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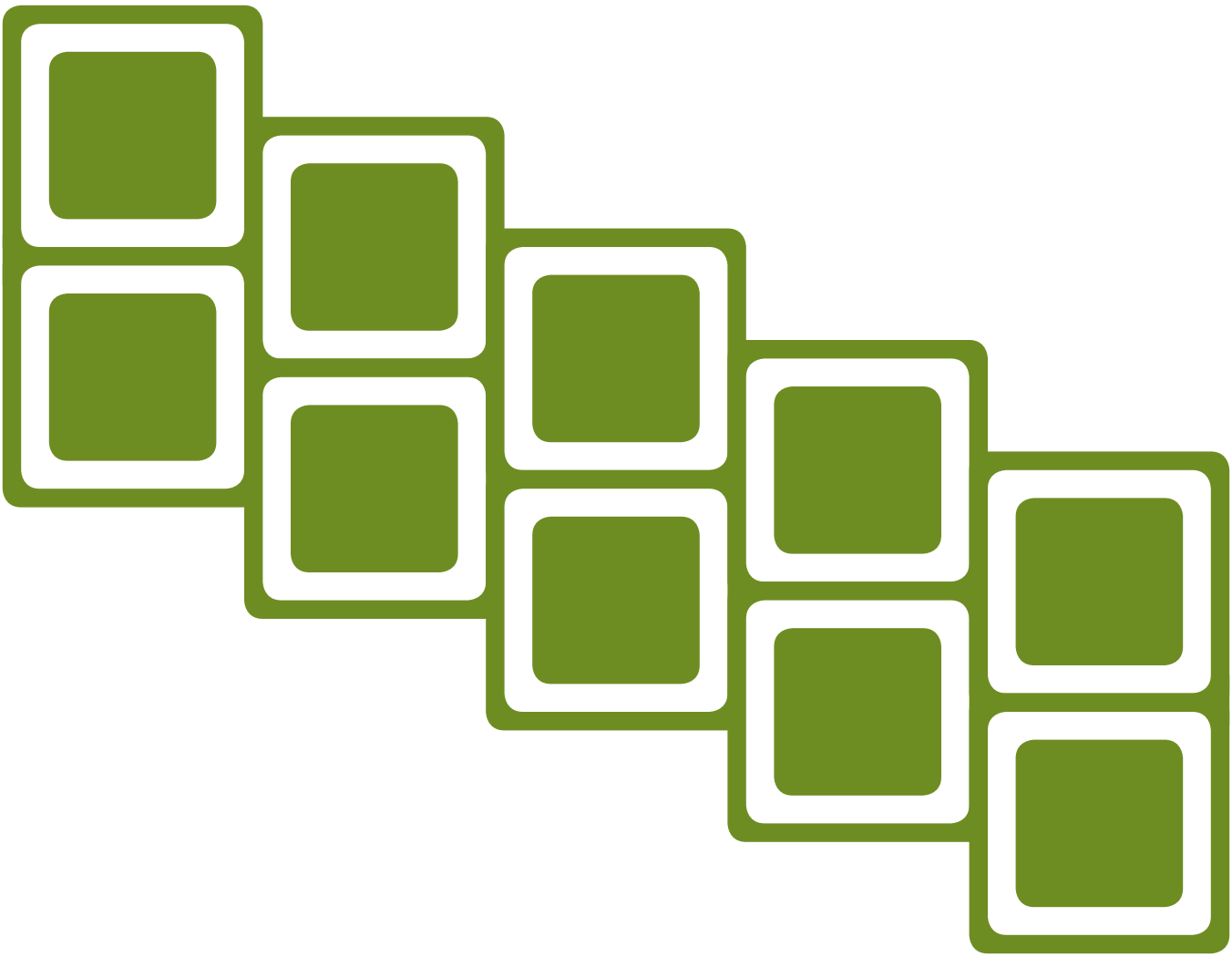

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Summer Start: Supporting Success for Conditionally Admitted Students in a Summer Bridge Program

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Abstract

Summer bridge programs on college campuses vary in terms of focus, activities, and the students they serve. Common goals include enhancing enrollment and diversity, and improving retention rates and timely graduation through better preparation of the admitted class. In 2016, Purdue University piloted "Summer Start," a credit-bearing, five-week program for conditionally admitted students that includes enhanced support services. These students did not qualify for the traditional fall admission because their profiles included at-risk characteristics (such as low high school GPA or low standardized test score), so they were admitted on the condition that they attended Summer Start. To gauge the impact of Summer Start, we compared the conditionally admitted students to a nearly comparable at-risk group of new beginner students who started in the fall semester. While the first-semester performance of these conditionally admitted students was slightly below that

of the near-comparison group, as would be expected, their overall performance was better than predicted based on their entry characteristics. The inaugural Summer Start showed that conditionally admitted students can thrive at Purdue with the extra support provided by the program. Additionally, the popularity of the program's benefits (a jump start on courses, moving in early, getting comfortable with campus before thousands of others come, being in a learning community, etc.), combined with campus interest in reducing stress on fall courses, led us to add an opt-in for fall admits for the second summer of Summer Start.

Introduction

The overarching goals of most summer college bridge programs are to provide access and to help improve student success and retention (Garcia & Paz, 2009; Kezar, 2000). The ancillary benefits to the institutions are improvement in key performance indicators, such as retention/graduation rate and tuition revenue. A review of current websites for bridge programs indicates they primarily target students who have already been admitted to the university for the fall. However, some programs include a conditional admission strategy in which students who apply for fall are told that they are required to complete a summer bridge program prior to fall enrollment. In some cases, additional conditions are included, such as achieving a minimum grade point average (GPA), living in a residence hall community, and/or attending a certain number of courses/activities in the summer.

Purdue University has been developing a range of strategies to increase summer enrollment overall, including a specific focus on making greater use of on-campus infrastructure during the summer. Our summer staff, working with enrollment management, found that between 500 and 600 students each year just missed the admission cut for fall at Purdue's main West Lafayette campus because of some weakness in their admission profile, but who showed signs of considerable promise based on an impressive college entrance exam score or GPA. The demographics of this group suggested that a targeted access program would also contribute to enhancing diversity in our first-year class. Thus, the summer staff proposed and were approved to develop a new conditional-admit program with interventions to prepare these students to succeed. We hypothesized that a well-designed, required summer bridge program would support success for students who just missed fall admission standards but who had considerable potential.

After engaging in peer research and conducting site visits at campuses where summer bridge programs were well established, Purdue developed and implemented "Summer Start." The program was piloted in the summer of 2016 as a summer bridge program and was offered as a condition of admission for 500 students who had applied for the fall 2016 term. We yielded 34% (172) conditionally admitted incoming first-year students, 20 students over our initial goal. The yield rate for Summer Start was also higher than Purdue's yield rate for all of its traditionally admitted students in the fall of 2016, which was 26%. Our site visits to other schools suggested that most students who are conditionally admitted will turn the offer down in favor of another school's regular fall admission offer. This held true with our program; however, our 34% yield is in line with the success rate for peers' programs.

Session Details

Timing and Duration

Summer Start students were required to come to campus in the summer and complete seven credit hours of coursework during a five-week session. The coursework was focused on general education requirements. While a strong argument was presented for math and science courses because of the challenges these courses have historically presented to new students, the majority of individuals informally surveyed expressed concern because the already heightened stress of transitioning to college was high. However, we had to be careful not to give the impression that general education courses (e.g., psychology, history, communication) were any less rigorous in college. Using university data was the key to prove drop/withdraw/fail rates. The session ran from July 11, 2016 to August 12, 2016, ending at the start of the university's orientation week, known as Boiler Gold Rush.

Students, their families, faculty, academic advisors, enrollment management staff, and summer staff were surveyed in an effort to gauge the appropriate balance of coursework rigor, learning community activities, academic support, and marketability for such a program. We decided on a five-week session, offered after the Independence Day holiday and before the start of fall orientation, as this balanced the need to provide in-depth and high-quality instruction/support with students' desire to have a long enough summer break after graduating high school.

Stigma and Support

When talking with students (and their families) who received the conditional offer of admission, the majority were excited to have the opportunity to attend a world-class institution, no matter how they got in. Many recognized that there was a weakness in some aspect of their application and were positive about the additional support offered by Summer Start. However, a subset of the students felt that there was a stigma associated with conditional admission, suggesting that "I'm not good enough to get into Purdue regularly." Such a concern was real, and we implemented some small strategies to assuage such feelings. For example, we intentionally avoided branding the program separately from regular Purdue Office of Admissions' marketing (Summer Start does not have its own logo), so that the program is pitched as just another way to get into Purdue. Some students get into the fall with their major of choice, others get into the fall with other major options, and, now, some get into the fall through Summer Start.

Summer Start included focused academic and personal support that was developed based on input from a Summer Start advisory board, consisting of key stakeholders on the academic and student affairs sides of campus. The support included:

- **Small class sizes –** The average course had 25 students.
- **Staff coaching –** Full-time staff were hired to accommodate Summer Start students as part of an existing and successful at-risk student coaching program. The ideal ratio is 1:150.

- **Peer mentors –** Senior class members were assigned to live with the students in a ratio of 1:25 and provide insight into campus life as current, successful students; they were separate from student resident advisors.
- **Faculty –** Faculty with excellent reputations for teaching and for being student-services minded were recruited to be the instructors.
- **Living-learning community –** The University Residences division implemented an official living-learning community structure for the Summer Start cohort.
- **Regular services –** As tuition/fee-paying students, all other regular services on campus, such as the counseling center, the recreation center, academic advising, etc., were open to Summer Start students.

Cost to Students

While most were excited about the offer, and some were apprehensive, all students and families were positive about the fact that the cost to them was the regular tuition and fees for the seven credit hours of coursework, plus housing and dining fees. There was no additional fee for the enhanced support program; the additional cost of this was absorbed within the overall summer budget and justified financially in terms of the long-term value of the additional enrollment as well as the nonfinancial value tied to meeting goals connected with our land-grant mission.

How Do Summer Bridge Students Perform Compared to Their Peers?

To determine the impact of the summer bridge program on its participants, we worked closely with Purdue's Office of Institutional Research, Assessment, and Effectiveness (OIRAE) to gather and analyze institutional data that compared the 2016 Summer Start cohort to a comparable peer group of first-year, non-Summer Start Purdue students (referred to in this paper as the "comparable at-risk cohort"). This section will briefly describe the model used by OIRAE and the findings from their analysis of the 2016 Summer Start cohort compared to the comparable at-risk cohort as well as the new beginner cohort (all new beginners for fall 2016, not including Summer Start students).

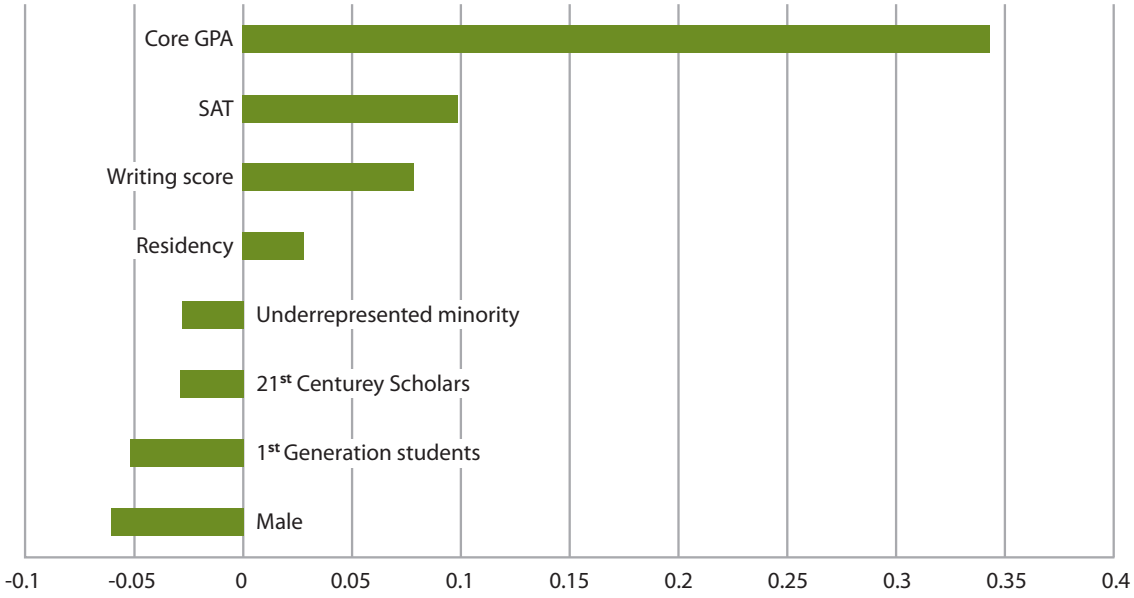
At-Risk Predictive Model and Comparison Groups

OIRAE has developed a statistical model to predict and identify students that are likely to be at risk in their transition to college (Purdue OIRAE Briefing, 2015). Based on data from new beginning students from fall 2012 and fall 2013, a regression model was built to predict students' cumulative GPA at the end of the first semester, based on students' pre-college characteristics. Students who were predicted to earn an end-of-first-semester cumulative GPA of 2.5 or less were deemed to

be "at risk" of not transitioning successfully to Purdue. Variables that were found to most strongly correlate with first-semester GPA (see Figure 1) included:

- Core GPA (unweighted high school GPA based only on core academic subjects)
- Highest standardized verbal and math test scores (SAT, ACT) scaled to the SAT score
- Highest standardized writing score (SAT, ACT) scaled to the SAT score
- 21st Century Scholars
- 1st generation students
- Underrepresented minority (URM) students
- residency
- gender

The first four factors positively relate to GPA, while the last four variables are negatively correlated with first-term cumulative GPA.



Note: All coefficients are statistically significant at 1% level and the overall model is statistically significant (overall F-statistics is 388.17, p-value<0.0001).

Figure 1: Standardized Coefficients for At-Risk Student Model (Cumulative GPA Model)

The at-risk data were used to develop the comparable at-risk cohort for our statistical analysis, as follows:

1. Start with all 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.

By using this approach, OIRAE was able to identify a group of 640 new beginner at-risk students (the comparable at-risk cohort) who shared strong similarities with the Summer Start cohort.

Student Characteristics Comparison

The inaugural Summer Start cohort in 2016 consisted of 170 students who enrolled in summer and matriculated to the subsequent fall 2016 term. These 170 students can be compared to the university's new beginner cohort, which consists of high school graduates starting post-secondary education for the first time (Table 1). Compared to the 7,073 non-Summer Start students in the new beginner class (7,243 total new beginners – 170 Summer Start cohort = 7,073), the Summer Start cohort has a higher percentage of Indiana residents (77.6%) and women (50.0%), African American (7.7%) and Hispanic/Latino (10.6%) students, and first-generation (38.8%) and Pell Grant[1] recipients (32.9%). The first-generation and Pell Grant rates are approximately twice those of the university's new beginner cohort. Thus, the Summer Start program serves a greater percentage of students in groups traditionally categorized as at risk.

Table 1: Fall 2016 Summer Start Cohort vs. Non-Summer Start Cohort — Demographics*

	Summer Start Cohort		Non-Summer Start Cohort	
Total number		**170**		**7,073**
	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	3041	43.0

1 A Pell Grant is a financial aid award from the federal government to undergraduate students that do not require repayment by the student. For more information on Pell Grants, visit https://studentaid.ed.gov/sa/types/grants-scholarships/pell

	Summer Start Cohort		Non-Summer Start Cohort	
Total number		**170**		**7,073**
	N	**%**	***N***	**%**
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

* Total new beginners = 7,243

Not surprisingly, due to the nature of the conditional admission criteria, students in the Summer Start cohort are less academically prepared for college than the non-Summer Start new beginner students, as measured by standardized test scores and high school GPA (Table 2). The Summer Start cohort's SAT total test scores average 283 points lower than the non-Summer Start students, with the greatest difference (106 points) occurring in the math score. Only 51.2% of the Summer Start cohort students submitted an ACT score to Purdue University. For these students, the greatest differences in scores were in the ACT math and English tests. The Summer Start cohort also had a 0.39 lower high school transcript GPA than the non-Summer Start cohort.

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

SAT scores	Summer Start Cohort	Non-Summer Start Cohort
Total number submitting SAT	135	4,825
SAT total	1,507	1,790
SAT verbal	498	585
SAT math	522	628
SAT writing	486	577

SAT scores	Summer Start Cohort		Non-Summer Start Cohort	
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	
SAT Scores				
High school GPA	*N*	GPA	*N*	GPA
	169	3.36	6,110	3.75

In contrast to the comparison with the new beginner cohort, the Summer Start cohort and the comparable at-risk group are far more similar in demographic breakdown by residency, gender, ethnicity, first generation, and Pell Grant (Table 3). Differences between the two cohorts emerge, however, in standardized test scores and high school GPA; Summer Start students are lower than the students in the comparable at-risk group (Table 4). This is consistent with the fact that the Summer Start students were not accepted for fall admission but were directed to Summer Start as a condition for their admission to Purdue.

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

	Summer Start Cohort		Comparable at-risk Cohort	
Total Number		**170**		**640**
	N	**%**	***N***	**%**
Residency				
Resident	132	77.6	456	71.3
Nonresident	38	22.4	184	28.8
Gender				
Men	85	50.0	346	54.4
Women	85	50.0	292	45.6
Ethnicity				
American Indian/Alaska Native	0	0.0	1	.02
Asian	16	9.4	40	6.3
Black or African American	13	7.7	52	8.1
Two or more races	6	3.5	15	2.3

	Summer Start Cohort		Comparable at-risk Cohort	
Total Number		**170**		**640**
	N	**%**	***N***	**%**
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. Compa rable At-R isk — Profile

SAT scores	**Summer Start Cohort**	**Comparable at-risk Cohort**
Total number submitting SAT	135	472
SAT total	1,507	1,606
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

SAT Scores				
High school GPA	*N*	GPA	*N*	GPA
	169	3.36	637	3.43

Outcomes

Summer Start students were successful during the summer session, as measured by average GPA (3.3) and persistence to the fall semester (98%). However, our key question was how Summer Start students would perform during the fall semester, without the focused support of the pro-gram. The Summer Start cohort had a GPA slightly lower than the comparable at-risk group (Table 5) and significantly lower than their summer semester GPA. Considering that the comparable at-risk cohort has a slightly higher probability of success at Purdue than the Summer Start cohort, it is not surprising that they performed slightly above the Summer Start cohort.

The at-risk index from OIRAE predicted that 81% of Summer Start students would be below a 2.5 GPA in fall term, but only 63% earned below 2.5 GPA for fall. This indicates that participating in Summer Start did help a significant number of students perform better than they likely would have otherwise. Twenty Summer Start students, who would not have been admitted to Purdue without this program, earned dean's list and semester honors in the fall 2016 term.

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

SAT scores	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

The Summer Start cohort performed better in their summer courses, presumably because of the focused summer support and smaller class sizes, which may suggest that enhanced academic-year support would further increase the success of these students. Enhancements for Summer Start students are being planned for subsequent years.

It is important to highlight what students who participated in Summer Start briefly shared regarding their experience and perception of the value of the summer bridge program. Many summarized identified advantages and benefits of being a Purdue Summer Start student:

> "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."
>
> "This program was very helpful with regards to getting us ready for the fall semester. It gave us the support we would otherwise not get in the fall with so many incoming freshmen coming to campus. This support made it feel easier to adjust to campus life and will hopefully help us to succeed in the rest of our college lives."
>
> "The program was super-fast-paced and intense, but it was a good challenge and I think I will benefit from the experience in the future."
>
> "I loved Summer Start! At first I was upset by the idea that I had to give up five weeks of my summer, but it was completely worth it. I have so many friends going into the fall, and I now know how to get around campus."

Conclusion and Changes for Year Two

We compared the performance of conditionally admitted students who participated in Summer Start to a nearly comparable group of at-risk students during the fall semester. Summer Start students had an average GPA of 2.4, compared to 2.7 in the nearly comparable group. An at-risk index predicted that 81% of Summer Start students would have a GPA below 2.5 in the fall term, but only 63% earned below 2.5, and 20 Summer Start students earned dean's list and semester honors. This demonstrates that many students who are less academically prepared for success at Purdue can succeed with appropriate support.

Summer Start brought in students from at-risk backgrounds and demographics who often are not given the opportunity to attend a university like Purdue. In its first year, the program expanded access to the institution to a larger percentage of African American (7.7%) and Hispanic/Latino (10.6%) students as compared to the non-Summer Start fall 2016 new beginners. Thirty-nine percent (39%) of Summer Start students were first-generation college students, and 32% were Pell Grant recipients. Despite these at-risk characteristics, Summer Start's effectiveness is evident in the students' performance—37% earned a GPA over 2.5 in the fall term, which was much better than predicted. This demonstrates that at-risk students can succeed if provided with support and resources in the transition to college.

Future improvements to the program will focus on continuing support beyond the summer term and into the subsequent fall and spring terms. This will include 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 admissions 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. We will continue to track the inaugural Summer Start cohort and the comparable at-risk cohort to look at first-to-second-year retention, four- and six-year graduation rates, and the percentage of those students who take additional courses during the summer sessions.

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Biographies

Jacob Askeroth is an associate director of Digital Education at Purdue University and formerly held the role of assistant director of Summer Session, where he contributed to the promotion of summer enrollment strategies and initiatives, specifically Summer Stay Scholars. He is also currently pursuing a doctorate degree in learning design and technology at Purdue.

Jon Harbor is associate vice provost for Teaching and Learning at Purdue University, as well as a professor and executive director of Digital Education. He oversees summer session administration and is part of a team seeking to transform summer education at his university.

Blake Nemelka works in the dean's office of the Jon M. Huntsman School of Business at Utah State University and is a doctoral student at Purdue University, West Lafayette. Blake was the director of Summer Session at Purdue from 2015–2017. The director position was established for the first time at Purdue in April 2015. He comes from a background in enrollment management and continues to research and speak about summer enrollment strategy in all its forms.