

Summer Start Program

The Purdue Summer Start program was launched in 2016. It provides a head start for students who are conditionally admitted for the subsequent fall term. This briefing describes the Summer Start program, demographic on the participants, GPA and retention outcomes for the inaugural Summer Start cohort.

Summer Start Program Overview

Summer Start is a credit-bearing, five-week bridge program for incoming freshmen that takes place just before the start of the fall semester. It includes strong and sustained academic support including success coaching, peer mentors, and a living/learning community. Summer Start increases access to Purdue and gives students a head start towards on-time graduation.

Before coming to Purdue, Summer Start students interact with the [Division of Summer Session](#) staff, a peer mentor, college recruiters, and their academic advisor. This high-touch strategy helps the students and their families understand the nuances of the program. With the help of their advisor, students pick six credits to take during the five-week session and are also enrolled in a one-credit seminar focused on a successful first-year experience. During Summer Start, students go through orientation, take classes as a cohort, and engage in learning community activities focused on their academic and extra-curricular success. Summer Start students continue on to Boiler Gold Rush week and then on to the fall term.

In 2016, Summer Start was limited to students who just missed qualifying for direct fall entry, and who earned access to Purdue by agreeing to complete the Summer Start Session as a condition for admission. The Summer Start conditional admit is offered to students who show potential to be successful at Purdue, but whose high school performance or standardized test scores were not competitive compared to students admitted for the fall. A student whose grades were strong and standardized test scores were lower, is likely a student who is willing to put in the work to be successful at Purdue but may need guidance as they navigate a large university and the academic resources available to them. Conversely, a student with strong standardized test scores and poor high school performance can likely do the work, but may need the five-week program to help them establish study skills or time management strategies. All students admitted to Summer Start meet high school subject matter requirements and show the potential to be successful in their intended area of interest.

Compared to New Beginner Cohort

The inaugural Summer Start cohort was 170 students who enrolled in summer 2016 and matriculated to the subsequent fall 2016 term. These 170 students are part of the University's new beginner cohort, who are high school graduates starting post-secondary education for the first time. As shown in Table 1, we compare the Summer Start cohort enrolled in fall 2016 to the non-Summer Start new beginner class consisting of 7,073 students (7,243 total new beginners - 170 Summer Start cohort). The Summer Start cohort has a higher percentage of Indiana residents (77.6%) and women (50.0%). The Summer Start cohort also has a larger percentage of African American (7.7%) and Hispanic/Latino (10.6%) students as compared to the non-Summer Start fall 2016 beginners.

The Summer Start program serves a greater percentage of students in groups traditionally categorized as at-risk, such as first generation and Pell grant recipients. The Summer Start fall 2016 cohort has 38.8% first generation students and 32.9% received the federal Pell grant (about twice the rate of the University's new beginner cohort).

Table 1: Fall 2016 Summer Start Cohort vs Non-Summer Start Cohort - Demographic

	Summer Start Cohort		Non-Summer Start Cohort		Total New Beginners
	170		7,073		
Total Number	N	%	N	%	
Residency					
Resident	132	77.6%	3,677	52.0%	
Nonresident	38	22.4%	3,396	48.0%	
Gender					
Men	85	50.0%	4,032	57.0%	
Women	85	50.0%	3,041	43.0%	
Ethnicity					
American Indian/Alaska Native	0	0.0%	7	0.1%	
Asian	16	9.4%	554	7.8%	
Black or African American	13	7.7%	215	3.0%	
Hispanic Latino	18	10.6%	337	4.8%	
Native Hawaiian/Other Pacific Islander	0	0.0%	9	0.1%	
White	114	67.1%	4,563	64.5%	
Two or More Races	6	3.5%	211	3.0%	
International	0	0.0%	942	13.3%	
Unknown	3	1.8%	235	3.3%	
At Risk					
First Generation Student	66	38.8%	1,386	19.6%	
Not First Generation Student	104	61.2%	5,687	80.4%	
Federal Pell Grant	56	32.9%	1,090	15.4%	
No Pell Grant	114	67.1%	5,983	84.6%	

As expected, due to the nature of the conditional admission criteria, the Summer Start cohort are less academically prepared for college than the non-Summer Start cohort, as measured by standardized test scores and high school GPA. As seen in Table 2, Summer Start cohort SAT total test scores average 283 points lower than the non-Summer Start cohort; with the greatest difference (106 points) for the SAT Math test score. Only 51.2% of the Summer Start cohort students took and submitted an ACT score to Purdue University. For these students, the greatest difference in scores was in ACT Math and English tests. The Summer Start cohort also had a 0.39 lower transcript high school GPA than the non-Summer Start cohort.

Table 2: Fall 2016 Summer Start Cohort vs Non-Summer Start Cohort - Profile

	Summer Start Cohort		Non-Summer Start Cohort	
	N	GPA	N	GPA
SAT Scores				
Total Number submitting SAT	135		4,825	
SAT Total	1507		1790	
SAT Verbal	498		585	
SAT Math	522		628	
SAT Writing	486		577	
ACT Scores				
Total Number submitting ACT	87		4,388	
ACT Composite	22.7		28	
ACT English	22.2		27.9	
ACT Math	22.8		28.4	
ACT Writing	21		26.2	
High School GPA	169	3.36	6,110	3.75

Compared to Predicted At-risk Group

The Office of Institutional Research, Assessment and Effectiveness (OIRAE), in collaboration with Student Success and Undergraduate Advising has developed an at-risk student list. The associated program provides directed advising to a group of new beginning students who have been predicted to earn a first semester GPA of 2.5 or below. The modeling technique used to derive the list of students who are predicted to be at-risk is a decision tree based algorithm with a classification model which allows a rich range of independent variables to be included, while dealing with an unbalanced class sample (i.e. at-risk class and not at-risk class). The model is run against the entire new incoming fall 2016 class around late April, and uses many pre-entry characteristics and college readiness indicators, such as high school GPA and standardized test scores. Complementing the above comparison of the Summer Start cohort against the non-Summer Start new beginning students, a next step research question is 'How does the Summer Start cohort success compare to a near comparable group of new beginner at-risk students?'

Summer Start Program

In order to derive a comparable at-risk group, we used the following sampling logic:

1. Start from the non-Summer Start new beginners (7,073 students)
2. Remove students from the four academic schools who did not participate in Summer Start (Engineering, Science, Veterinary Medicine, and Pharmacy)
3. Remove international students.
4. Stratify based on at-risk probability

This approach resulted in a group of 640 students who are new beginner at-risk students (labelled "Comparable At Risk" in Tables 3 to 6) and who are largely comparable to the Summer Start cohort. As shown in Table 3, the Summer Start cohort and the Comparable At-Risk group are similar in demographic breakdown by residency, gender, ethnicity, first generation and Pell grant recipient. The Summer Start cohort has lower SAT scores, ACT scores, and High school GPA than the Comparable At-Risk group (Table 4) validating the need for this group of students to participate in the Summer Start program.

Both groups have a lower probability of success at Purdue, as measured by first semester GPA, furthermore the Summer Start cohort had a slightly lower GPA than the Comparable At-Risk group (Table 5). Even though the Summer Start cohort's end of summer 2016 average GPA was 3.35, that same cohort of students earned on average a much lower fall 2016 semester GPA (2.39). The Summer Start cohort performed better in their summer courses, perhaps because of the focused summer support and smaller class sizes. This may suggest that enhanced academic year support would further increase the success of the Summer Start cohort, which is being planned for the 2017 program.

Table 3: Fall 2016 Summer Start Cohort vs Comparable At-Risk - Demographics

	Summer Start Cohort		Comparable At Risk Cohort	
	N	%	N	%
Total Number	170		640	
Residency				
Resident	132	77.6%	456	71.3%
Nonresident	38	22.4%	184	28.8%
Gender				
Men	85	50.0%	348	54.4%
Women	85	50.0%	292	45.6%
Ethnicity				
American Indian or Alaska Native	0	0.0%	1	0.2%
Asian	16	9.4%	40	6.3%
Black or African American	13	7.6%	52	8.1%
Two or More Races	6	3.5%	15	2.3%
At Risk				
First Generation Student	66	38.8%	210	32.8%
Not First Generation Student	104	61.2%	430	67.2%
Federal Pell Grant	56	32.9%	186	29.1%
No Pell Grant	114	67.1%	454	70.9%

Table 4: Fall 2016 Summer Start Cohort vs Comparable At-Risk - Profile

	Summer Start Cohort	Comparable At Risk Cohort
SAT Scores		
Total Number submitting SAT	135	472
SAT Total	1507	1606
SAT Verbal	498	539
SAT Math	522	551
SAT Writing	486	515
ACT Scores		
Total Number submitting ACT	87	354
ACT Composite	22.7	24.1
ACT English	22.2	23.6
ACT Math	22.8	24.3
ACT Writing	21	22.7
	N	GPA
High School GPA	169	3.36
	N	GPA
	637	3.43

The at-risk index from OIRAE predicted that 81% of Summer Start students would be below a 2.5 GPA in fall term. Only 41% actually earned below 2.5 GPA for fall, suggesting that participating in Summer Start did help a significant number of students.

Table 5: Fall 2016 Summer Start Cohort vs Comparable At-Risk - GPA

	Summer Start Cohort	Comparable At Risk Cohort
Total Number	170	640
Purdue Term GPA end of Fall 2016	2.39	2.67
Purdue Overall GPA end of Fall 2016	2.74	2.70

Table 6: Summer Start Cohort vs Comparable At-Risk - Fall-to-Spring Retention

Retention	Summer Start Cohort		Comparable At Risk Cohort	
	N	%	N	%
Fall 2016 Enrolled	170		640	
Spring 2017 Enrolled	157	92.4%	611	95.5%

Success and Struggles

Struggles

"I have decided to pursue my college education closer to home for spring 2017"

"Transferred to Ball State due to homesickness"

"Financial problem and decided to follow music dream"

Any at-risk group in general, and especially Summer Start students, have struggles that impact retention rates both pre-college and at college. The fall-to-spring term retention rate for the Summer Start cohort was 92.4%, compared to 95.5% for the Comparable At-Risk group (Table 6). The lower one term retention rate points to the struggles generally observed with traditional at-risk groups. A total of 13 Summer Start students did not return for the spring 2017 term due to personal or family reasons, as noted by the sampling of comments.

Alongside these struggles are considerable successes. Twenty Summer Start students, who without this program would not have been admitted to Purdue, earned Dean's List and Semester Honors in fall term.

Successes

"I never really got a chance to tell you thank you. I loved Summer Start and it helped me meet some of my best friends. Literally...almost all of my close friends are from summer start(besides my sisters in my house)!! Being in this program helped me to be acclimated so quickly and I'm SO happy I came to Purdue instead of IU(Iol)."

"I felt like I was a leader in the fall compared to the other freshmen. I kept helping students in the first week of class because I already knew where they needed to go and what they needed to do for dining and other stuff."

Peer Comparison

The Pennsylvania State University has a Summer Bridge program named LEAP which is open to both conditionally-admitted students and students who decide to enroll early. This program has been in place since summer 2005 with 8,720 total enrollment for the program in the last ten years. The LEAP participants subsequent first fall semester average GPA is 2.81 compared to 2.74 for their overall population; a statistically significant difference. It should be noted that this first semester GPA includes both conditionally admitted and non-conditional admitted students in the LEAP program. LEAP participants earn a degree on average in 4.4 years compared to 4.2 years for non-LEAP participants.

Conclusion

Summer Start 2016 students are more diverse than new beginners overall, and are predominantly Indiana residents. The first semester performance of these conditionally admitted students was slightly below that of a near-comparison group of at-risk students, however was better than predicted based on their entry characteristics. Data from the inaugural Summer Start cohort show that conditionally admitted students, through the Summer Start program, can thrive at Purdue and be retained. Future improvements to the program can include support beyond the summer term and into the subsequent fall and spring terms, through adding Success Coaches, a fall course taught by the students' coach, and more living/learning community involvement. The future for Summer Start will also involve a slightly different model that will include both conditional admits and voluntary participation by fall admitted new beginners who want to get a jump start on their coursework and gain access to additional academic support systems.

¹ http://www.purdue.edu/oirae/documents/OIRAE_Briefings/AtRiskStudents_April_2015.pdf