



BMCC Student Affairs Peer Mentoring Program Evaluation

Office of Institutional Effectiveness and Analytics

There were 1,755 mentor/mentee program participants with available data from fall term 2014 to fall term 2018. Of these, there were 336 students recruited as mentors. With duplicated count since fall 2014, there were 250 program participants on average per semester.

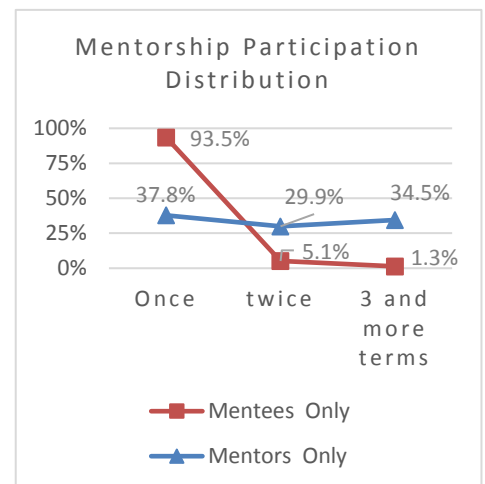
MENTORSHIP PROGRAM PARTICIPANT DEMOGRAPHIC DISTRIBUTION

The demographic distribution of the participants in the program is based on data from the students' first term enrolled at BMCC, as far back as the year 2013. Special features of mentoring program participants were:

1. **Ethnicity:** Hispanic students constituted the largest portion of mentoring program participant (33%). However, Asian program participants had the highest rate of being mentors (31%), which over-represents their numbers among the BMCC student population (about 14% Asian).
2. **Age:** Most participants were younger than 19, but highest percentage of mentors were in the age group 20 to 22.
3. **Major:** Three majors have previously been found to predict retention at BMCC: Liberal Arts, Accounting, and Criminal Justice. The proportion of Liberal Arts and Criminal Judgment majors were lower for the mentorship program group than for BMCC students overall, and among mentors, Accounting was a more common major than in the overall population.
4. **Success Programs:** 15% of mentorship program participants were also ASAP participants, considerably higher than the 6% of the overall population that is involved with ASAP.
5. **Nonresident Alien:** Even more over-represented in the mentorship program are the non-resident alien students. Over 21% of the mentorship program participants are non-resident aliens compared to just 5.5% of the overall BMCC population.

TABLE 1. DISTRIBUTION OF PROGRAM PARTICIPANTS RECEIVING MENTORING

Program Involved Times	Program Members Count ¹	Percent	Mentees Only Count ²	Percent	Mentors Only Count	Percent
Once	1,454	83.1%	1,327	93.5%	127	37.8%
Twice	173	10.8%	73	5.1%	100	29.9%
3 or More Terms	128	8.4%	19	1.3%	109	34.5%
Total	1,755	100%	1,419	100%	336	100%



1 Program participants include both mentees and mentors

2 A student may be a mentee before being recruited as a mentor, so the category here are members who had never been mentors and there are not duplicated counts of each time categories

COURSE OUTCOME EVALUATION FOR MENTORING PROGRAM EFFECT

It is not appropriate to evaluate the mentoring program effect based on the program participants and all the other college students because sample sizes are not equal, and students are not randomly assigned to be mentees or mentors, which may introduce bias into the evaluation results. In order to avoid biased results, students' academic outcomes were compared to matched samples, and the using a matching method introduced in Appendix III. Evaluation results are shown in three outcomes: counts of passed courses, semester-end cumulative GPA, and semester-end passed sum of credits and hours.

I. COUNTS OF PASSED COURSES – COURSES TAKEN IN THE FIRST YEAR ONLY

The following tables showed averaged course outcomes comparing all program participants and the paired students at the end of the first year. Percentages in Table 2 reflect the number of credits plus hours in the first case, or the number of courses attempted in the second case, as a percentage of those attempted in the first year.

TABLE 2. PASSED CREDITS/HOURS AND PASSED COURSES RATIOS OF PROGRAM PARTICIPANTS AND MATCHED PAIRS

	All participants		Matched students		Mean Difference	
	Credits + Hours	Courses	Credits + Hours	Courses	Credits + Hours	Courses
% Passed of Attempted:						
Percentage	79.8%***	74.0%***	71.8%	62.9%	8.0%	11.1%
Number of Students	1,612		1,614			

Please refer to Appendix IV for detailed calculation method.

Note. *** The results for Mentoring Program Participants are significantly different than those of the matched group. $p < 0.001$.

In Table 3, we present the average rate of students withdrawing from courses, and the average "DFWI" rate for students. DFWI refers to receiving grades of D or F, or any withdraw (W, WU, WD, or WN grades) or Incomplete grade.

TABLE 3. AVERAGE RATES FOR COURSE WITHDRAWALS AND DFWI GRADES FOR PROGRAM PARTICIPANTS AND MATCHED PAIRS

(The lower the percentages, the better performance)

	All participants		Matched students		Mean Difference	
	Withdrawals	DFWI Grades	Withdrawals	DFWI Grades	Withdrawals	DFWI Grades
% of Courses Enrolled:						
Percentage	8.5%***	21.5%***	16.1%	28.0%	- 7.6%	- 6.5%
Number of Students	1,612		1,614			

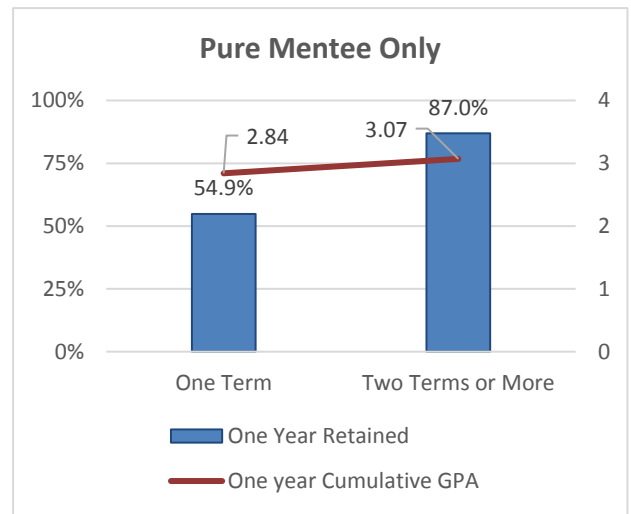
Note. *** The results for Mentoring Program Participants are significantly different than those of the matched group. $p < 0.001$.

II. PROGRAM INTERVENTION PERIOD COMPARISON

The purpose of this section is to explore if the length of involvement in the program is associated with the growth of students' GPA or retention rate. Evaluated outcomes included only pure mentees (a student who has never been a mentor). Students' outcomes were from students' enrollment and grade history records.

TABLE 4. ONE YEAR OUTCOMES SINCE PROGRAM PARTICIPATION

# of Terms in Program	Number	One Year Retained %	One Year Cumulative GPA
One Term	1,327	54.9%	2.84
Two Terms or More	92	87.0%*	3.07*
Average	1,419	56.9%	2.85



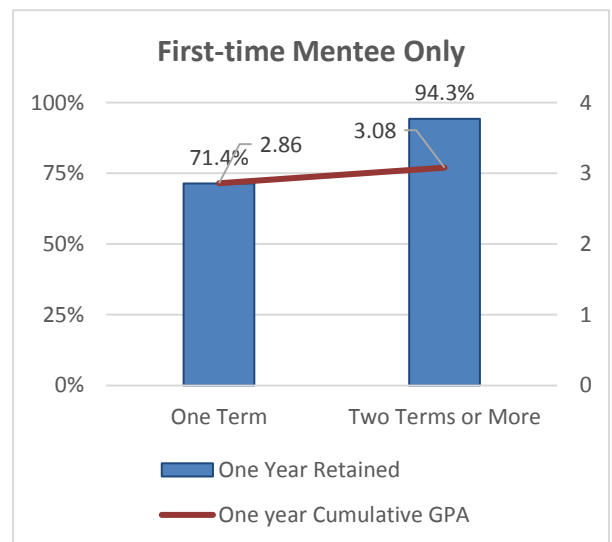
Note. * The results for two terms or more are significantly higher than one term at $p < 0.05$.

FIRST-TIME NEW FRESHMEN MENTEES

Not every mentee who participated in the program started in a fall term. Because course contents are different in fall and spring, in order to explore the pure consecutive program effect, this report redefined the sample below: using the first-time freshman mentees. Selected sample are program members who were new freshmen and recruited into the program in their first fall term. In addition, first-time freshman members from cohort 2018 were excluded since their one year retention is not available.

TABLE 5. ONE-YEAR OUTCOMES OF FIRST-TIME FRESHMAN MEMBERS SINCE PROGRAM PARTICIPATION

# of Terms in Program	Number	One Year Retained %	One year Cumulative GPA
One Term	416	71.4%	2.86
Two Terms or More	35	94.3%*	3.08
Average	451	73.2%	2.88



Note. * The results for two terms or more are significantly higher than one term at $p < 0.05$.

III. SEMESTER GPA AND PASSED CREDITS AND HOURS – USING PROPENSITY SCORE MATCHED SAMPLE

The following tables showed academic outcomes between mentoring program participants and propensity score matched BMCC students (Appendix III for matching method). This section evaluated only outcomes of program participants who were involved in the mentoring program for two consecutive terms compared to the matched sample.

TABLE 6. GPA OF PARTICIPANTS WHO WERE ONLY MENTEES JOINED 2 TERMS

Semester GPA Comparison	1st Term		2nd Term	
	Program Participants	Matched Pairs	Program Participants	Matched Pairs
Number	64	62		
Mentees involved in Two Terms	3.03	2.72	3.15	2.97

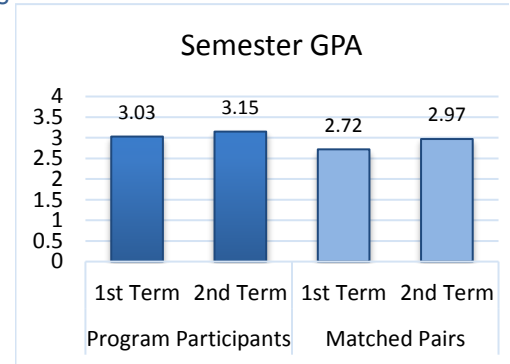
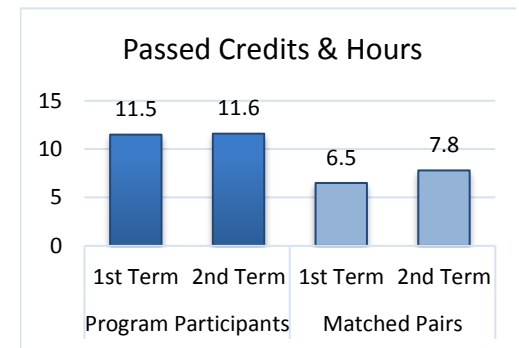


TABLE 7. CREDITS AND HOURS OF STUDENTS WHO WERE ONLY MENTEES JOINED 2 TERMS

Passed Credits and Hours Sum	1st Term		2nd Term	
	Program Participants	Matched pairs	Program Participants	Matched pairs
Number	64	62		
Mentees involved in Two Terms	11.5	6.5	11.6	7.8



GRADUATION AND RETENTION OUTCOMES FOR NEW FRESHMEN COHORTS

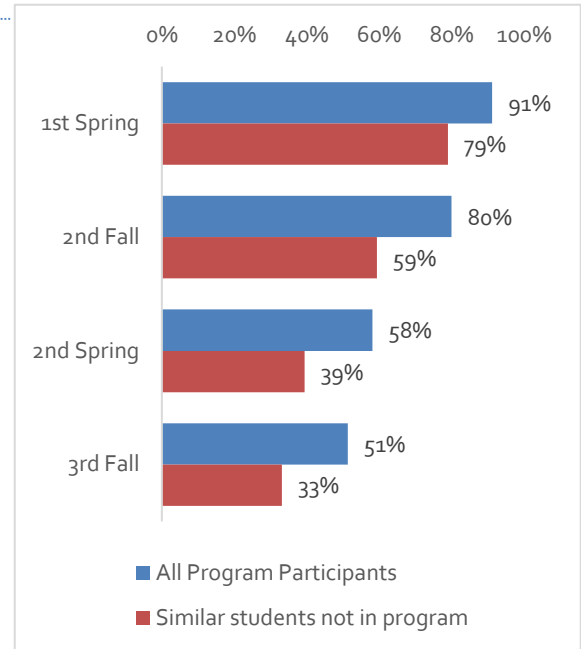
In order to evaluate retention and graduation rates, student outcome data was extracted from the IRDB Cohort Facts data. However, not every mentorship program participant was matched to a fall cohort. Thus, the reported sample size in the following tables was small and not quite as large as the overall number of mentorship program participants, so in the following tables, an overview of combined cohort results were provided to avoid over-sized effect of outcomes presented as percentages.

IV. EVALUATION FOR RETENTION RATE FROM COMBINED FOUR YEAR COHORT DATA

Retention results in the following tables were calculated from data in which mentorship participants matched to a combined fall cohort data set including four years of new freshmen from 2014 to 2017.

TABLE 8. RETENTION OF ALL MENTORSHIP PROGRAM PARTICIPANTS

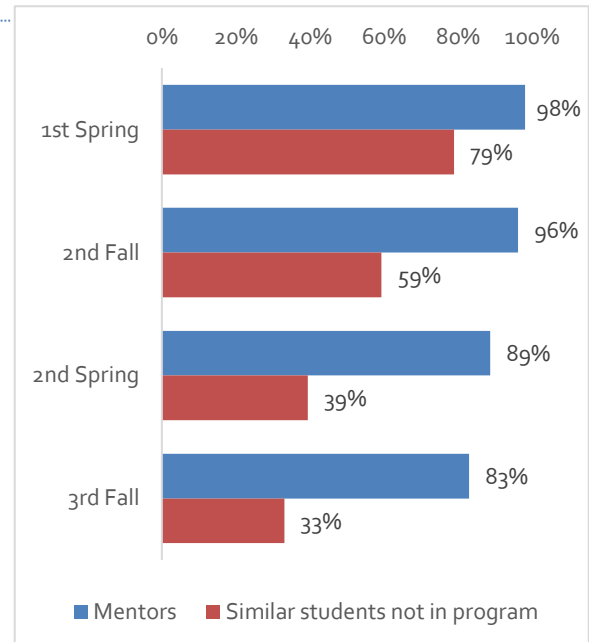
Continued Enrollment through:	1st Spring	2nd Fall ⁴	2nd Spring	3rd Fall
Count	665	583	424	374
All Mentorship Program Participants	91.2%	80.0%	58.2%	51.3%
Count	20,578	15,464	10,264	8,628
All Other Students in The Same Cohort	79.0%	59.3%	39.4%	33.1%



⁴ 2nd Fall = First Year Fall-to-Fall Retention

TABLE 9. RETENTION OF PROGRAM MENTORS

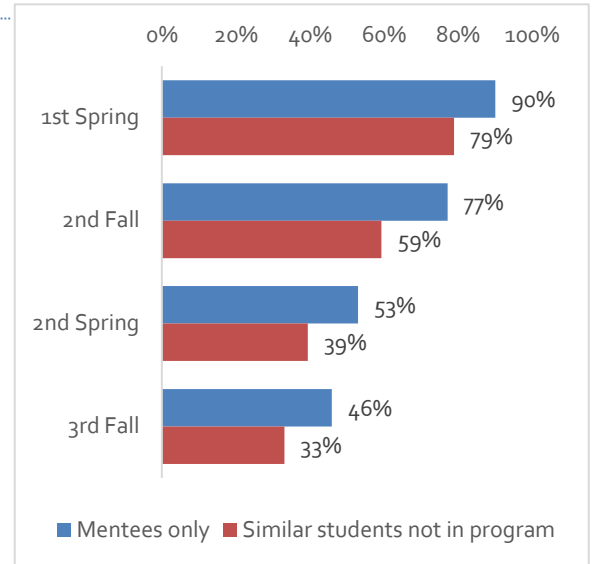
Continued Enrollment through:	1st Spring	2nd Fall	2nd Spring	3rd Fall
Count	104	102	94	88
Mentors ⁵	98.1%	96.2%	88.7%	83.0%
Count	20,578	15,464	10,264	8,628
All Other Students in The Same Cohort	79.0%	59.3%	39.4%	33.1%



⁵ Students identified as mentors may also have been mentees before being recruited as a mentor.

TABLE 10. RETENTION OF PROGRAM MENTEES ONLY

	Continued Enrollment through:	1st Spring	2nd Fall	2nd Spring	3rd Fall
Count		561	481	330	286
Mentees Only		90.0%	77.2%	53.0%	45.9%
Count		20,578	15,464	10,264	8,628
All Other Students in The Same Cohort		79.0%	59.3%	39.4%	33.1%



V. GRADUATION BY COHORT

The graduation rate was based on new freshmen separately reported by their beginning cohort year.

TABLE 11. GRADUATION RATE⁶ OF ALL MENTORSHIP PROGRAM PARTICIPANTS

Cohort Size	Group	Two-Year Graduation	Three-Year Graduation
Cohort 2014			
93	Mentorship program participant	17.2%	51.6%
6,978	All Other Students in The Same Cohort	3.7%	16.9%
Cohort 2015			
305	Mentorship program participant	14.1%	34.1%
6,507	All Other Students in The Same Cohort	4.8%	19.0%
Cohort 2016			
199	Mentorship program participant	17.1%	n/a
6,381	All Other Students in The Same Cohort	6.9%	n/a

TABLE 12. SUMMARY TABLE OF GRADUATION RATE

Summary	All Program Members	All Other Students
Total number of Cohort 2014-2016	597	19,866
Two year graduation	15.6%	5.1%
Total number of Cohort 2014-2015	398	13,485
Three year graduation	38.2%	17.9%

⁶ Graduation Rate includes earning a degree or certificate at any CUNY school.

TABLE 13. GRADUATION RATE OF MENTORS

Cohort Size	Group	Two-Year Graduation	Three-Year Graduation
Cohort 2014			
46	Mentors	26.1%	65.2%
6,978	All Other Students in The Same Cohort	3.7%	16.9%
Cohort 2015			
28	Mentors	39.3%	78.6%
6,507	All Other Students in The Same Cohort	4.8%	19.0%
Cohort 2016			
24	Mentors	45.8%	n/a
6,381	All Other Students in The Same Cohort	6.9%	n/a

TABLE 14. SUMMARY OF MENTORS' GRADUATION RATE

Summary	Mentors	All Other Students
Total number of Cohort 2014-2016	98	19,866
Two year graduation	34.7%	5.1%
Total number of Cohort 2014-2015	74	13,485
Three year graduation	70.3%	17.9%

TABLE 15. GRADUATION RATE OF PROGRAM MENTEES ONLY

Cohort Size	Group	Two-Year Graduation	Three-Year Graduation
Cohort 2014			
47	Mentees only	8.5%	38.3%
6,978	All Other Students in The Same Cohort	3.7%	16.9%
Cohort 2015			
277	Mentees only	11.6%	29.6%
6,507	All Other Students in The Same Cohort	4.8%	19.0%
Cohort 2016			
175	Mentees only	13.1%	n/a
6,365	All Other Students in The Same Cohort	6.9%	n/a

TABLE 16. SUMMARY OF MENTEES' GRADUATION RATE

Summary	Mentees only	All Other Students
Total number of Cohort 2014-2016	499	19,866
Two year graduation	11.8%	5.1%
Total number of Cohort 2014-2015	324	13,485
Three year graduation	30.9%	17.9%

FIG 1. PERCENT OF STUDENTS RETAINED (OR GRADUATED) BY TERM AND PROGRAM PARTICIPATION TYPE

(Matched to Combined Four Year Fall Cohorts Data)

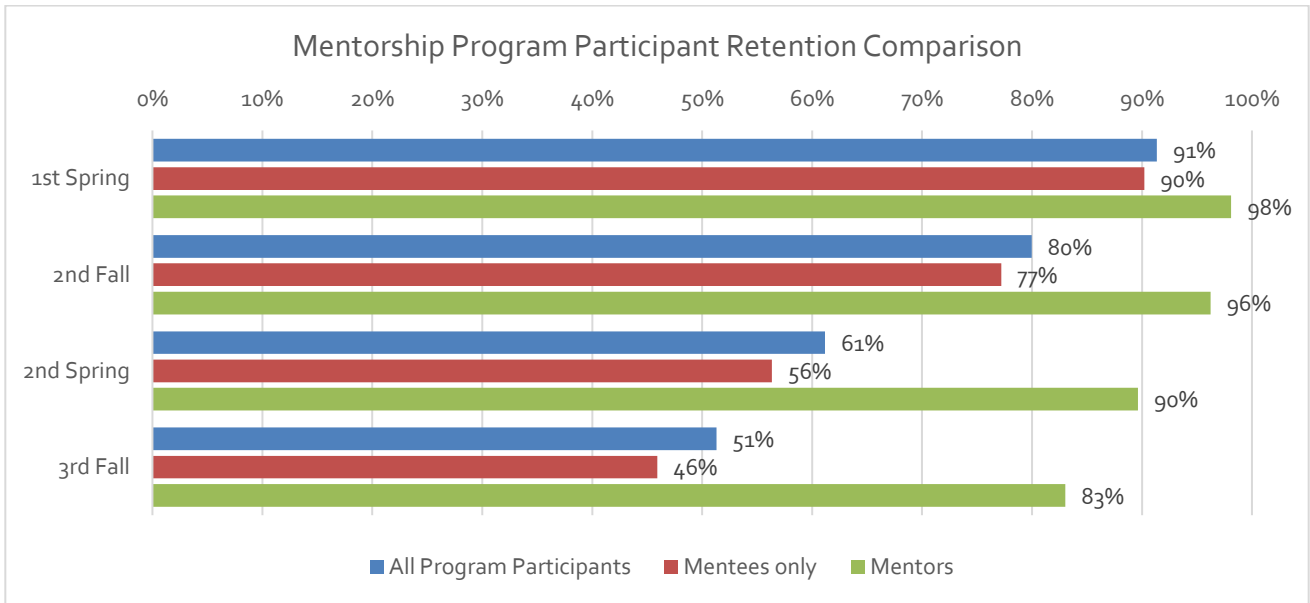


FIG 2. TWO YEAR GRADUATION RATE COMPARISON (COHORT 2014 TO 2016)

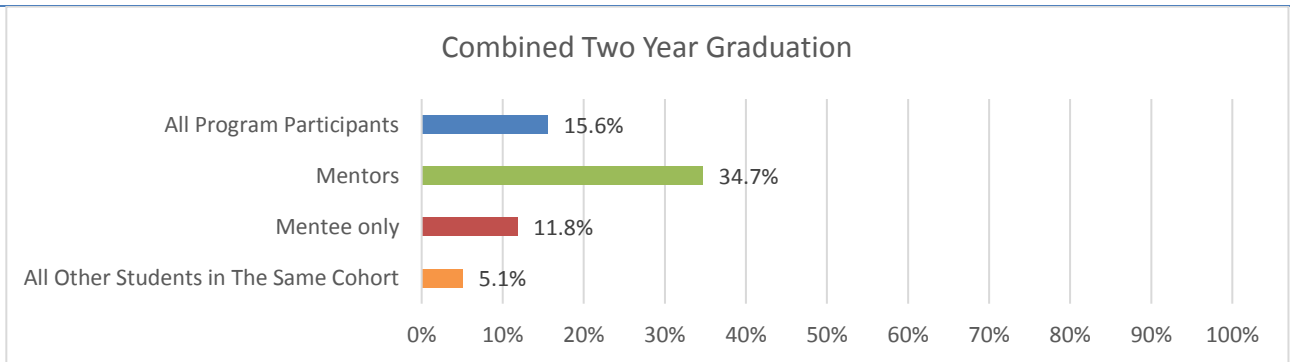
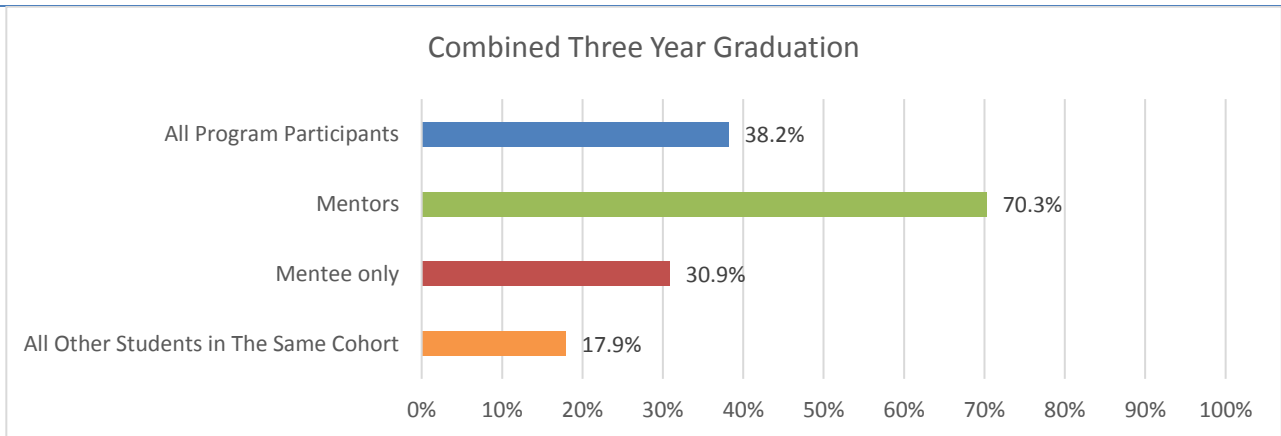


FIG 3. THREE YEAR GRADUATION RATE COMPARISON (COHORT 2014 TO 2015)



For More Information

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I. DATA PREPARATION

In order to evaluate retention outcome, this report used Cohort data from the IRDB “Cohort Facts.” Since the mentoring program started in 2014, this report extracted cohort data from Cohort 2014, and then cohort data from year 2014 to 2017 was combined. Because there is no available 2018 first year retention data yet, students enrolled in the cohort 2018 were not included. This combined data with four year cohorts is labeled as “cohort data.” When this data was matched to the mentoring program participant list, only 1067 program participants were found, and 869 of them were identified as first-time freshmen, an average of 217 program participants identified as New Freshmen per term.

For students’ cumulative GPAs, this report extracted student course and grade records from the IRDB “History Facts.” Since this report planned to evaluate two year outcomes and this program began in 2014, this report extracted students’ records from the year 2013 to the summer term of 2018. This data with five years of student grade records is labeled as “grade data.” Within grade data, there were 1,620 student-course records for program participants per term.

TABLE 1. PROGRAM PARTICIPANT DEMOGRAPHIC DISTRIBUTION (IN FIRST TERM OF PARTICIPATION)

Characteristics	Mentoring	Mentor	Others
Asian	22.6%	30.8%	13.8%
Black	32.9%	29.9%	32.2%
Hispanic	33.2%	21.2%	40.8%
White	11.1%	18.1%	12.9%
Female	64.1%	60.4%	56.6%
Male	35.9%	39.6%	43.4%
Full time	86.5%	92.5%	65.8%
Part time	13.5%	7.6%	34.2%
UNDER 19	33.6%	23.9%	29.5%
19	16.9%	17.8%	14.1%
20 - 22	23.9%	28.4%	23.0%
23 - 24	8.5%	16.0%	8.9%
25 - 29	8.8%	7.9%	12.2%
30 - 44	7.2%	4.8%	10.1%
45 & OVER	1.1%	1.2%	2.2%
First-time Freshmen	74.9%	60.4%	48.8%
LIB	24.2%	22.1%	27.1%
CRJ	8.4%	4.2%	9.0%
ACC	3.8%	5.1%	3.4%
ASAP	14.9%	10.9%	6.2%
CD	4.3%	1.5%	1.9%
Taken before first term cohort	26.6%	7.9%	17.5%
Any ESL	8.0%	3.0%	5.0%
Any Remedial	77.0%	32.6%	73.4%
Any SAT	0.8%	0.3%	2.2%
NY Resident	72.3%	52.6%	90.1%
Nonresident Alien	21.4%	39.6%	5.5%
Foreign born grow up in US	15.7%	32.6%	2.7%
Sample size since the year 2013	1620	331	88691

II. UNMATCHED CASES

At the beginning of the program, there were 36 recruited mentoring program participants in 2014. They were all trained as mentors, and half of 2014 mentors were identified in the cohort data 2014. However, the first year fall term analysis produced no data. The reason was that these 36 students' first term records were Fall 2013, and their first mentoring term started in Fall 2014, so the reported first term data of mentoring term was missing.

III. PROPENSITY SCORE MATCHING FOR ACADEMIC RESULT EVALUATION

The following were variables considered for matching. Categorical variables were recoded into dummy variables when possible. In SPSS, propensity matching probability was computed through a logistic regression that identified the variables mostly closely related to participation in the peer mentorship program.

These were found to be significantly related to participation in the peer mentorship Program:

Ethnicity, Gender, Age, Specific Majors (LIB, ACC, CRJ) previously shown to be related to retention, Full-time Status, Student Success Program Participation (ASAP, BLA, CD), ESL, Freshmen Year Experience Orientation Participation, Enrolled in Remedial Courses prior to Formal Enrollment, SAT taken, New York State Residency.

These variables did not reach significance levels for the model, and were then excluded:

New Student Status and Enrolled in Remedial Courses

IV. CALCULATION METHOD FOR SECTION II: COURSE RECORD AS EVALUATION UNIT

Two outcomes were considered in Section II. One was the ratio of passed credits plus hours of those attempted for each student. The other one was a count of how many courses a student had passed divided by all courses he/she attempted. Students' course data was extracted from the IRDB History Facts beginning in year 2013. Because the course taken history varied among students, this report only considered the first year (with two terms) for program effect evaluation. Students who took one or two courses in their first year were excluded.

V. CALCULATION METHOD FOR SECTION III: SEMESTER GPA AND PASSED CREDITS AND HOURS

This section showed academic outcomes of the terms *in which the mentoring program participants received mentoring*. If a student was *not* involved in the mentoring program in a particular term, that term is not included in the calculations for that student. The Matched Pair students, however, remain in the overall dataset for that term. This explains why the sample size differs between participants and matched students. The following table (Table 2) shows sample sizes for Mentees in the terms when they are receiving the service and the Matched Pair students who were found for that term. In addition, in order to display the pure mentoring program, the outcomes of students who were identified as mentors were excluded, that is, only outcomes of mentees who had never been mentors were analyzed for tables 4 and 5 (mentors were excluded).

Table 2. Sample Sizes for Mentees in the terms they are participating and for Matched students

1st Fall		1st Spring		2nd Fall		2nd Spring	
Mentee Only	Matched Pair	Mentee Only	Matched Pair	Mentee Only	Matched Pair	Mentee Only	Matched Pair
763	1,117	186	748	82	450	49	301

Table 3. Evaluation Sample Size of Program Participants' Involved Mentoring Terms in First Two Years

Terms Involved	1st Fall	1st Spring	2nd Fall	2nd Spring
1 Term	702	147	101	80
2 Terms	72	70	65	52
More Than 2 Terms	51	64	79	68
Total	825	281	245	200