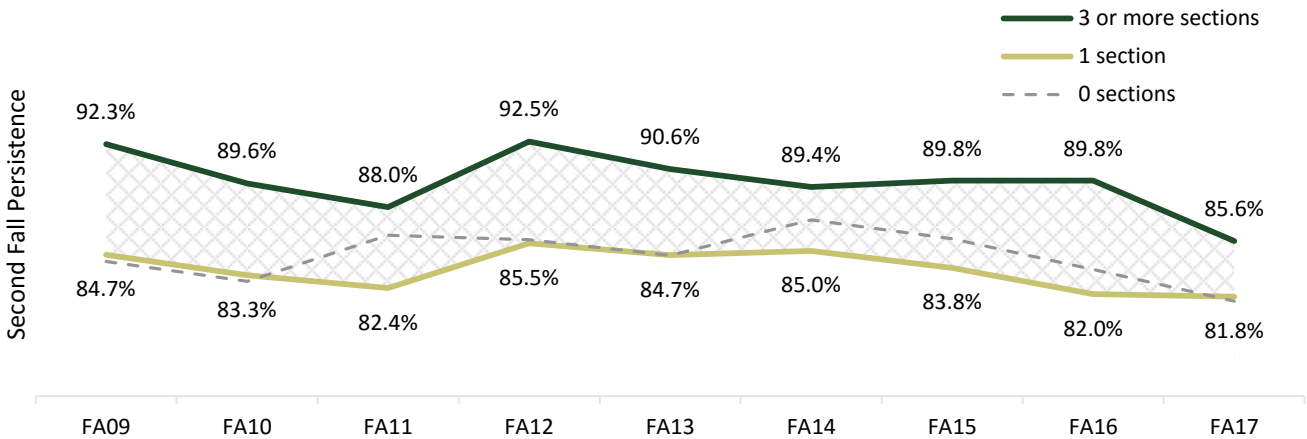
EPF and Second Fall Persistence

Given the rapid growth of the EPF program, most students have the opportunity to participate in EPF at least once during their first term. Table 10 (p. 16) displays the number of EPF sections in which FTFT students enrolled by first fall term. At its inception, about two-thirds of FA09 students were not exposed to any EPF course sections. This is the only cohort in which the majority of students were not enrolled in at least one EPF section. By FA18, the proportion of FTFT students who did not participate in EPF dropped to 12%. Since FA17 about half of students were enrolled in two or more EPF sections (with an additional one-third enrolled in just one EPF

section). For transfer students (Table 11, p. 16), immersion in EPF is less pronounced. Between FA09 and FA15, the majority of transfer students did not participated in any EPF sections during their first terms at CSU. For FA17 and FA18 about one-third participated in two or more EPF sections.

Figure 3 examines the relationship between the number of EPF sections and second fall persistence for FTFT students.

Figure 3. Second Fall Persistence and Number of EPF Sections for FTFT Students During First Fall by Cohort



See Table 12, p. 17

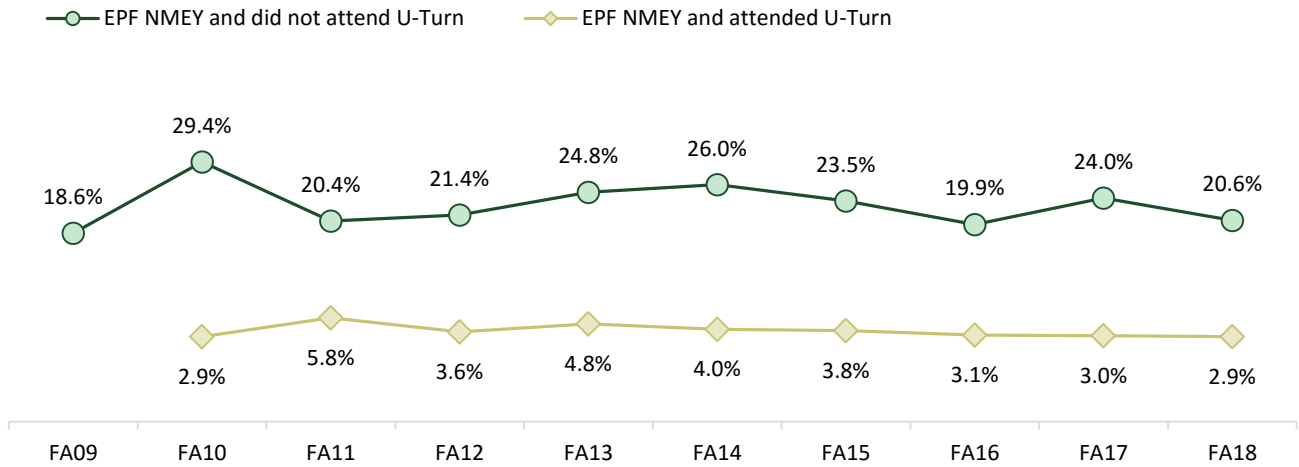
Overall, second fall persistence is slightly higher for FTFT students participating in three or more EPF sections compared to those enrolled in just one section. For the FA10 through FA16 cohorts, students participating in three or more EPF sections had second fall persistence rates about 6 PP higher, on average, compared to their peers with only one EPF section. For the FA17 FTFT cohort, the PP gap in second fall persistence dropped to about 4 PP. While the FA09 cohort shows the one of the largest PP gap in persistence, less than 1% of FTFT students in this cohort enrolled in at least three EPF sections (about 40 students).

While FTFT students may benefit from a deep immersion in the EPF program, low numbers of transfer students with the same level of exposure to EPF make assessment difficult. Generally, 6% or less of transfer students enrolled in three or more EPF sections for FA09 through FA15 (though this has increased to over 10% for FA17 and FA18; Table 11, p. 16). Persistence rates for these transfer students tend to be lower than those with zero or one EPF section (see Table 13, p. 17). This could also be associated with the class level that transfer students bring with them to CSU.

U-Turn's Association with Course Success

As part of the EPF program, students tracking toward an unsuccessful course completion are issued a notification that they are “*Not meeting Expectations Yet*” (NMEY) and encouraged to attend U-Turn. This voluntary program, offered by TILT, provides students guidance and strategies to achieve academic success. Figure 4 displays the proportion of FTFT students in EPF sections who received an NMEY notification as well as those who attended U-Turn after receiving this notification during their first fall term.

Figure 4. First Fall EPF NMEY Notification and U-Turn Attendance by FTFT Cohort



Overall, of the FTFT students in EPF sections, about three in four students meeting expectations and one in five students *not* yet meeting expectations do not attend U-Turn (see Table 16, p. 17). Only 3% of students receive an NMEY notification and attend U-Turn (or, about 12% of the students who receive an NMEY notification). While most students receive only one EPF notification during their first fall, about 4%-5% receive two or more notifications (see Table 14, p. 17).

Methods

To assess the association of U-Turn participation on student success two logistic regression models are used. The first compares successful course completion and the second compares course withdrawal (W grade) with U-Turn attendance, while controlling for student type and student demographics. However, due to the small number of students attending U-Turn, course-level models were not feasible, thus the models control for course topic (natural or physical science versus other subject) and includes only those students who received an EPF NMEY notification for all available years of data (FA09 through FA18, a total of 21,741 notifications).

Results

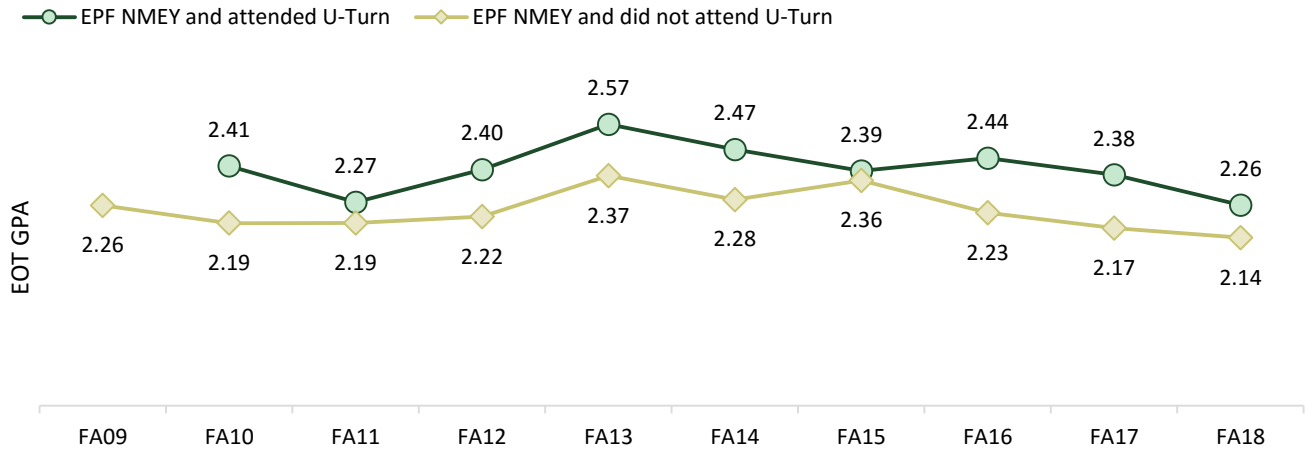
The first logistic regression model finds that U-Turn attendance has a negligible, *non-significant*, negative association with course success (0.95 odds ratio, or 5% lower odds of successful completion and 1.2 PP difference in the predicted probability of success; see Table 6, p. 14). Overall, for all terms, 48.7% of students who attended U-Turn, successfully completed their EPF section, compared to 48.3% for those that did not attend U-Turn (see Table 5, p. 14).

The second logistic regression model finds that U-Turn attendance has a *significant*, positive association with course withdrawal (1.45 odds ratio, or 45% higher odds of a W grade, which is a 3 PP difference in the W drop rates; see Table 7, p. 14) Table 5 (p. 14) displays the final course grade by U-Turn attendance for each term included in the study. Overall, students who attend U-Turn tend to drop courses in which they are tracking toward unsuccessful completions at a higher rate than those students who do not attend U-Turn. The PP gap in W-drop rates ranges between 1 PP and 5 PP for the three most recent terms (the model predicts a 3 PP gap).

Although an increase in W-drops is not a stated desired outcome from U-Turn attendance, there are positive academic outcomes associated with attendance. First, students who receive an NMEY notification and attend U-Turn have a higher term GPA compared those who receive an NMEY notification and do not attend U-Turn (see Figure 5). This is most likely due to students W-dropping rather than failing their EPF NMEY course. Second, the students that attend U-turn and W-drop a course enroll in credit recovery courses at a higher rate in the first fall

compared to the overall cohort. About 14% of students from the FA16 and FA17 FTFT cohorts that received an NMEY notification and attended U-Turn enroll in a credit recovery course compared to about 8% of the students in the cohort overall (see Table 20, p. 18). U-Turn attendance does not appear to be associated with higher levels of course success but students could be receiving advice that helps them maintain better academic progress (higher GPA and recouping credits) in their first fall.

Figure 5. First Fall EOT GPA by U-Turn Attendance by Cohort Term



Note: Includes only those students who received an EPF NMEY notification; see Table 18, p. 18.

The W-drop strategy adopted by U-Turn students results in slightly higher term GPAs, about 0.2 grade points, on average. While FA18 has one of the highest W-drop rates, the gap in GPA between U-Turn and non-U-Turn students is much smaller compared to other terms.

Summary of Findings

Overall, the EPF program has a positive association with course level success and is grounded in research on effective teaching practices. The following highlights some main findings from this report:

- EPF implementation increased from about 100 sections in 11 courses in FA09 to 485 sections in 52 courses in FA18.
- About 9 in 10 first time full time (FTFT) students participated EPF courses in FA18, which constituted 43% of their total credits for the term (about 6 credits per student on average). While fewer transfer students (67%) participated in EPF courses, the proportion of EPF credits for the term was similar (37%; about 5 credits per student on average).
- After controlling for student demographics and student type, EPF sections are associated with 27% higher odds of course success (A, B, C, or S grade) compared to students in the same course but not in an EPF section. On average, EPF participation increases a student’s predicted probability of success in a course by 2 percentage points (PP). These findings are very similar to the prior study.
- EPF participation's association with course success varies significantly by course and is negative for some courses. These variations in results could be due to differences in program implementation by instructors.
- FA09 is the only cohort in which the majority of students did not enroll in at least on EPF section. For the two most recent cohorts, FA17 and FA18, about 20% of students participated in three or more EPF sections.
- Overall, second fall persistence is slightly higher for students participating in three or more EPF sections in their first fall compared to those enrolled in just one section, indicating that in order for EPF to have a positive

association with persistence, FTFT students should experience EPF in at least three courses in their first fall semester.

- Of the FTFT students in EPF sections who receive an NMEY notification (about 28% each term), about 12% attend U-Turn; a student who receives an NMEY notification has 91.4% lower odds of completing the course successfully.
- U-Turn attendance was not significantly associated with course success; however, students who attend U-Turn have a higher W-drop rate than those who did not attend, resulting in higher term GPAs (about 0.2 grade points, on average).

Appendix

Terms Included in EPF versus Non-EPF Course Comparisons

The EPF comparison groups for each course included in the analysis are shown in the table below. In many cases, all sections within a course participated in EPF (E and shaded green), thus a non-EPF control comparison group (C and shaded pink) was selected from a recent (often prior) term. When a course included a mix of EPF and non-EPF sections, the comparison was made within the course (W and shaded blue).

This analysis focused on EPF student performance within the three most-recent fall terms, FA16, FA17, and FA18, despite many of the courses participating in the EPF program since its inception in FA09. The [original study](#) includes the analysis from these earlier terms. Historic EPF participation is noted below using lower case notation. The [Technical Appendix](#) (provided under separate cover) includes the regression models and course descriptives such as student race, W-drop rate, EPF Not Meeting Expectations Yet (NMEY) notifications, and U-Turn attendance for each course included in this study.

The table below does not present a comprehensive list of courses participating the EPF program. Several courses could not be included in the analysis due to lack of participation in recent terms, small sample sizes (less than 200 total students), or no available non-EPF control group. These include AMST101, BZ105, CHEM105, CO301B, CS160, CS163, CS164, ECE 103, HIST116, HIST150, INST200, MATH101, MATH105, MATH130, MATH180, and POLS101.

Table 2: Terms Included in EPF versus Non-EPF Course Comparisons

Course	Comparison type	FA07	FA08	FA09	FA10	FA11	FA12	FA13	FA14	FA15	FA16	FA17	FA18
AA100	Between									C	C	E	E
AA101	Between											E	C
AGRI116	Between											C	E
ANTH120	Between											C	E
BZ111	Between						C	C	C	e	E	E	E
BZ120	Between							C	C	C	E	E	E
CHEM103	Between											C	E
CHEM104	Between	C	C	C	e	e	e	e	e	e	E	E	E
CHEM107	Between				C	e	e	C	C	e	E	E	E
CHEM108	Between	C	C	e	e	e	e	e	e	e	E	E	E
CHEM111	Between	C	C	C	e	e	e	e	e	e	E	E	E
CHEM112	Between	C	C	e	e	e	e	e	e	e	E	E	E
CHEM113	Between				C	C	C	w	w	w	E	E	E
CHEM114	Between	C	C	C	e	e	e	e	e	e	E	E	E
CO130	Between							C	C	C	E	E	E
CO150	Between				C	C	w	w	w	w	w	E	E
CO300	Within												W
CS150	Between							C	C	w	w	E	E
ECON202	Within											W	W
ECON204	Within											W	
FSHN150	Between							C	C	C	E	E	E
GEOL120	Between							C	C	C	E	E	E
HES 145	Within											W	W
HIST100	Between			w	w	w		C	C	w	w	E	E
HIST101	Between			w	w	w	w				E	E	C

Course	Comparison type	FA07	FA08	FA09	FA10	FA11	FA12	FA13	FA14	FA15	FA16	FA17	FA18
HIST151	Within			w	w	w				w	W	W	W
HIST170	Within				w	w			w	w	W	W	
HIST171	Between			w	w	w	w		w	w	w	E	C
IE116	Between											C	E
LIFE102	Between	C	C	e	e	e	e	e	e	e	E	E	E
LIFE103	Between					C	C	C	e	e	E	E	E
MATH141	Between			C	C	C	e	e	e	e	E	E	E
MATH155	Between	C	C	e	e	e	e	e	e	e	E	E	E
MATH160	Between			w	w	w	w	w	w	w	E	C	E
MATH161	Within				e	e	e	e	e	e	e	W	W
PH110	Between											C	E
PH122	Between									C	C	E	E
PH141	Between						C	C	C	e	E	E	E
POLS131	Within											W	W
POLS232	Within											W	W
POLS241	Within												W
PSY 100	Between	C	C	C	e	e	e	e	e	e	E	E	E
SOC 100	Within											W	W
SOC 105	Between											C	E
SPCM100	Between											C	E
SPCM130	Between											C	E
SPCM201	Between											C	E
SPCM207	Between											C	E

EPF Notifications and Course Success

These section-level data display the rates of course success by EPF notification status. Because the majority of students are enrolled in multiple EPF sections, an individual student may be counted more than once across multiple categories.

Table 3: Course Grade and EPF Notification Status by Term

		FA09	FA10	FA11	FA12	FA13	FA14	FA15	FA16	FA17	FA18	Overall
Meeting expectations	A, B, C, or S grade	85.5%	88.2%	88.5%	90.2%	91.4%	91.1%	89.0%	90.6%	92.4%	91.6%	90.4%
	D, F, or U grade	12.6%	10.5%	9.8%	8.4%	7.3%	7.2%	9.3%	8.2%	6.8%	7.5%	8.3%
	W grade	1.7%	1.0%	1.5%	1.3%	1.1%	1.5%	1.5%	1.0%	0.8%	0.8%	1.1%
Not meeting expectations yet	A, B, C, or S grade	47.6%	50.9%	45.6%	48.8%	50.9%	50.7%	46.1%	48.3%	49.2%	45.9%	48.3%
	D, F, or U grade	39.0%	37.1%	42.9%	41.7%	40.5%	38.5%	40.9%	40.9%	41.7%	43.3%	40.9%
	W grade	11.7%	11.6%	11.1%	9.4%	8.2%	10.6%	12.6%	10.5%	8.8%	10.7%	10.4%

Note: Includes only EPF sections

Table 4: Association of EPF NMEY notification with Course Success

Variables in the Equation	B	S.E.	Wald	df	Sig.	Odds ratio
EPF NMEY notification	-2.448	0.029	7217.245	1	0.000	0.086
Natural and physical sciences course	-0.399	0.030	178.359	1	0.000	0.671
Constant	2.621	0.027	9672.928	1	0.000	13.746
Number of cases included in analysis	45,117					
Correctly predicted	84.9%					
Nagelkerke R ²	0.272					

Note: Includes only EPF sections from FA16, FA17, and FA18 courses

U-Turn Attendance and Course Success

These section-level data display the rates of course success by U-Turn attendance for students in EPF sections who received a NMEY notification. Because the majority of students are enrolled in multiple EPF sections, an individual student may be counted more than once across multiple categories.

Table 5: Course Grade and U-Turn Attendance by Term among Students Who Receive an NMEY Notification

		FA09	FA10	FA11	FA12	FA13	FA14	FA15	FA16	FA17	FA18	Overall
Did not attend U-Turn	A, B, C, or S grade	47.6%	50.6%	46.0%	48.4%	51.1%	50.3%	46.3%	47.7%	48.9%	46.5%	48.3%
	D, F, or U grade	39.0%	37.3%	43.3%	42.2%	40.8%	39.2%	40.6%	41.5%	42.1%	43.1%	41.2%
	W grade	11.7%	11.6%	10.3%	9.3%	7.7%	10.3%	12.6%	10.4%	8.6%	10.3%	10.2%
Attended U-Turn	A, B, C, or S grade	NA	55.1%	43.2%	51.9%	49.8%	54.9%	44.6%	54.1%	52.5%	39.2%	48.7%
	D, F, or U grade	NA	33.9%	40.8%	37.2%	38.0%	31.2%	43.1%	33.8%	36.7%	45.4%	38.3%
	W grade	NA	11.0%	15.4%	10.4%	11.8%	13.9%	12.3%	11.7%	10.8%	15.0%	12.7%

Note: Includes only those students who received an EPF NMEY notification

Table 6: U-Turn Attendance Association with Course Success

Variables in the Equation	B	S.E.	Wald	df	Sig.	Odds ratio
Attended U-Turn	-0.050	0.049	1.037	1	0.308	0.951
First generation, minoritized, nonresident, or Pell student	-0.163	0.014	129.222	1	0.000	0.850
Female	0.238	0.028	71.841	1	0.000	1.269
New or transfer student	0.331	0.028	136.104	1	0.000	1.392
Natural and physical sciences course	-0.748	0.032	563.065	1	0.000	0.473
Constant	0.364	0.037	95.341	1	0.000	1.440
Number of cases included in analysis	21,741					
Correctly predicted	59.0%					
Nagelkerke R ²	0.060					

Note: Includes only those students who received an EPF NMEY notification

Table 7: U-Turn Attendance Association with Course Withdrawal

Variables in the Equation	B	S.E.	Wald	df	Sig.	Odds ratio
Attended U-Turn	0.369	0.074	24.676	1	0.000	1.446
First generation, minoritized, nonresident, or Pell student	-0.013	0.023	0.323	1	0.570	0.987
Female	-0.251	0.046	30.163	1	0.000	0.778
New or transfer student	-0.308	0.046	45.157	1	0.000	0.735
Natural and physical sciences course	0.865	0.063	191.165	1	0.000	2.375
Constant	-2.591	0.070	1386.205	1	0.000	0.075
Number of cases included in analysis	21,741					
Correctly predicted	89.6%					
Nagelkerke R ²	0.033					

Note: Includes only those students who received an EPF NMEY notification

Student Cohorts

The following table display characteristics of the FTFT and transfer cohorts in this study. These analyses are unique by student and reflect student level outcomes (e.g. persistence) rather than section level outcomes (i.e. course grades). Reported percentages for racial and ethnic classifications are not mutually exclusive as students may identify with more than one racial or ethnic group.

Table 8: Student Characteristics by FTFT Cohort

	FA09	FA10	FA11	FA12	FA13	FA14	FA15	FA16	FA17	FA18
Cohort size	4,203	4,369	4,419	4,449	4,373	4,284	4,663	4,839	4,905	5,269
EPF section enrollment	35.6%	64.0%	66.6%	68.5%	67.5%	61.1%	64.8%	77.5%	84.3%	87.6%
Female	55.4%	55.9%	55.6%	55.7%	54.8%	54.9%	53.2%	56.1%	54.0%	54.0%
Nonresident	21.5%	20.4%	22.9%	25.2%	26.0%	27.5%	30.3%	31.8%	33.5%	36.8%
First generation	24.6%	23.2%	25.8%	26.1%	24.0%	23.8%	25.6%	22.3%	22.2%	22.1%
Pell recipient	18.2%	22.0%	24.2%	22.7%	21.2%	20.8%	20.3%	20.3%	21.4%	18.9%
Minoritized	15.5%	16.5%	19.0%	19.3%	20.4%	20.5%	21.2%	24.7%	27.0%	27.3%
Hispanic/Latinx	8.2%	8.5%	10.6%	10.6%	11.9%	12.1%	12.5%	14.4%	16.8%	16.4%
American Indian/Native American	2.1%	2.0%	2.2%	2.5%	2.5%	2.0%	1.9%	2.1%	2.9%	3.3%
Asian/Hawaiian/Pacific Islander	3.6%	4.0%	4.2%	4.8%	4.8%	4.9%	5.4%	6.8%	7.0%	7.3%
Black/African American	3.0%	3.3%	4.0%	3.6%	3.3%	3.4%	3.6%	4.4%	4.2%	4.3%
Multi-race	2.9%	3.5%	4.2%	5.2%	4.6%	1.7%	3.3%	4.9%	5.7%	6.0%
International	0.6%	0.8%	0.8%	1.2%	1.4%	1.9%	2.1%	1.7%	1.7%	1.6%
Undeclared major	29.1%	28.3%	26.0%	28.5%	26.1%	24.9%	26.3%	21.7%	24.0%	21.9%
CCHE Index	114.5	114.2	115.2	114.9	115.2	115.2	115.0	115.8	115.6	115.5
First Fall cumulative GPA	2.82	2.80	2.86	2.91	2.92	2.91	2.92	2.92	2.88	2.95
Second Fall persistence	84.6%	83.5%	84.7%	86.6%	86.0%	86.6%	86.2%	83.6%	83.1%	NA

Table 9: Student Characteristics by Transfer Cohort

	FA09	FA10	FA11	FA12	FA13	FA14	FA15	FA16	FA17	FA18
Cohort size	1,135	1,216	1,355	1,224	1,273	1,244	1,452	1,476	1,367	1,440
EPF section enrollment	16.7%	35.0%	36.8%	40.3%	39.3%	38.7%	42.6%	56.0%	64.2%	67.0%
Female	47.8%	42.8%	47.0%	48.6%	47.3%	46.5%	50.4%	46.7%	49.4%	49.4%
Nonresident	15.7%	17.4%	24.6%	23.4%	25.5%	28.7%	32.9%	33.6%	30.9%	33.1%
First generation	32.1%	32.7%	32.5%	33.9%	32.2%	30.4%	33.4%	30.6%	34.5%	36.1%
Pell recipient	27.2%	30.3%	31.6%	32.9%	30.4%	30.1%	27.5%	29.5%	30.9%	28.5%
Minoritized	11.1%	13.4%	14.1%	15.7%	15.6%	15.7%	16.0%	20.3%	21.1%	24.3%
Hispanic/Latinx	6.3%	7.6%	8.0%	9.9%	8.5%	9.2%	9.5%	12.2%	12.9%	15.6%
American Indian/Native American	1.3%	1.3%	2.2%	1.7%	2.2%	2.2%	2.4%	2.8%	2.0%	2.9%
Asian/Hawaiian/Pacific Islander	2.5%	5.3%	5.0%	4.5%	4.4%	6.1%	6.3%	6.8%	9.2%	8.4%
Black/African American	1.3%	2.1%	2.0%	2.3%	2.7%	2.4%	2.2%	3.1%	3.9%	4.0%
Multi-race	1.9%	3.1%	3.1%	3.4%	3.5%	0.1%	3.9%	4.3%	4.5%	5.3%
International	1.4%	3.2%	6.8%	7.6%	9.7%	10.5%	11.6%	10.4%	10.2%	9.0%
Undeclared major	25.8%	28.9%	23.6%	23.9%	20.2%	19.0%	21.8%	18.0%	16.6%	15.7%
CCHE Index	107.2	106.6	107.6	107.8	107.2	107.8	94.8	95.4	107.6	108.4
First Fall cumulative GPA	2.76	2.71	2.82	2.87	2.90	2.94	2.89	2.90	2.93	2.89
Second Fall persistence	86.3%	85.9%	84.9%	87.1%	87.5%	88.3%	86.6%	85.8%	85.4%	NA

Table 10: Distribution of FTFT Cohort by EPF Section Count

	FA09	FA10	FA11	FA12	FA13	FA14	FA15	FA16	FA17	FA18
None	64.4%	36.0%	33.4%	31.5%	32.5%	38.9%	35.2%	22.5%	15.7%	12.4%
1 section	28.8%	38.5%	36.4%	37.5%	37.0%	35.4%	34.2%	38.5%	31.6%	30.7%
2 sections	5.9%	16.9%	19.7%	19.6%	17.1%	15.6%	17.4%	24.2%	31.0%	32.3%
3 or more sections	0.9%	8.6%	10.5%	11.4%	13.4%	10.1%	13.2%	14.8%	21.7%	24.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 11: Distribution of Transfer Cohort by EPF Section Count

	FA09	FA10	FA11	FA12	FA13	FA14	FA15	FA16	FA17	FA18
None	83.3%	65.0%	63.2%	59.7%	60.7%	61.3%	57.4%	44.0%	35.8%	33.0%
1 section	15.0%	24.3%	26.8%	29.1%	27.1%	28.6%	26.1%	31.9%	31.6%	34.4%
2 sections	1.6%	8.9%	8.3%	9.6%	8.9%	8.0%	10.7%	15.9%	21.0%	21.8%
3 or more sections	0.1%	1.9%	1.8%	1.6%	3.3%	2.1%	5.9%	8.1%	11.6%	10.8%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 12: Second Fall Persistence by EPF Section Count by FTFT Cohort

	FA09	FA10	FA11	FA12	FA13	FA14	FA15	FA16	FA17	FA18
None	84.2%	82.9%	86.0%	85.7%	84.7%	87.1%	85.8%	83.7%	81.5%	NA
1 section	84.7%	83.3%	82.4%	85.5%	84.7%	85.0%	83.8%	82.0%	81.8%	NA
2 sections	87.1%	82.3%	84.9%	86.8%	87.6%	87.4%	88.9%	82.3%	83.4%	NA
3 or more sections	92.3%	89.6%	88.0%	92.5%	90.6%	89.4%	89.8%	89.8%	85.6%	NA

Table 13: Second Fall Persistence by EPF Section Count by Transfer Cohort

	FA09	FA10	FA11	FA12	FA13	FA14	FA15	FA16	FA17	FA18
None	86.9%	86.7%	85.5%	88.0%	88.5%	88.5%	89.1%	87.1%	87.1%	NA
1 section	82.9%	85.4%	85.1%	85.4%	86.4%	88.8%	83.1%	86.0%	84.3%	NA
2 sections	83.3%	81.5%	80.4%	88.9%	85.0%	86.9%	86.4%	84.3%	84.7%	NA
3 or more sections	100.0%*	87.0%*	79.2%*	75.0%*	85.7%*	84.6%*	77.6%	81.7%	84.9%	NA

* Less than 50 students in each of these terms participated in 3 more EPF sections; use caution when interpreting these data.

Table 14: Distribution of FTFT Cohort by Number of EPF NMEY Notifications Received during First Fall

	FA09	FA10	FA11	FA12	FA13	FA14	FA15	FA16	FA17	FA18
None	81.4%	67.7%	73.8%	75.0%	70.3%	70.0%	72.7%	76.9%	73.0%	76.5%
1 notification	17.4%	27.8%	21.9%	21.9%	26.1%	25.8%	24.0%	19.8%	22.0%	19.7%
2 or more	1.3%	4.5%	4.3%	3.1%	3.6%	4.2%	3.3%	3.3%	5.0%	3.8%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 15: Distribution of Transfer Cohort by Number of EPF NMEY Notifications Received during First Fall

	FA09	FA10	FA11	FA12	FA13	FA14	FA15	FA16	FA17	FA18
None	78.8%	65.7%	70.7%	68.8%	63.0%	64.9%	62.4%	70.2%	72.1%	70.9%
1 notification	19.6%	29.8%	24.2%	30.2%	33.6%	31.0%	31.7%	23.0%	23.6%	25.0%
2 or more	1.6%	4.5%	5.0%	1.0%	3.4%	4.2%	6.0%	6.8%	4.3%	4.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 16: EPF Notification Status and U-Turn Participation by FTFT Cohort

	FA09	FA10	FA11	FA12	FA13	FA14	FA15	FA16	FA17	FA18
EPF ME and did not attend U-Turn	81.4%	67.1%	72.7%	74.0%	69.0%	69.3%	71.4%	75.2%	72.6%	75.8%
EPF ME and attended U-Turn	0.0%	0.6%	1.1%	1.0%	1.3%	0.7%	1.3%	1.7%	0.4%	0.7%
EPF NMEY and did not attend U-Turn	18.6%	29.4%	20.4%	21.4%	24.8%	26.0%	23.5%	19.9%	24.0%	20.6%
EPF NMEY and attended U-Turn	0.0%	2.9%	5.8%	3.6%	4.8%	4.0%	3.8%	3.1%	3.0%	2.9%

Table 17: EPF Notification Status and U-Turn Participation by Transfer Cohort

	FA09	FA10	FA11	FA12	FA13	FA14	FA15	FA16	FA17	FA18
EPF ME and did not attend U-Turn	78.8%	65.7%	70.1%	68.0%	62.6%	64.2%	61.9%	68.6%	71.9%	70.7%
EPF ME and attended U-Turn	0.0%	0.0%	0.6%	0.8%	0.4%	0.6%	0.5%	1.6%	0.2%	0.2%
EPF NMEY and did not attend U-Turn	21.2%	32.9%	25.3%	28.8%	33.2%	32.0%	34.9%	27.6%	24.9%	25.9%
EPF NMEY and attended U-Turn	0.0%	1.4%	4.0%	2.4%	3.8%	3.1%	2.7%	2.2%	3.0%	3.2%

Table 18: Term GPA by EPF Notification Status and U-Turn Participation by FTFT Cohort

	FA09	FA10	FA11	FA12	FA13	FA14	FA15	FA16	FA17	FA18
EPF ME and did not attend U-Turn	2.93	3.04	3.04	3.10	3.10	3.12	3.12	3.09	3.12	3.18
EPF ME and attended U-Turn	NA	3.02	2.93	2.61	3.17	2.84	3.08	2.97	2.78	2.70
EPF NMEY and did not attend U-Turn	2.26	2.19	2.19	2.22	2.37	2.28	2.36	2.23	2.17	2.14
EPF NMEY and attended U-Turn	NA	2.41	2.27	2.40	2.57	2.47	2.39	2.44	2.38	2.26

Table 19: Term GPA by EPF Notification Status and U-Turn Participation by Transfer Cohort

	FA09	FA10	FA11	FA12	FA13	FA14	FA15	FA16	FA17	FA18
EPF ME and did not attend U-Turn	2.82	2.75	3.02	2.96	3.01	3.08	3.00	3.07	3.17	3.13
EPF ME and attended U-Turn	NA	NA	2.89	2.79	3.31	3.19	3.35	2.99	2.98	3.64
EPF NMEY and did not attend U-Turn	1.87	1.97	1.93	2.13	2.25	2.25	2.17	2.19	2.17	2.10
EPF NMEY and attended U-Turn	NA	2.23	1.95	2.68	2.14	2.42	1.94	2.61	2.22	2.00

Table 20: Credit Recovery Course Enrollment by U-Turn Participation by FTFT Cohort

		FA14	FA15	FA16	FA17	FA18	Overall
Cohort overall		11.3%	8.5%	6.7%	9.2%	7.3%	8.5%
	Did not attend U-Turn	11.9%	8.9%	7.0%	11.5%	9.2%	9.9%
	Attended U-Turn	15.6%	9.4%	14.3%	11.9%	14.3%	13.0%
EPF NMEY	Overall	12.4%	9.0%	7.9%	11.6%	9.9%	10.4%

Note: Includes only those students who W-dropped a course; credit recovery courses became available starting in FA14

Table 21: Credit Recovery Course Enrollment by U-Turn Participation by Transfer Cohort

		FA14	FA15	FA16	FA17	FA18	Overall
Cohort overall		4.6%	7.2%	10.8%	5.7%	6.5%	7.1%
	Did not attend U-Turn	2.3%	4.5%	13.8%	4.1%	10.9%	7.3%
	Attended U-Turn	0.0%	0.0%	20.0%	33.3%	0.0%	11.4%
EPF NMEY	Overall	2.0%	4.3%	14.3%	7.2%	9.3%	7.8%

Note: Includes only those students who W-dropped a course; credit recovery courses became available starting in FA14