



Purpose

Recent research from a peer institution found campus recreation activity was positively correlated with students' academic success. To better understand this relationship at CSU, it is of interest to examine whether undergraduate students' CSU recreation center usage is positively associated with student success outcomes. This information is intended to assist students with healthy (academic and physical) decisions and determines whether there is empirical evidence at CSU for the relationship between recreation fitness and student success.

Executive Summary

- The academic year 15-16 supports a positive relationship between visits to the recreation center/intramural team participation and student success.
 - Half of all enrolled undergraduates visited the recreation center and 12% played on an intramural team in AY15-16. Visits and participation varies some by student characteristic. For instance, 71% of new students visit the recreation center at least once, while only 44% of transfer and continuing students visit once.
 - Undergraduate students who visited the recreation center at least once or played on at least one recreation center intramural team have better term GPAs and are more likely to persist than those who do not visit the recreation center or participate on an intramural team even after controlling for academic index and student characteristics.
 - Students' spring 2016 term GPAs were all significantly higher for recreation center visitors and intramural participants than for students who did not visit the recreation center or play on an intramural team in the AY15-16 regardless of what student characteristic was examined with the exception of Pell recipients and transfer students.
 - Among recreation center visitors and team players, frequency of recreation center visits significantly correlated with higher term grades and persistence; however, number of intramural teams did not correlate with higher student success outcomes.
- There is some evidence of disproportionate GPA gaps among visitors and intramural participants within a characteristic.
 - The largest term GPA advantage when comparing recreation center visits and intramural team participation was for new students. There was little to no GPA gains increases among Pell recipients and transfer students.
 - Non-Pell, non-minority, continuing generation, females, and new students' GPAs appear to be impacted more positively from visiting the recreation center compared to visitors who were Pell students, minority students, first generation students, males, and continuing students.



Background

The study analyzed over 20,000 undergraduate students' recreational frequency for the 2015-16 academic year. Frequency was captured by a student's number of visits to the recreation center and participation in intramural sports. The study does not examine the duration of the visit nor if the frequency differed from the previous academic year. It also does not examine frequency by term; therefore, potentially all recreation activity could occur in one semester.

Population

This analysis includes all students enrolled at CSU as RI, undergraduates for both fall 2015 and spring 2016 semesters ($n = 20,266$). This population was divided into recreation center visitors (at least one use during the academic year) ($n = 10,040$)¹ and non-users ($n = 10,226$) and intramural team participants ($n = 2,450$) and non-participants ($n = 17,816$). Additionally, frequency of visits was analyzed among visitors (students who never went to the recreation center were excluded) ($n = 10,040$) and team participants (students who did not participate in at least one intramural team were excluded) ($n = 2,450$). See Table A in the Appendix for detailed population sizes by student characteristics.

Interpreting the Results

A small p-value indicates the results are less likely due to chance. Stated otherwise, smaller p-values indicate more significant results. Results yielding a p-value of .05 are considered statistically significant. Please note the large group sizes make it more likely you will extrapolate significant results; therefore, for a statistically significant result ($p < .05$), an effect size, reported as Cohen's d , is included for enhanced interpretation. An effect size is a standardized measure that describes the magnitude of the difference between the two group means. This allows for a practical interpretation for understanding to what extent the two groups differ. Although there is no objective rule, Cohen (1988) suggests the following guide for interpreting an effect size: small = .20, moderate = .50, large = .80.

¹ Nineteen students who visited the recreation center were not enrolled students during the academic year and were removed from the analysis.

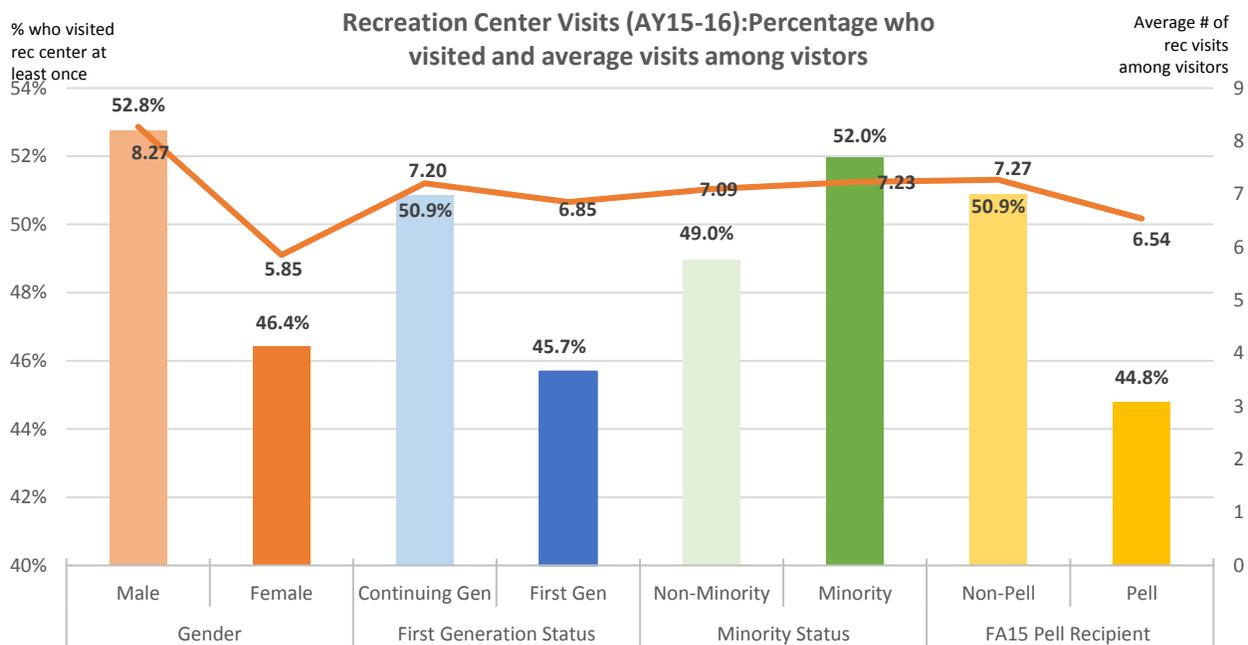


Visits to the CSU Recreation Center

Research Question 1: What are the student characteristics of those undergraduates who visited the recreation center at least once in an academic year? Of those recreation center visitors, about how frequently do students go to the recreation center?

- Half of all enrolled undergraduates in the AY15-16 visited the recreation center at least once during the academic year.
 - Recreation center visitors had a significantly higher academic index scores on average (mean = 114.04) than non-visitors (mean = 113.52, $p < .01$).
 - Among just those recreation center visitors, students frequented the recreation center an average of 7.12 times during the academic year.
- Among enrolled undergraduates at CSU, 53% of males, 52% of students with a minority race or ethnicity, 51% of continuing generation students, and 51% of non-Pell recipients visited the recreation center at least once. In comparison, only 49% of non-minority, 46% of first generation, 46% of female students, and 45% of Pell recipients visited the recreation center at least once.
- Among recreation center visitors only, males visited an average of 8.27 times over the academic year, while females visited an average of 5.85 times ($d = .29, p < .01$). Average visits did not significantly differ by first generation or minority status; however, there was a small effect by Pell status. Non-Pell recipient visitors frequented the recreation center significantly more than Pell recipients ($d = .09, p < .01$).

Figure 1. Percentage of undergraduates who visited the recreation center at least once and, among those visitors, their average number of visits during the AY15-16 by gender, first generation, minority status, and Pell status

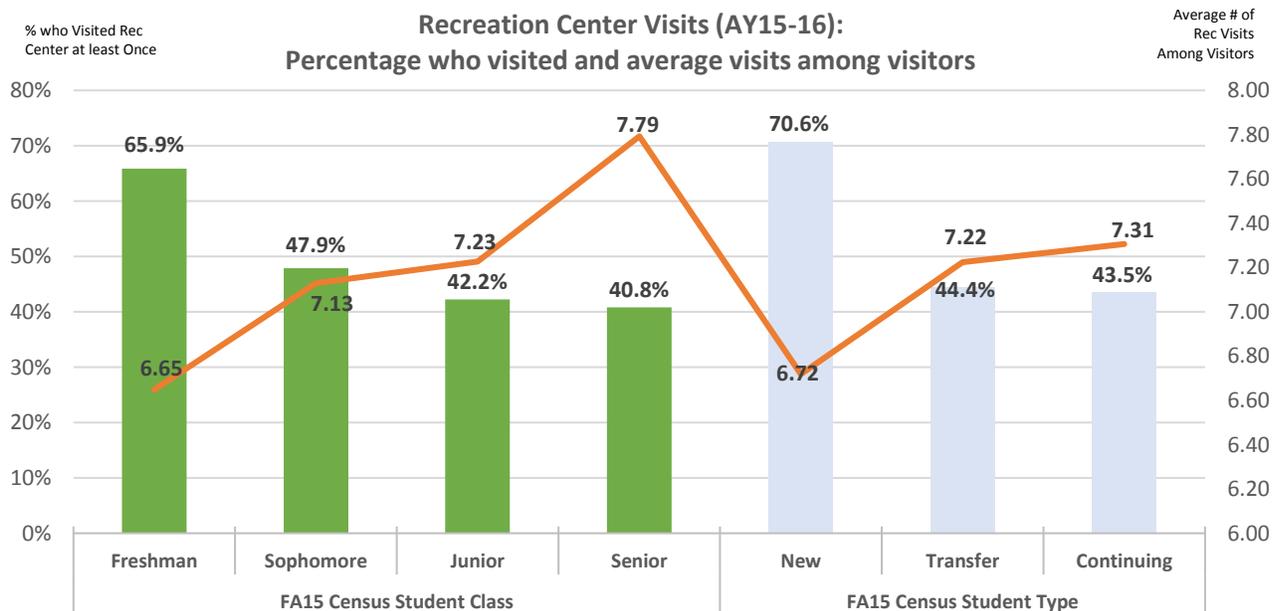




Research Question 1, Continued:

- Two-thirds of freshman visit the recreation center at least once during the academic year. Thereafter, there is a declining trend in who attends. Less than half of sophomores (48%), 42% of juniors, 41% of seniors, and only 27% of second bachelor/post baccalaureate students visit the recreation center at least once.
- However, interestingly, among those that do visit, the average frequency of visits among visitors follows the opposite trend (freshmen visit an average of 6.65 times an academic year, while seniors visit an average of 7.8 times on average).
 - Seniors ($d=.31, p \leq .02$) and 2nd Bachelor/Post baccalaureate ($d=.31, p < .01$) have a significantly higher visit mean on average than freshmen; however, no other significant findings emerged by student class.
- Seventy-one percent of new students visit the recreation center at least once an academic year, while only 44% of transfer and continuing students utilized the recreation center. However, among those continuing students who did visit the recreation center at least once, they visited significantly more times in an academic year (mean = 7.31) than new students (mean = 6.72) ($d = .07, p < .02$).
- Therefore, upperclassmen and continuing students may not visit the recreation center as much as lowerclassmen and new students; however, among those that do visit, they attend more frequently.
- Additionally, 51% of full-time students visited the recreation center at least once during the academic year, while only 23% of part-time students visited at least once. A smaller gap emerged by residency (54% of non-residents and 48% of residents visited at least once). Among visitors, there was no significant frequency differences by students' full-time status or residency.

Figure 2. Percentage of undergraduates who visited the recreation center at least once and, among those visitors, their average number of visits during the AY15-16 by fall 2015 student class and student type



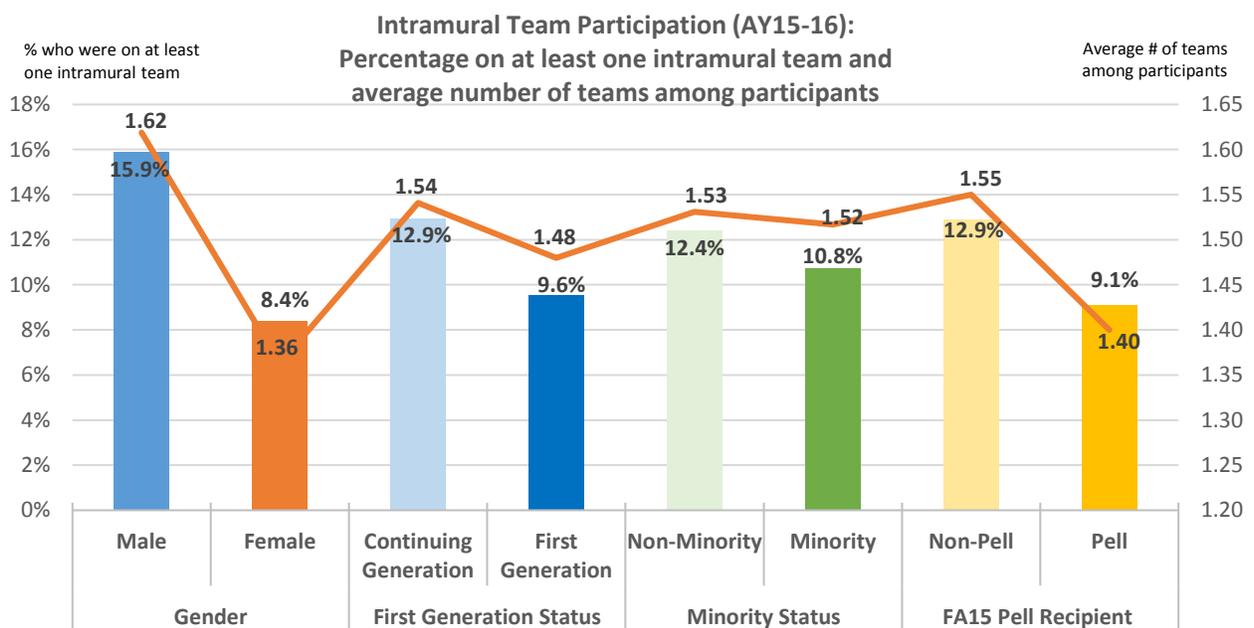


Intramural Team Participation

Research Question 2: What are the student characteristics of those undergraduates who are participating on at least one intramural team an academic year? Of those who do participate on intramural teams, about how many teams do they join?

- About 12% of enrolled undergraduates in the AY15-16 participated in at least one recreation center intramural team during the academic year.
 - Intramural team participants had a significantly higher academic index score (mean = 115.02) on average than non-intramural team participants (mean = 113.62, $p < .01$).
 - Among those recreation center team participants, students were on an average of 1.53 teams during the academic year.
- Among enrolled undergraduates at CSU, 15.9% of male, but only 8.4% of female students, participated on at least one intramural team. A smaller percentage point gap existed for team participation by first generation status (12.9% of continuing generation and 9.6% of first generation students) and minority status (12.4% of non-minority and 10.8% of minority students participated in at least one intramural team).
- Among intramural team participants, males were on an average of 1.6 teams over the academic year, while females had a significantly lower average number of teams (mean = 1.36) ($d = .30, p < .01$). Similar to recreation center frequency, the number of teams joined did not significantly differ by minority status or first generation status, but did differ, albeit a small effect again, by Pell status ($d = .17, p < .01$).

Figure 3. Percentage of undergraduates who participated in a recreation center intramural team at least once and, among those participants, the average number of intramural teams on which they participated during the AY15-16 by gender, first generation, minority status, and Pell status.

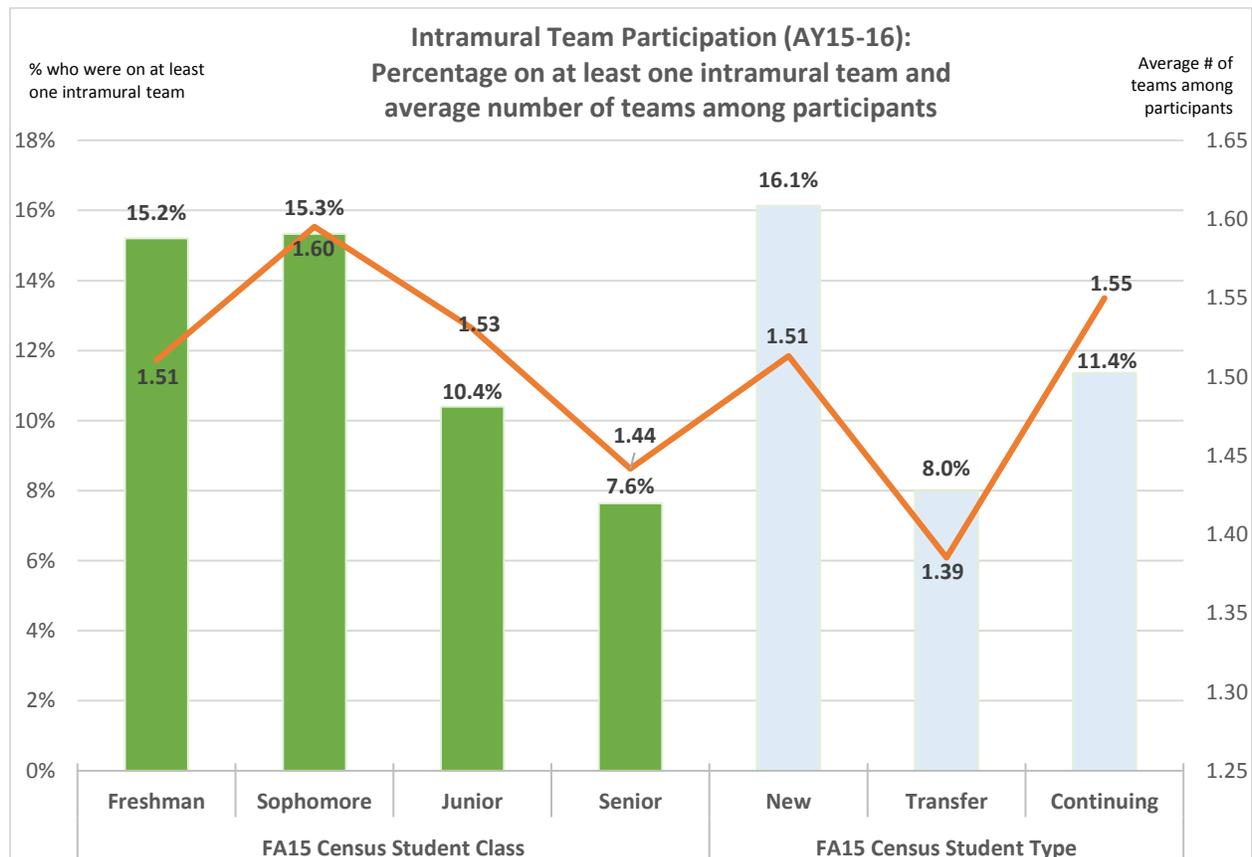




Research Question 2, Continued:

- Fifteen percent of freshmen and sophomore students participated in at least one intramural team. The drop off that occurred among sophomores when examining visiting the recreation center did not occur for intramural teams until junior year (only 10% of juniors and 7.6% of seniors were on at least one intramural team).
- Correspondingly, 16% of new undergraduates participated in an intramural team, while only 8% of transfers and 11% of continued students participated.
- Nevertheless, there were no significant differences when examining intramural team participants by student class or student type. Likewise, average number of intramural teams did not significantly differ by student class or student type among intramural participants.
- Additionally, about 12.5% of full-time students participated in at least one intramural team during the academic year, while only 5.2% of part-time students participated on a team. A smaller gap emerged by residency (11.9% of non-residents and 12.2% of residents visited at least once). Average number of teams did not significantly differ by academic load or residency.

Figure 4. Percentage of undergraduates who participated in a recreation center intramural team at least once and, among those participants, the average number of intramural teams on which they participated during the AY15-16 by fall 2015 student class and student type



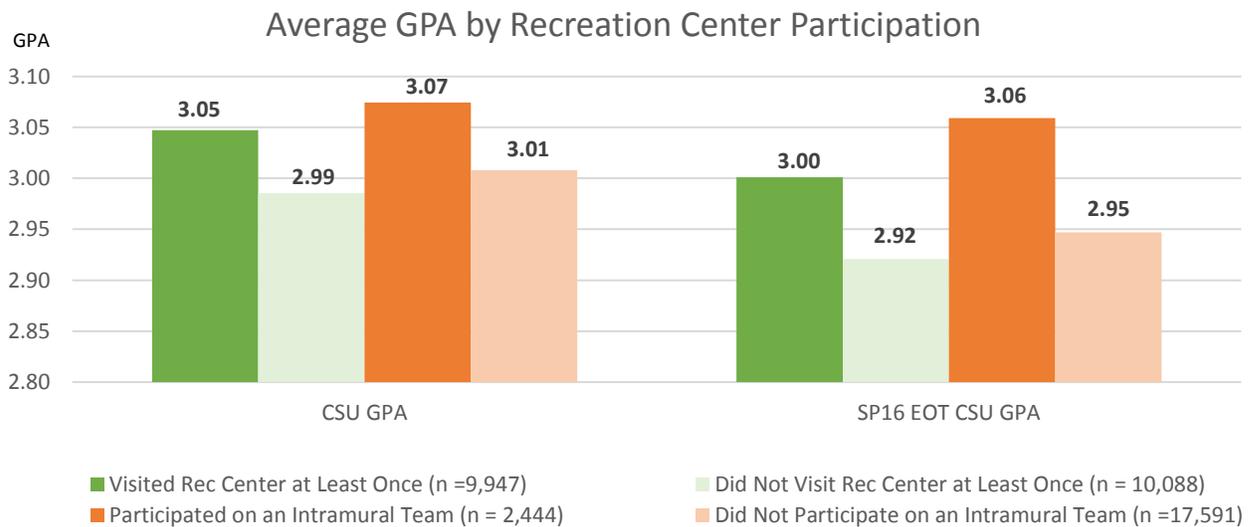


Student Success Outcomes

Research Question 3a: Do undergraduates who participate in the recreation center (visit the recreation center at least once or participate on an intramural team) during the fall 2015-spring 2016 academic year receive higher grade point averages than those students who did not visit the recreation center during the academic year?

- Small effects emerged between recreation center visitors’ and intramural participation’s impact on GPA.
- Students who visited the recreation center at least once have significantly higher CSU GPAs (mean=3.05, $d = .10$, $p < .01$) and SP16 term GPAs (mean = 3.00, $d = .04$, $p = .00$) than students who did not visit the recreation center during the academic year (mean = 2.99 and 2.92 respectively).
- Similarly, undergraduates who played on an intramural team had significantly higher CSU GPAs (mean = 3.07, $d = .14$, $p < .01$) and SP16 term GPAs (mean = 3.06, $d = .14$, $p < .01$) than students who did not participate on an intramural team during the academic year (mean = 3.01 and 2.95 respectively).

Figure 5. Average CSU GPA and end of term spring 2016 term GPAs by recreation center participation (visited the recreation center or participated on an intramural team)

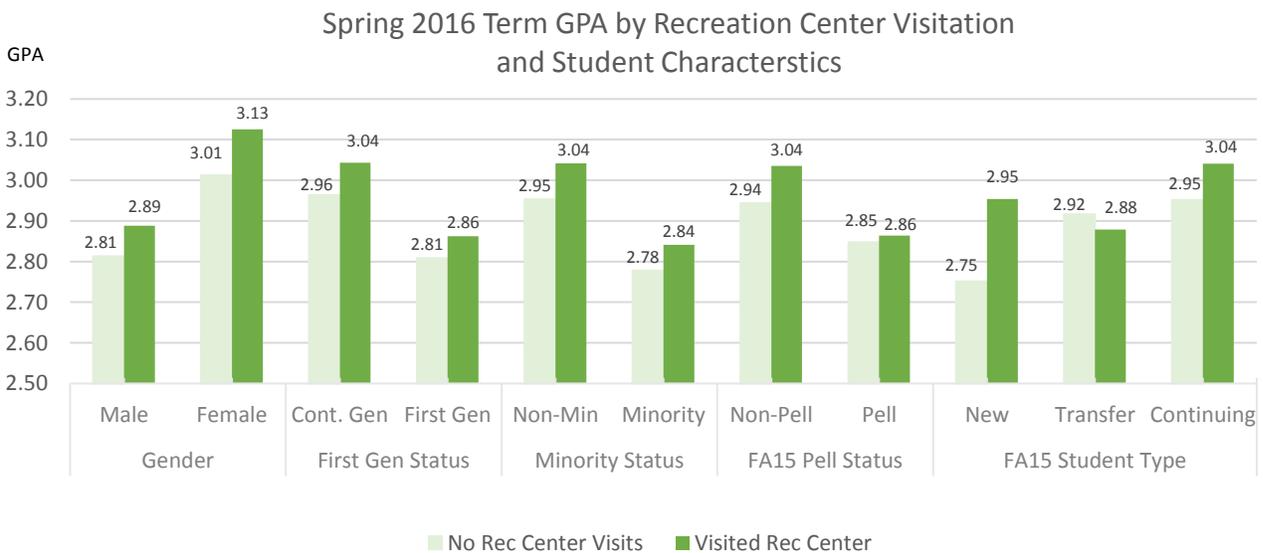




Research Question 3b: Does the relationship between participation in the recreation center during the fall 2015 - spring 2016 academic year and end of term grade point average vary by student characteristics? ²

- When examining student characteristics, students’ spring 2016 term GPAs were all significantly higher for recreation center visitors than for students who did not visit the recreation center in the AY15-16 regardless of characteristic examined ($p < .05$) with the exception of Pell recipients and transfer students. The significant differences were all relatively small effects ($d \leq .23$).
- Although not significantly different, transfer students who visited the recreation center had a lower mean spring 2016 term GPA compared to non-visiting recreation center transfer students, while Pell recipients who visited the recreation center had comparable spring 2016 term GPAs to Pell recipients who did not visit the recreation center.
- The largest GPA gap in favor of recreation center participation was among new students and females (visitors had a .20 and .12 grade point advantage to non-visitors respectively) ($d = .23$ and $.13$ respectively).
- Despite the higher GPAs within each characteristic for visitors, there were some disproportionate GPA gaps among visitors within a characteristic. Non-Pell, non-minority, continuing generation, females, and new students’ visits to the recreation center appear to be more positively correlated with higher GPAs (.10, .09, .08, .12, and .20 points higher than non-visitors respectively) compared to recreation center visitors who were Pell students, minority students, first generation students, males, and continuing students (.01, .06, .05, .08, and .09 points higher than non-visitors respectively).

Figure 6. Average spring 2016 term GPA by recreation center visitation and student characteristics



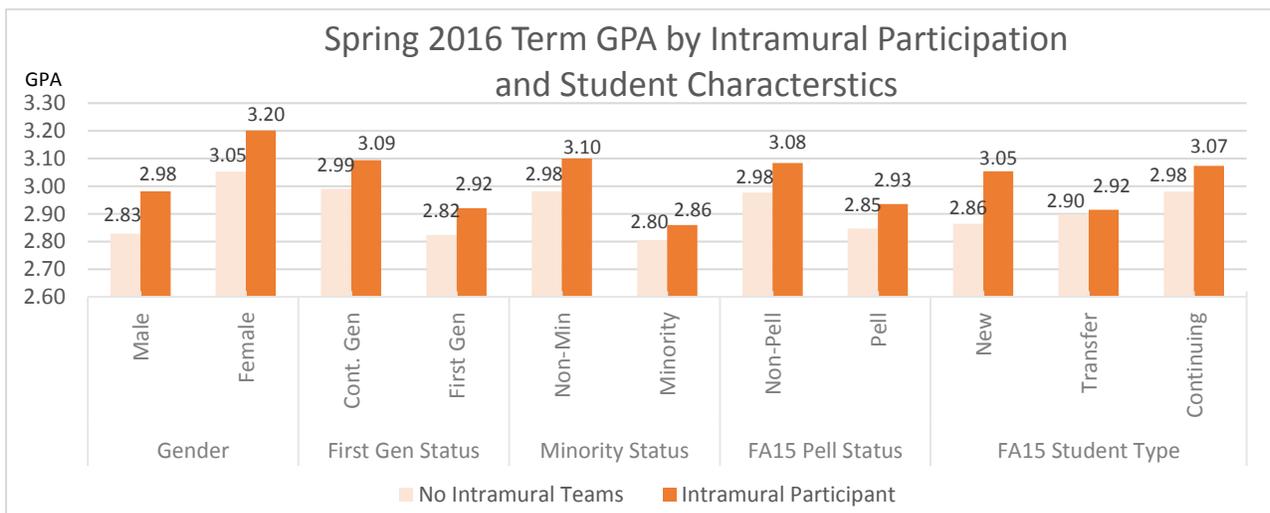
² See Table B for CSU GPA by student characteristics.



Research Question 3b, Continued:

- Comparable to recreation center visitors, spring 2016 term GPAs are higher for all students who participate in an intramural team regardless of their characteristics, with the exception of transfer students, when compared to those students who do not participate in an intramural team ($p < .05$). The effect sizes for the differences were also all small ($d \leq .24$).
- The largest GPA gap in favor of intramural team participation was for new students, and both female and males (participants had a .19 ($d = .24$), .15 ($d = .20$), and .15 ($d = .18$) grade point advantage respectively). Again, the smallest gaps were among Pell recipients, first generation, and transfers (.01, .04, and -.04 grade point difference respectively).
- Likewise to the recreation center visitors, there were some disproportionate GPA gaps among intramural participants within characteristic. Non-Pell recreation center visitors, non-minority, and new students' GPAs seemed to be impacted more positively from their team participation (.10, .12, .19 points higher than non-participants respectively) compared to Pell students, minority students, and continuing students (.08, .06, and .09 points higher than participants respectively). Unlike recreation center visits, intramural participation did not seem to have a disproportionate impact by first generation status or gender (.10 and .15 grade point difference respectively for both no intramural teams and intramural participants).

Figure 7. Average spring 2016 term GPA by intramural participation and student characteristics





Research Question 4: What is the relationship between recreation center involvement (visited or participated on an intramural team) and spring 2016 term GPA? Does this relationship remain when controlling for student characteristics?

- Even after controlling for students' academic index scores, students who visited the recreation center at least once had significantly higher spring 2016 term GPAs compared to those students who had not visited the recreation center at least once ($p < .01$). This relationship remained significant above and beyond student characteristics and academic index (Pell, first generation status, minority status, and gender) ($p < .01$).
 - Even further, among recreation center visitors, there is also evidence that the number of recreation center visits significantly predicts students' spring 2016 term GPA even after controlling for incoming academic index score ($p < .01$);
- Similarly to visiting the recreation center, participating on at least one intramural team significantly predicted students' spring 2016 term GPA ($p < .01$) above and beyond their incoming academic index score. This relationship also remained significant above and beyond student characteristics and academic index (Pell, first generation status, minority status, and gender) ($p < .01$).
 - However, among intramural team participants, the number of intramural teams was not a significant predictor of spring 2016 term GPA when controlling for index ($p = .46$) or index and student characteristics ($p = .92$).
- This implies recreation center visitors and intramural team participants have a higher spring 2016 term GPA regardless of their student characteristics and index. Further, among visitors, students typically have higher spring 2016 term GPA the more they visit the recreation center in AY15-16; however, there was no correlation between number of intramural teams and term GPA among intramural participants.

Table 1. Summary of multiple regression coefficients for recreation center's relationship (visited recreation center and participated on an intramural team) with students' Spring 2016 term GPA

Spring 16 Term GPA	B	SE	B	p
Visited (Yes/No)	.096	.013	.056	.000
Number of Visits	.008	.001	.085	.008
Intramural Teams (Yes/No)	.126	.019	.050	.000
Number of Teams	.001	.015	.002	.001

- * The model also included academic index, gender, Pell, first generation status, minority status as covariates. See Table C in appendix.
- ** B = unstandardized beta coefficient, SE = Standard Error, B = standardized beta coefficient, p = significance value



Research Question 5: What is the relationship between recreation center involvement (visited or participated on an intramural team) and fall 2016 persistence? Does this relationship remain when controlling for student characteristics?

- Students who visited the recreation center at least once were significantly more likely to persist (continued or graduated) to fall 2016 compared to those students who had not visited the recreation center at least once even after controlling for academic index ($p < .01$). This relationship remained significant even after controlling for index and student characteristics (Pell, first generation status, minority status, and gender) ($p < .01$).
 - Undergraduates who visited the recreation center at least once during the AY15-16 had 37% higher odds of persisting than those students who did not visit the recreation center during the AY15-16 above and beyond the impact of academic index and student characteristic on persistence ($p < .01$).
- Additionally, participating on at least one intramural team significantly predicted students' fall 2016 persistence ($p < .01$) above and beyond their incoming academic index score. This relationship also remained significant even after controlling for index and student characteristics (Pell, first generation status, minority status, and gender) ($p < .01$).
 - Intramural team participants had 88% higher odds of persisting to fall 2016 compared to non-intramural team participants ($p < .01$).
- Conversely, among recreation center visitors and intramural team participants, there was no evidence that frequency of recreation center visits or number of intramural teams predicted fall 2016 persistence after controlling for academic index ($p = .94$ and $.44$ respectively).
- This suggests persistence is more strongly correlated to whether a student visits the recreation center or participates on an intramural team than the frequency of these visits and participation.

Table 2. Summary of logistic regression coefficients for recreation center's relationship (visited recreation center and participated on an intramural team) with students' Fall 2016 persistence

Fall 2016 Persistence	Odds			
	B	SE	Ratio	p
Visited (Yes/No)	.314	.056	1.369	.000
Number of Visits	-.001	.005	.999	.865
Intramural Teams (Yes/No)	.314	.056	1.018	.000
Number of Teams	.086	.120	1.089	.476

* Each model included academic index, gender, Pell, first generation status, minority status as covariates. See Table D in appendix.

** B = unstandardized beta coefficient, SE = Standard Error, p = significance value



Limitations

These results should be interpreted with caution due to a few limitations in the study, primarily the lack of information regarding the students' exercise habits. For example, it is unknown whether the students visited the recreation center just one term or both and, further, it is unknown whether students are participating in activities outside the recreation center, especially given the plethora of outdoor activities available in the near vicinity.

Conclusions

This research suggests a positive relationship with student success outcomes for students who visit the recreation center and participate in an intramural team compared to non-recreation center users. Students who visited the recreation center at least once or participated on an intramural team, regardless of student characteristics or index, had superior student success outcomes (spring term 16 GPA, fall 16 persistence) than students who did not visit the recreation center or participate on at least one intramural team. Moreover, frequency of recreation center visits has a positive relationship with spring 16 term GPA among visitors indicating recreation center visit frequency is correlated with higher GPAs. It would be of interest to look at a more detailed recreation center usage log for future studies that would permit analysis by occurrence, duration, and a longitudinal comparison.



Appendix

Table A. Summary of undergraduate recreation center visits and intramural team participation by student characteristic for AY15-16

Student Characteristic		#	Visits to Rec Center		Intramural Team	
			% who visited rec center at least once	Mean Visits Among Visitors	% in at least one intramural team	Mean Teams Among Team Participants
Gender	Male	9,983	52.8%	8.27	15.9%	1.62
	Female	10,283	46.4%	5.85	8.4%	1.36
First Generation Status	Continuing Generation	15,120	50.9%	7.20	12.9%	1.54
	First Generation	5,146	45.7%	6.85	9.6%	1.48
Minority Status	Non-Minority	16,380	49.0%	7.09	12.4%	1.53
	Minority	3,886	52.0%	7.23	10.8%	1.52
FA15 Census Pell Recipient	Non-Pell Recipient	15803	50.9%	7.27	12.9%	1.55
	Pell Recipient	4463	44.8%	6.54	9.1%	1.40
STEM Major FA15 Census	Non-STEM	11,978	50.1%	7.09	11.8%	1.49
	STEM Majors	8,288	48.7%	7.16	12.5%	1.59
FA15 Census Academic Load	Part-Time	1,166	23.4%	7.16	5.2%	1.49
	Full-Time	19,100	51.1%	7.12	12.5%	1.53
Residency	Non-Resident	4,988	54.1%	7.15	11.9%	1.49
	Resident	15,278	48.0%	7.11	12.2%	1.54
Veteran Status	Not a Veteran	19,671	49.9%	7.09	12.3%	1.53
	Veteran	595	38.7%	8.46	5.2%	1.45
FA15 Census Student Class	Freshman	5,630	65.9%	6.65	15.2%	1.51
	Sophomore	4,624	47.9%	7.13	15.3%	1.60
	Junior	4,896	42.2%	7.23	10.4%	1.53
	Senior	4,832	40.8%	7.79	7.6%	1.44
	2nd Bach/Post Bac	284	26.8%	9.66	2.5%	1.43
FA15 Census Student Type	New	4,481	70.6%	6.72	16.1%	1.51
	Transfer	1,528	44.4%	7.22	8.0%	1.39
	Continuing	13,947	43.5%	7.31	11.4%	1.55
	Non Degree	114	59.6%	7.82	8.8%	1.40
	Readmit	196	31.6%	7.77	5.6%	1.18
Race/ Ethnicity	Asian American	490	54.3%	7.70	9.8%	1.71
	Black	452	59.5%	5.97	10.0%	1.40
	Hawaiian/Pac Islander	27	48.1%	12.08	7.4%	1.00
	Hispanic/Latino	2,239	50.3%	7.16	11.0%	1.52
	International	787	54.5%	7.11	7.2%	1.30
	Multi-Racial	560	50.7%	7.76	10.4%	1.38
	Native American	118	51.7%	8.38	15.3%	1.78
	No Response	853	47.6%	7.43	10.0%	1.69
White	14,740	48.7%	7.07	12.8%	1.53	
All RI, Undergraduates (AY15-16)		20,266	49.5%	7.12	12.1%	1.53



Table B. Average CSU GPAs and SP16 EOT GPAs by recreation center/intramural participation and student characteristics

		Visited Rec Center				Played on Intramural Team			
		CSU GPA		SP16 EOT GPA		CSU GPA		SP16 EOT GPA	
		No Rec Center Visits	Visited Rec Center	No Rec Center Visits	Visited Rec Center	No Intramural Teams	Intramural Participant	No Intramural Teams	Intramural Participant
Gender	Male	2.88	2.95	2.81	2.89	2.90	3.00	2.83	2.98
	Female	3.08	3.16	3.01	3.13	3.11	3.20	3.05	3.20
First Gen Status	Cont. Gen	3.02	3.08	2.96	3.04	3.04	3.11	2.99	3.09
	First Gen	2.89	2.93	2.81	2.86	2.90	2.95	2.82	2.92
Minority Status	Non-Min	3.01	3.08	2.95	3.04	3.04	3.11	2.98	3.10
	Minority	2.87	2.92	2.78	2.84	2.89	2.92	2.80	2.86
FA15 Pell Status	Non-Pell	3.01	3.08	2.94	3.04	3.03	3.10	2.98	3.08
	Pell	2.92	2.93	2.85	2.86	2.92	2.96	2.85	2.93
FA15 Student Type	New	2.84	3.01	2.75	2.95	2.94	3.08	2.86	3.05
	Transfer	2.98	2.94	2.92	2.88	2.96	2.93	2.90	2.92
	Continuing	3.01	3.08	2.95	3.04	3.04	3.08	2.98	3.07

Note: Bold indicates a significance difference between no rec center visits and visited rec center or between no intramural team and an intramural participant ($p < .05$).

Table C. Summary of multiple regression statistics for recreation center's relationship (visited recreation center and participated on an intramural team) with students' spring 2016 term GPA³

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.917	.054		16.827	.000
ORIG_INDEX	.018	.000	.275	37.206	.000
Visited	.084	.013	.049	6.633	.000

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.952	.054		17.556	.000
ORIG_INDEX	.018	.000	.275	37.098	.000
IntTeam	.095	.019	.038	5.147	.000

³ Note: B = unstandardized beta coefficient, SE B = Standard Error, β = standardized beta coefficient, t = t-test statistic, Sig = significance value (p)



Among visitors	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.752	.071		10.521	.000
ORIG_INDEX	.019	.001	.315	31.212	.000
NUMBOFVISITS	.006	.001	.068	6.691	.000

Among participants	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.778	.127		6.118	.000
ORIG_INDEX	.020	.001	.357	18.229	.000
NUMBOFTEAMS	-.011	.015	-.014	-.739	.460

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.037	.056		18.583	.000
ORIG_INDEX	.016	.000	.251	33.588	.000
Pell	-.057	.017	-.027	-3.385	.001
GENDER	.197	.013	.115	15.515	.000
FIRSTGEN_FLAG	-.088	.016	-.044	-5.563	.000
MINORITYSTATUS	-.103	.016	-.048	-6.277	.000
Visited	.096	.013	.056	7.568	.000

Among Visitors	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.887	.073		12.138	.000
ORIG_INDEX	.018	.001	.287	28.061	.000
Pell	-.055	.022	-.027	-2.480	.013
GENDER	.211	.016	.131	12.881	.000
FIRSTGEN_FLAG	-.071	.021	-.037	-3.402	.001
MINORITYSTATUS	-.113	.021	-.057	-5.440	.000
NUMBOFVISITS	.008	.001	.085	8.461	.000



	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.074	.056		19.340	.000
ORIG_INDEX	.016	.000	.250	33.427	.000
Pell	-.058	.017	-.027	-3.434	.001
GENDER	.202	.013	.118	15.813	.000
FIRSTGEN_FLAG	-.090	.016	-.045	-5.660	.000
MINORITYSTATUS	-.097	.016	-.045	-5.919	.000
IntTeam	.126	.019	.050	6.788	.000

Among participants	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.931	.130		7.144	.000
ORIG_INDEX	.018	.001	.328	16.452	.000
Pell	-.042	.039	-.022	-1.080	.280
GENDER	.166	.029	.112	5.701	.000
FIRSTGEN_FLAG	-.033	.037	-.019	-.895	.371
MINORITYSTATUS	-.156	.038	-.083	-4.109	.000
NUMBOFTEAMS	.001	.015	.002	.097	.923



Table D. Summary of logistic regression statistics for recreation center's relationship (visited recreation center and participated on an intramural team) with students' fall 2016 persistence⁴

	B	S.E.	Wald	df	Sig.	Exp(B)
ORIG_INDEX	.019	.002	95.846	1	.000	1.019
Visited	.310	.056	31.124	1	.000	1.364
Constant	.105	.217	.234	1	.628	1.111

	B	S.E.	Wald	df	Sig.	Exp(B)
ORIG_INDEX	.019	.002	93.175	1	.000	1.019
IntTeam	.619	.101	37.599	1	.000	1.856
Constant	.218	.217	1.016	1	.313	1.244

Among Visitors	B	S.E.	Wald	df	Sig.	Exp(B)
ORIG_INDEX	.024	.003	70.099	1	.000	1.025
NUMBOFVISITS	.000	.005	.006	1	.939	1.000
Constant	-.195	.327	.356	1	.551	.823

Among participants	B	S.E.	Wald	df	Sig.	Exp(B)
Constant	-.852	.797	1.142	1	.285	.427
ORIG_INDEX	.033	.007	20.829	1	.000	1.033
NUMBOFTEAMS	.092	.119	.602	1	.438	1.097

⁴ Note: SE B = Standard Error; Exp(B) = Odds Ratio; Sig. = significance value (p)



	B	S.E.	Wald	df	Sig.	Exp(B)
ORIG_INDEX	.018	.002	81.721	1	.000	1.018
FIRSTGEN_FLAG	-.072	.067	1.144	1	.285	.930
GENDER	.083	.056	2.177	1	.140	1.086
MINORITYSTATUS	-.082	.070	1.367	1	.242	.922
Pell	-.099	.071	1.964	1	.161	.906
Visited	.314	.056	31.673	1	.000	1.369
Constant	.239	.226	1.122	1	.289	1.270

Among visitors	B	S.E.	Wald	df	Sig.	Exp(B)
ORIG_INDEX	.024	.003	63.638	1	.000	1.024
FIRSTGEN_FLAG	-.057	.103	.312	1	.577	.944
GENDER	-.030	.084	.132	1	.717	.970
MINORITYSTATUS	-.062	.103	.364	1	.546	.940
Pell	-.083	.108	.597	1	.440	.920
NUMBOFVISITS	-.001	.005	.029	1	.865	.999
Constant	-.064	.339	.035	1	.851	.938

	B	S.E.	Wald	df	Sig.	Exp(B)
ORIG_INDEX	.018	.002	78.833	1	.000	1.018
IntTeam	.631	.102	38.638	1	.000	1.880
FIRSTGEN_FLAG	-.076	.068	1.263	1	.261	.927
GENDER	.107	.056	3.655	1	.056	1.113
MINORITYSTATUS	-.062	.070	.789	1	.375	.940
Pell	-.099	.071	1.943	1	.163	.906
Constant	.343	.225	2.322	1	.128	1.409

Among participants	B	S.E.	Wald	df	Sig.	Exp(B)
ORIG_INDEX	.033	.007	20.657	1	.000	1.034
FIRSTGEN_FLAG	-.053	.251	.044	1	.834	.949
GENDER	-.063	.206	.095	1	.758	.939
MINORITYSTATUS	.217	.275	.622	1	.430	1.242
Pell	-.042	.268	.025	1	.874	.959
NUMBOFTEAMS	.086	.120	.508	1	.476	1.089
Constant	-.926	.828	1.249	1	.264	.396

