Providing Opportunities for Retention, Progression, and Graduation of Special Populations

Sri Sitharaman
Columbus State University

Melody Shumaker
Columbus State University

Hassan Hassani
Columbus State University

Columbus State University's (CSU) first-time full-time freshman six-year graduation rate has improved from 32.4% for cohort 2011 to 39.5% for cohort 2013. However, the one-year freshman retention rate has declined from 74% for cohort 2016 to 72% for cohort 2018. Many students are unable to progress to graduation because they end up on academic probation, academic exclusion or unsatisfactory academic progress status for receiving any financial aid. CSU will explain strategies used to improve academic success for these under prepared students.

Keywords: student success, retention, learning support

INTRODUCTION

Columbus State University (CSU), is a member of the University System of Georgia (USG) which is comprised of 26 colleges and universities. Located in western Georgia, CSU primarily serves students from Columbus, Georgia and nine extremely rural counties. The USG designates CSU as one of the three "access" institutions within the state because no state colleges in the USG are located within the geographic service area.

Columbus State University is a moderately selective institution with freshman applicants requiring a minimum high school grade point average of 2.5 and SAT minimum scores of 440 Critical Reading and 410 Math or ACT English 17/Math 17. In accordance with the USG mandated local access mission, the minimum requirements for freshman applicants within the local service area are high school grade point average of 2.0 and SAT minimum scores of 330 Critical Reading and 310 Math or ACT English 12/Math 14. While the University takes pride in its role as an access institution, this role presents challenges in retention and student success.

CSU's Strengthening Institutional Programs (SIP) provides academic support services for four student groups - students on learning support, students on probation/exclusion, students with Unsatisfactory Academic Progress for financial aid (USAP), and transfer students with GPA less than 2.0. The persistence

rates of these student groups compared to the retention rate of First-Time Full-Time (FTFT) freshman students are presented in Figure 1.

STUDENTS IN NEED OF LEARNING SUPPORT

Students who do not meet CSU's minimum requirements in the SAT® or ACT® and non-traditional students may take the ACCUPLACER® placement exam to be exempt from learning support in mathematics and English. The retention rate of the FTFT cohort of learning support (LS) students at CSU for the 2018-2019 academic year was 59.7% compared to the FTFT cohort of non-learning support students at 72.3%. The graduation rate for the 2013 FTFT cohort of LS students was 9.5%. This is significantly lower than the 42.8% graduation rate of the 2013 FTFT non-learning support students.

FIGURE 1
PERSISTENCE RATE TREND
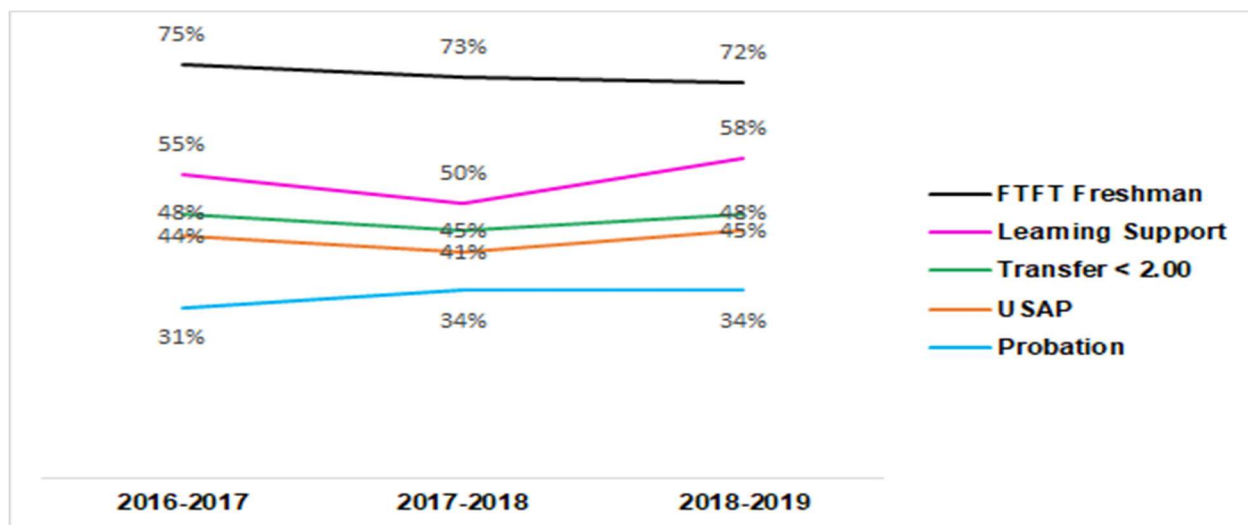
STUDENTS ON PROBATION OR EXCLUSION

Students whose term grade point average (GPA) falls below 2.0 are placed on Probation I. Students placed on Probation I who do not increase their institutional GPA to 2.0 or higher are placed on Probation II. Students already on Probation II who do not increase their GPA to 2.0 or higher are placed on Exclusion I. Students on Exclusion I are not allowed to enroll for one semester. Students in this category can appeal the exclusion through the dean of their college. If the appeal is approved, the student is placed on Exclusion Override and has to develop an academic plan with the advisor. Excluded students who do return, but do not increase their GPA are placed on a second exclusion and are not allowed to re-enroll for a full year. This scenario decreases the probability that the student will return to the university to earn a college degree.

STUDENTS TRANSFERRING WITH LESS THAN A 2.0 GPA

Every year about 1,000 students transfer into CSU from two-year colleges, technical colleges and four-year institutions. A few students transfer in with a GPA below 2.0. As an access institution, CSU accepts these students and provides resources and services to help them increase their GPA, and graduate with a degree.

STUDENTS WITH UNSATISFACTORY ACADEMIC PROGRESS IN FINANCIAL AID

In 2018-2019, about 3,400 or 51% of students at CSU received approximately $15 million in PELLgrants. Students took $46 million in loans during this time period. Because of the heavy reliance on financial aid, it is important for students to maintain satisfactory academic progress. If students are unable to maintain satisfactory academic progress and lose their financial aid and have no other option for funding their education, they tend to withdraw from the university.

BACKGROUND

Prior to Fall 2017, CSU did not have specialized advising, coaching and mentoring for students onlearning support, probation or exclusion override, low transfer GPA, and unsatisfactory academic progress. In fall 2017, a Retention Specialist was hired by the College of Letters and Sciences (COLS). The Retention Specialist received a caseload of 62 students from COLS out of which 30 were on probation or exclusion override status, 27 were USAP and 5 were transfer students with low transfer GPA. These students faced several challenges as there were no formal processes for staff and faculty advisors to meet and assist these students to help them connect to appropriate campus resources that would best serve their requirements to succeed at CSU. The Academic Center for Tutoring (ACT), which offers tutoring for all CSU students, had tutors who were not trained to address the academic challenges faced by these four student groups. Further, there were no peer mentors who had specialized training to recognize and match resources to the needs of these academically struggling students, and provide coaching, mentoring, and tutoring support services.

Annually, the average number of applicants who place into developmental English and/or mathematics courses ($N = 200$) by the USG Board of Regents formula equates to about 25% of the institution's first-time entering freshmen. Out of these 200 LS students, about 38% ($N = 75$) are dismissed for not passing ENGL 0989 (Foundations for English Composition), MATH 0987 (Foundations for Quantitative Reasoning), MATH 0989 (Foundations for College Algebra), ENGL 1101 (English Composition I), co-requisite course ENGL 0999, MATH 1001 (Quantitative Skills and Reasoning), co-requisite course MATH 0997 (Support for Quantitative Reasoning), and/or MATH 1111 (College Algebra) with co-requisite course MATH 0999 within two semesters. Since about 75% of LS students require support in mathematics, if an average LS in-state student failed a four credit-hour developmental course, the cost to the student applying CSU's 2017–2018 Academic Year rates is $696.80 for tuition and $792.50 for fees which equals $1,489.30. The same costs apply if a LS student failed a three credit-hour gateway course and the one credit-hour co-requisite course.

Analysis revealed CSU was missing a central one-stop location where necessary LS services such asacademic coaching (tutoring and mentoring) can be directly provided in a welcoming environment. The university lacked funding to purchase items to outfit the Learning Support Success Center such as, but not limited to: bookcases, Chromebooks®, laptop computers, tablets, desktop computers with monitors, conference tables, conference table chairs, a copier, room renovations such as dropping Ethernet connection points, file cabinets, laser printers, shelves, an interactive Smartboard, standard chairs, software, surge protectors, telephones, a fax machine, and supplies. The university also did not have the funds to hire individuals to help with the management of a central location to house LS services.

All LS students in ENGL or MATH developmental courses or gateway courses with co-requisite courses received tutoring assistance from CSU students hired by the ACT. An analysis of the tutoring provided to LS students revealed that tutors from ACT, who were excellent tutors for non-LS students, often lacked the knowledge to adequately breakdown subject material so LS students can assimilate the materials. Further, it was discovered that LS students had no peer mentors on campus to provide additional support to these students. The CSU SIP Team determined specific activities to strengthen students' understanding of course content and increase retention, progression, and graduation (RPG) at the university which are discussed below.

Another significant problem was that students who were placed on Probation II had a 50% chance of leaving the university which equates to about 27 students per semester which is a lost revenue stream for the university. Also, on average about 167 students were placed on Exclusion each semester and about 64% were dismissed by the appropriate dean which is another lost revenue stream for the university. On average if a CSU student successfully takes 12 credit hours per semester over five years to graduate with a baccalaureate degree, the individual payment to the university totals over $30,000 in tuition and fees. So, the loss of even one Probation II or Exclusion student has severe financial ramifications for CSU. Even more important than lost revenue, Probation II or Exclusion students that leave the university have a much lower probability to acquire a college degree and negatively affects CSU's RPG rate. Thus, specific activities were identified to increase students' understanding of course content and to also increase retention, progression, and graduation at the university which are discussed below.

Students who transfer to CSU with a GPA below a 2.0 have already demonstrated poor academic progress and were beginning their degree path at CSU with severe deficits. There was a lack of institutional protocol and lack of available resources to assist this population group. Specific activities were also identified to increase students' understanding of course content and to also increase retention, progression, and graduation at the university which are discussed below.

The final significant problem addressed was the lack of centralization of services for Unsatisfactory Academic Progress (USAP) students who become ineligible to continue receiving federal and/or state financial aid due to this status. In the fall 2016 semester, there were 334 USAP students in danger of losing their continued eligibility to receive federal and/or state financial aid. If just 50% of the USAP students, who are in-state students, become ineligible to continue to receive federal and/or state financial aid ($N = 167$) and have to withdraw from the university, they cannot register for the next semester equating to a $527,695 loss of tuition and fees. About 90% of CSU students receive financial aid. Students who withdraw from the university due to a loss of financial aid, seldom ever return to the institution. As mentioned in the section on Probation/Exclusion students, on average if a CSU student successfully takes 12 credit hours per semester and takes five years to graduate with a baccalaureate degree, the individual will pay over $30,000 in tuition and fees to the university. So, the loss of even one USAP student has severe financial ramifications for CSU. The activities to assist this population group are discussed below.

CSU'S STRENGTHENING INSTITUTIONAL PROGRAMS

In the spring of 2017, Columbus State University applied for a title III Strengthening Institutional Programs Grant from the US Department of Education. In the fall of 2017, the university was awarded a $3 million dollar award over a five year period. The title of this project is called *Making Underprepared Students Prepared for College Success: A Grassroots Level Approach to Improve and Sustain Retention, Progression, and Graduation.* There are four population groups serviced by the grant including students with Learning Support status, Probation/Exclusion Status, Transfer Status, and USAP status. The key activities of the grant include providing peer coaching, mentoring and tutoring to these student population groups and specialized advising for students with Probation/Exclusion status, Unsatisfactory Academic Progress, and Low GPA Transfer Status.

Based on the significant problems stated above, Strengthening Institutions Programs (SIP) objectives developed for these student groups include increasing number of students attending Learning Support, Probation/Exclusion, Transfer Student and Satisfactory Academic Progress Coaching; increasing student's understanding of course content; increasing retention, progression and graduation of Learning Support, Probation/Exclusion, Transfer Students and Satisfactory Academic Progress students; increasing revenue from tuition and fees from the retention of Learning Support, Probation/Exclusion, Transfer and Satisfactory Academic Progress students; and producing results of the quasi-experimental design.

RESOURCES AND SERVICES

Students are serviced by two main arms to the grant, The Learning Support Success Center (LSSC)and the Academic Center for Coaching (ACC). Learning Centers and specialized skills labs are a vital part of academic preparedness (Perin, 2004). Thus, CSU set up the Learning Support Success Center to provide students placed in Learning Support intensive academic support, especially in core Math and English courses; strengthened the advising center with the establishment of the Academic Success Advising and Coaching Center to provide students with Probation/Exclusion status, Transfer status and USAP status intensive advising, peer coaching, test anxiety workshops, and other services supporting these students. CSU contracted with the National Center for Development Education (NCDE) to complete a program evaluation and to institute a training process for advisors, peer mentors, coaches, and tutors. National Center for Developmental Education visited CSU and analyzed current practices for Learning Support, Probation/Exclusion, Transfer, and USAP students.

Based on the review, they provided recommendations to enhance best practices implemented by the SIPTeam. These practices included onsite and online training sessions developed with results of the analysis of current services. The training topics included teaching and learning techniques, interviewing and listening techniques, growth mindset, and models of student development. The latter training was included in workshops provided during the 2018-2019 academic year by the NCDE. The LSSC also contracted with the NCDE to provide digital training modules on Growth Mindset and study strategies in the fall of 2019. The quality and amount of training given to individuals servicing underprepared students impacts the success of endeavors to improve performance of underprepared students (Boylan, Calderwood, Bonham, 2017; McCabe, 2003). For this reason, training was at the crux of our efforts. NCDE also developed a training manual. The training manual contains material pertaining to peer coaching roles and responsibilities, peer coaching ethics, FERPA Basics, student engagement techniques, peer tutoring techniques, and growth mindset practices (Boylan, 2018). In addition to training sessions, this manual is distributed to coaches prior to the start of each semester.

The establishment of the Learning Support Success Center (LSSC) as a resource center for studentswith Learning Support English and Math status has given this population group the opportunity to regularly engage with faculty, staff, and peer tutors/coaches/mentors, best practices in plans of study, and technological tools to enhance learning. A director, Mathematics faculty member, Administrative Coordinator, and Graduate Assistant manage the program. These individuals are responsible for coordinating learning plans and student schedules, monitoring success, addressing student academic, resource management needs, and support skills needs. The Learning Support students participate in weekly coaching, mentoring and tutoring sessions with peers to enhance knowledge base in identified Math or English subject areas, to make connections to campus resources, and to further develop students' life skills. These types of services can support at-risk students' progression through college classes which leads to graduation from college (Rheinheimer, D.; Grace-Odeleye, B.; Francois, G.; Kusorgbor, C., 2010). The services are provided in person and online seven days a week. These practices are enhanced by the equipment provided by the grant which include All in One computers, Smart Boards, portable white boards, I-pads, and tablets for participants and coaches to use within the Center and online.

As a part of USG's Momentum Year Initiative, a mandate was given to change Learning Support course offerings. This mandate mirrors national changes shifting from a developmental course model to a fully co-requisite model. To align with this mandate, CSU's developmental LS courses were replaced with one and two credit hour co-requisite support pieces in Math to be paired with the core Math course. Developmental English courses were eliminated due to a very low student population. LS English classes are now offered in the co-requisite model consisting of the core English class and the one-credit hour co-requisite course. With the creation of the Learning Support Success Center (LSSC), students are now able to receive one-on-one tutoring, coaching, and mentoring as the Math co-requisite courses are now offered in a modified emporium model as a part of this program. In addition to tutoring in the content area, students receive support in the area of building skills such as goal-setting, time management, note-taking, and specialized study skills for mathematical content. English co-requisite labs are offered to students who place into these

support courses. A faculty member and an academic coach from the LSSC are present during these weekly labs to engage with students one on one with essay writing assignments. The peer coach then holds office hours in the LSSC to provide additional support in this area or complementary areas such as peer mentoring or coaching in the area of college success skills such as goal setting, time management, and note-taking. Students participate in these support sessions 2-4 hours a week.

The Academic Center for Coaching is an entity for students with Probation/Exclusion, Transfer and USAP status to receive coaching, tutoring, advising and mentoring from peer tutors and Academic Advisors. The Center is staffed with a director, an advising and coaching coordinator, two academic advisors and multiple coaches/tutors/mentors. These individuals provide services to these population groups and are a part of the campus Advising Center. They are also responsible for assessing student needs, creating student referrals, and student learning plans. Students participate in tutoring for various subjects, mentoring, and coaching for college success and life skills. They are also familiarized with campus resources including the Center for Accommodations and Access, the Counseling Center, and the Financial Aid office and other campus centers. In addition to human resources, technological resources have been provided through the grant such as computers, Smart Boards, portable white boards, and tablets to provide effective learning processes. Students are serviced at critical points throughout the semester in person and in an asynchronous format.

Probation students are required to take a Probation Assessment Form that assesses the student's strengths and weaknesses. Program advisors e-mail students on Probation status to schedule a meeting to complete this Probation Assessment Form. The coordinator and advisors ensure students are engaged with and develop an academic success plan based on survey assessments. The SIP Advisor then recommends skills improvement workshops like note-taking, time management, tutoring, effective communication, anxiety reduction and syllabus planning. The students are also directed to campus resources including Counseling Center, and the Center for Accommodations and Access. Students meet the SIP advisor again after mid-term grades are released to discuss how they can improve their final grades and what courses to register for in the next semester. For students who do not participate, a hold is placed on the student record to encourage participation. Students who do not improve during the course of the semester have the opportunity to do so in successive semesters.

Transfer students are also reached out to by advisors to schedule conferencing sessions. A learning assessment is given, and discussions are had to identify college success practices that can enhance academic performance. Students are given learning plans and referrals to campus resources as needed. Students then participate in skills improvement workshops like note-taking, time management, tutoring, effective communication, anxiety reduction, and syllabus planning. Appointments are scheduled for coaching and tutoring sessions in subject and skill areas where additional practice is needed. When the situation deems necessary, students are directed to campus resources including Counseling Center, and the Center for Accommodations and Access. Students are given midterm grade checks for advising purposes and final grade checks to identify what classes to register for in the next semester. Students who do not improve during the course of the semester have the opportunity to do so in successive semesters.

Students on Unsatisfactory Academic Status have regular meetings with an advisor with this case load. These students meet with the advisor to identify positive actions that will lead to a better understanding of academic practices to regain satisfactory academic status. As a part of the grant, CSU has also acquired the Campus Logic software add-on to send multiple definitive letters to students who are in need of having a better understanding of financial aid and their current status. Students are also given the opportunity to participate in a financial literacy program that has resulted from a grant sub award. This financial literacy program introduces students to basic knowledge in budgeting, credit, and spending. These modules are easily available to students on our course management website. As students work on the course, they are given a complementary text and a financial calculator to help them better understand how to process financial calculations. A financial advisor has been approved to assist students who have this specific need. This individual will help students with academic progress needs and financial aid awareness needs which will improve the chance of the student with retention, progression, and graduation.

Among campus programs sharing common objectives is the University Counseling Center. The Counseling Center has provided support to the Learning Support Success Center and Academic Center for Coaching since 2018. Support includes a Math anxiety reduction training provided to the SIP team by the Director of the Counseling Center, Math anxiety reduction and mental health workshops for students and individual student sessions provided by Counseling Center assistant and Graduate Assistant, implementation of the Strong's Inventory, evaluation of students needs for Accommodation and Access, and therapy as needed. These individuals donated multiple hours each semester to provide needed support to these students. Topics include coping with anxiety and depression, preventing suicide, and dealing with trauma. A study of over 150,000 college and university students by the Center for Collegiate Mental Health found a 50% increase in counseling visits, particularly for students presenting anxiety and depression (Center for Collegiate Mental Health, 2017). At CSU, another effort to improve student services is the implementation of the Behavioral Assessment Response Team (BART) who responds to reports submitted by faculty and staff regarding students needing interventions. These reports are evaluated by Counseling Center experts and help to identify students who need interventions. The intervention provided by CSU's Counseling Center exemplifies services proven to be successful in improving the persistence and graduation rates of underprepared students. (Scrivener, Weiss, Ratledge, Rudd, Somo, & Fresques, 2015; Edgecombe & Bickerstaff, 2018).

RESULTS

The SIP project design is based on the evaluation conducted in 2010 by Manpower Development Research Corporation of an accelerated learning program for low-income students at three large community colleges in New York City. The students required one or two developmental courses in math, reading, or writing at an accelerated rate and had key interventions such as advising, coaching, mentoring, career services, and tutoring. The study indicated that comprehensive long-term interventions including enhanced advising and financial support can result in significant changes in enrollment, retention, and credit accumulation. Further, requiring students to participate in key program components, monitoring participation, and providing meaningful benefit to those who participate fully could significantly increase service effectiveness (Scrivener et al., 2015).

TABLE 1
STUDENTS SERVICED BY SIP PROGRAM

	Fall 2018	Spring 2019	Summer 2019
Probation	100	159	50
USAP	82	28	21
Transfer below GPA 2.0	25	8	1
Learning Support	120	66	15

During FY 1819, the SIP grant serviced 675 students comprising of 309 Probation, 131 USAP, 34 Transfer, and 201 Learning Support (LS) students. The number of students served in Fall, Spring and Summer terms are as in Table 1.

Through the CSU SIP academic coaching programs, course completion rates have increased in many areas where service was provided. LS students taking core Math courses had a course completion rate of 71.6% surpassing our target of 47%. Course completion rates for LS students taking core English courses surpassed our target of 53% with a 94% course completion rate. The completion of 30 credit hours by LS

students surpassed the target of 34% with a 40.2% completion rate. This data demonstrates that student services conducted were quite productive.

Increases have also been achieved in the academic coaching programs for Probation, Transfer, and USAP students. Between Fiscal Years 1718 and 1819, there was a 53% increase in the number of probation students served by the Academic Center for Coaching (ACC). Further, 43% of probation students who met with the ACC increased their GPAs to 2.0 or greater. Of the USAP students who were served by the ACC, there was a 26% decrease in the number of students who lost their eligibility for state and/or federal financial aid. Most impressively, 74% of the transfer students served by the ACC increased their institutional GPAs to 2.0 or greater during FY 1819.

The evaluation of this program used a quasi experimental design. Students who used the SIP services were placed in the Experimental group. Eligible students who did not use the SIP resources served as the population to draw the matching Control group participants using Propensity Score Matching (PSM). PSM is an often-used technique to estimate the causal impact of an intervention when there is no random assignment to the control and experimental groups. Situations where it is unethical to randomly assign to a treatment as in many student services like tutoring, supplemental instruction, or special advising services, this statistical procedure has been very useful. This matching helps strengthen causal arguments in quasi-experimental and observational studies by reducing selection bias (Randolph, Falbe, Manuel, and Balloun, 2014). So, if factors related to participants' self-selection into an intervention are known, the bias associated with self-selection can be accounted for by using propensity score matching methods (Harris & Horst, 2016; Austin, 2011; Rosenbaum & Rubin, 1983, 1984). Key covariates include variables that are related to self-selection into the intervention and to the outcome of interest (Stuart, 2010). Stuart & Rubin(2008a) recommend using a large set of covariates even if some of the covariates are only related to self-selection and other covariates, and not necessarily to the outcome of interest. Propensity score matching was done with the MatchIt (Ho, Kosoke, King, and Stuart, 2011) package in R (R Core Team, 2014), which is a widely used open-source software.

For Fall 2018 and Spring and Summer 2019, the data was collected at the end of the semester by accounting for the number of students who attended probation appointments. The probation appointment is an in-depth and comprehensive assessment of a student's academic, demographic, financial and lifestyle factors which influences their college performance. The appointment data was quantitative in nature with some qualitative responses. The data was collected through Qualtrics which is protected by the University's IT department. The collected data from Qualtrics was measured against the target percentage of students served. An overall total of 309 Probation I and Probation II students were serviced during FY 1819: 100 Probation I and Probation II students attended appointments in Fall 2018; 159 Probation I and Probation II students attended appointments in Spring 2019; 50 Probation I and Probation II students attended appointments in Summer 2019.

In comparison, a total of 180 Probation I and Probation II students were serviced in FY 1718. Baseline data for Probation I and Probation II students served was collected using Banner which is the database management system for storing all student information in the university. In Fall 2017, 30 students attended appointments; 139 students attended in Spring 2018; 11 Probation I and Probation II students attended in Summer 2018. Overall, the number of Probation I and Probation II students served increased from 180 in FY 1718 to 309 in FY 1819, representing a 58 percent increase.

Out of the total 309 students served during FY 1819, an overall total of 132 increased their GPA to at least 2.0 from beginning to end of semester, representing a 43 percent change; 46 increased their GPA to a 2.0 or better in Fall 2018; 70 increased their GPA to a 2.0 or better in Spring 2019; 16 increased their GPA to a 2.0 or better in Summer 2019. About 43% of the students (132/309) moved to Good Academic Standing after one term, 41% (105/259) were on Good Academic Standing after two terms and 43% (43/100) were on Good Academic Standing after three terms. The one-semester retention rate was 51% (133/259), and one-year retention was 48% (48/100).

In the Quasi-Experimental design, the SIP serviced students had a significantly higher average Fall term GPA of 2.07 compared to 1.61 for the non-SIP students (p=0.005). The SIP serviced students also had a significantly higher average Spring term GPA of 2.09 at the end of Spring 2019 compared to 1.52 for the

non-SIP students (p <0.001). The SIP services helped improve the GPA of students served in Fall 2018 by 0.46 and students served in Spring 2019 by 0.57.

Sensitivity analysis as suggested by Rosenbaum (2002) was conducted using the rbounds package (Keele, L., 2015) and matching package (Sekhon, J., 2011) in R to determine if omitted variables will make the treatment effect insignificant. A study is sensitive if values of Gamma close to 1 lead to changes in significance compared to those that could be obtained if the study is free of bias. Thus, results will be more robust to hidden bias, if a very large change in the odds is needed for a change in statistical significance. The Gamma values of 1.4 for the Fall 2018 and 1.9 for Spring 2019 confirm that the treatment effect for Spring 2019 is more robust than the treatment effect for Fall 2018. The Propensity Score Matching statistics are in the Appendix.

In FY 1819, among students taking ENGL 1101, 42 students needed the corequisite ENGL 0999 Learning Support course while 1,144 students did not need any support. Ninety-five percent of the Learning Support students (40) and 85% of the Regular students (983) received a productive grade in ENGL 1101. In the PSM study, only students with an ACT English score less than 20 were selected for the control group to match the abilities of the learning support students. After matching on covariates, there was no significant difference in the average ENGL 1101 grade received by learning support students (2.57) and regular students (2.37).

Among students taking MATH 1111, 92 students needed the corequisite MATH 0999B/0999C Learning Support courses, while 1,019 students did not need any support. In MATH 1001, 67 students needed the corequisite MATH 0997B/0997C Learning Support courses, while 243 students did not need any support. Seventy percent of the Learning support students (64) and 84% of the Regular students (851) received a productive grade in MATH 1111. Seventy-five percent of the Learning support students (50) and 85% of the Regular students (206) received a productive grade in MATH 1001.

In the PSM study, only students with an ACT Math score less than 20 were selected for the control group to match the abilities of the learning support students. After matching on covariates, there was no significant difference in the average MATH 1111 grade received by learning support students (1.70) and regular students (1.92). However, the Regular student group had a significantly higher average MATH 1001 grade (2.40) compared to the learning support group (1.92) at p=0.044.

In the Math LS student group, 65 out of 86 students successfully passed the gateway course in Fall 2018. In Spring 2019, 39 out of 58 successfully passed the course, and in Summer 2019, 10 out of 15 successfully passed the course. The student success could be attributed to the academic coaching best practices in place. These practices include utilization of growth mindsets, metacognition, and interviewing techniques as coaches reviewed course material disseminated by course instructors in settings conducive to dialog, discussion, and practice to support our student population. The target was exceeded which will positively impact retention and progression. A total of 2,514 hours were spent by all students in LSSC during Fall 2018, 1,599 hours in Spring 2019, and 217 hours in Summer 2019.

The SIP grant serviced 34 Transfer students. About 74% of the students (25/34) were on Good Academic Standing after one term, 58% (19/33) were on Good Academic Standing after two terms and 48% (12/25) were on Good Academic Standing after three terms. The one-semester retention rate was 82% (27/33), and one-year retention rate was 60% (15/25). Of the 34 transfer students served in FY 1819, overall 25 students increased their institutional GPA to 2.0 or above. In Fall 2018, 19 transfer students increased their institutional GPA to 2.0 or greater and 6 students increased to a 2.0 or greater in Spring 2019.

A total of 131 students used SIP services for advising on USAP progress. At the beginning of the term, 43% of these students (56) were eligible to receive financial aid. Thirty-two percent (42) of the students were eligible to receive financial aid after one term and 25% of the students (33) continued to receive financial aid after two terms. The one-semester retention rate for the USAP students was 61% (80/131) and one-year retention rate was 46% (38/82). In the PSM study, for the Fall 2018 USAP students, there was no significant difference in the average Fall term GPA of SIP students (2.32) and non-SIP students (2.31). No PSM study was conducted for the Spring 2019 students and a more relevant outcome variable for this group will be explored.

In FY 1819, 34 out of 131 (26%) students served were able to reestablish Title IV eligibility. In Fall 2018, 19 students reestablished Title IV eligibility, 6 students reestablished eligibility in Spring 2019 and 9 students reestablished in Summer 2019. By the end of Fall 2019, SIP services helped 3 students earn an Associate's degree and 28 students earn a Bachelor's degree.

CONCLUSIONS

The SIP program has had a positive impact on students with learning support status, probation/exclusion status, low transfer GPA, and unsatisfactory progress status. Participation has increased as structures and implementations have become a part of daily practices for these students. The SIP project concept has helped students on probation/exclusion, low transfer GPA, and unsatisfactory academic progress for financial aid which was started on a small scale in the College of Letters and Sciences serving 62 students in Fall 2017. A total of 675 students were served by the SIP grant in FY 1819. The success in the initial effort led CSU to expand the services which have helped these population groups to increase engagement with student resources and improve understanding of course content. The expected financial impact of all the returning students on learning support, probation/exclusion, low transfer GPA and unsatisfactory academic progress for financial aid students for the year is $913,755.

There were students who did not seek the services of the SIP program and there is potential for CSU to scale up the services offered. The program is working on various communication strategies, including sending text messages through the Education Advisory Board (EAB) and making available our advising portal to all eligible students to utilize the available resources. Based on the success of the program, CSU has passed a policy to not exclude students who have been on Probation for two consecutive terms beginning Summer 2020. A new program called University Support Services delivered by SIP team members has been formed to assist and to guide all students on this new University Support Services status to specific resources on campus and to help them to pull up their GPA to over 2.0. CSU is confident that these steps will greatly assist underprepared students succeed at the institution and improve its retention, progression, and graduation rates in the future.

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APPENDIX

TABLE A1
FALL 2018 PROBATION/EXCLUSION STUDENTS WITH 1 TO 1 MATCHING

	Unmatched Samples			Matched Samples		
	Non-SIP	SIP	p	Non-SIP	SIP	p
N	196	100		100	100	
Race (%)			0.836			0.899
American Indian/Alaskan Native	1 (0.5)	1 (1)		0 (0)	1 (1)	
Asian	3 (1.5)	3 (3)		2 (2)	3 (3)	
Black/African American	113 (57.7)	56 (56)		60 (60)	56 (56)	
Hispanic/Latino	11 (5.6)	7 (7)		6 (6)	7 (7)	
Two or More Races	3 (1.5)	3 (3)		2 (2)	3 (3)	
White	65 (33.2)	30 (30)		30 (30)	30 (30)	
Gender = Male (%)	85 (43.4)	35 (35)	0.207	38 (38)	35 (35)	0.769
First Generation = Yes (%)	105 (53.6)	41 (41)	0.054	43 (43)	41 (41)	0.886
Pell Recipient = Yes (%)	76 (38.8)	63 (63)	<0.001	59 (59)	63 (63)	0.664
Pre Fall 2018 SAP (%)			<0.001			0736

Meets SAP	53 (27)	43 (43)		45 (45)	43 (43)	
Not Reviewed , 1st Term	3 (1.5)	2 (2)		2 (2)	2 (2)	
Unsatisfactory	92 (46.9)	12 (12)		12 (12)	12 (12)	
Warning	42 (21.4)	35 (35)		37 (37)	35 (35)	
Pre Fall 2018 Cumulative GPA (mean (SD))	1.65 (0.72)	1.76 (0.64)	0.2	1.77 (0.62)	1.76 (0.64)	0.915
Fall 2018 Attempted Hours (mean (SD))	10.36 (4.46)	12.02 (3.24)	0.001	11.08 (4.03)	12.02 (3.24)	0.071
Fall 2018 Term GPA (mean (SD))	1.57 (1.26)	2.07 (1.13)	0.001	1.61 (1.17)	2.07 (1.13)	0.005

FIGURE A1
DISTRIBUTION OF PROPENSITY SCORES
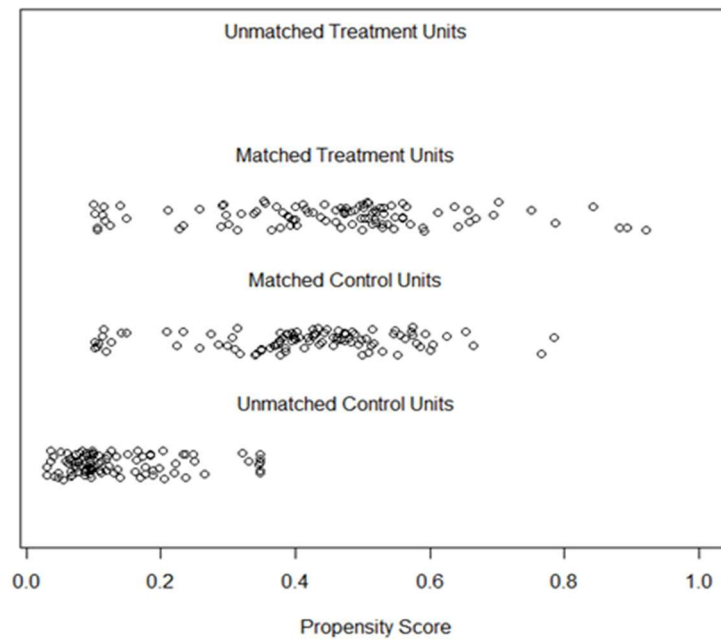
TABLE A2
SENSITIVITY ANALYSIS

Rosenbaum Sensitivity Test for Wilcoxon Signed Rank P-Value
Unconfounded estimate 0.0017

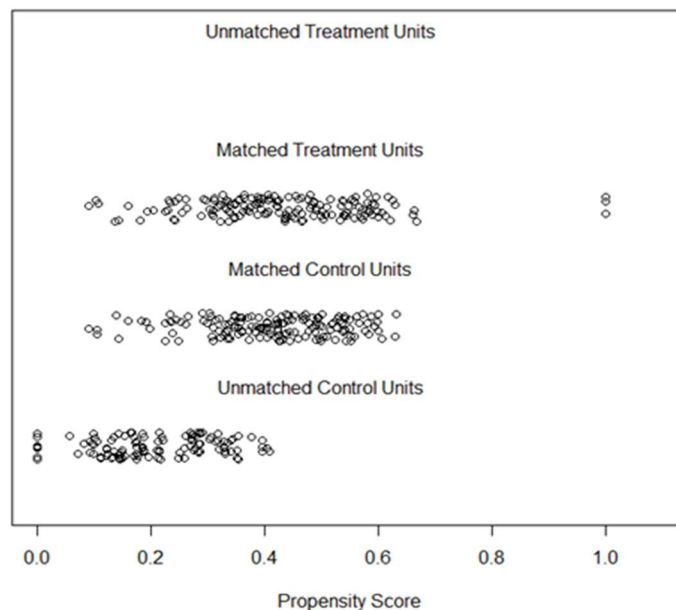| Gamma	Lower bound	Upper bound
1.0	0.0017	0.0017
1.1	0.0004	0.0058
1.2	0.0001	0.0153
1.3	0.0000	0.0332
1.4	0.0000	0.0625
1.5	0.0000	0.1046
1.6	0.0000	0.1594
1.7	0.0000	0.2252
1.8	0.0000	0.2991
1.9	0.0000	0.3775
2.0	0.0000	0.4569

Note: Gamma is Odds of Differential Assignment to Treatment Due to Unobserved Factors

TABLE B1
SPRING 2019 PROBATION/EXCLUSION STUDENTS WITH 1 TO 1 MATCHING

	Unmatched Samples			Matched Samples		
	Non-SIP	SIP	p	Non-SIP	SIP	p
N	272	157		157	157	
Race (%)			0.19			NaN
American Indian/Alaskan Native	0 (0)	3 (1.9)		0 (0)	3 (1.9)	
Asian	5 (1.8)	3 (1.9)		5 (3.2)	3 (1.9)	
Black/African American	157 (57.7)	97 (61.8)		98 (62.4)	97 (61.8)	
Hispanic/Latino	16 (5.9)	11 (7)		12 (7.6)	11 (7)	
Two or More Races	0 (0.7)	2 (1.3)		2 (1.3)	2 (1.3)	
White	90 (33.1)	41 (26.1)		40 (25.5)	41 (26.1)	
Gender = Male (%)	141 (51.8)	61 (38.9)	0.013	67 (42.7)	61 (38.9)	0.566
First Generation = Yes (%)	116 (42.6)	62 (39.5)	0.591	61 (38.9)	62 (39.5)	1.000

Pell Recipient = Yes (%)	138 (50.7)	110 (70.1)	<0.001	102 (65)	110 (70.1)	0.399
Pre Spring 2019 SAP (%)			<0.001			NaN
Meets SAP	58 (21.3)	33 (21)		33 (21)	33 (21)	
Not Reviewed , 1st Term	118 (43.4)	98 (62.4)		95 (60.5)	98 (62.4)	
Unsatisfactory	56 (20.6)	11 (7)		9(5.7)	11 (7)	
Warning	30 (11)	12 (7.6)		15 (9.6)	12 (7.6)	
Pre Spring 2019 Cumulative GPA (mean (SD))	1.57 (0.73)	1.64 (0.72)	0.375	1.61 (0.69)	1.64 (0.72)	0.769
Spring 2019 Attempted Hours (mean (SD))	11.62 (4.00)	12.27 (3.62)	0.095	12.55 (3.61)	12.27 (3.62)	0.493
Spring 2019 Term GPA (mean (SD))	1.55 (1.20)	2.09 (1.10)	<0.001	1.52 (1.11)	2.09 (1.10))	0.002

FIGURE B1
DISTRIBUTION OF PROPENSITY SCORES

TABLE B2
SENSITIVITY ANALYSIS

Rosenbaum Sensitivity Test for Wilcoxon Signed Rank P-Value
Unconfounded estimate 0
Gamma Lower bound Upper bound

Gamma	Lower bound	Upper bound
1.0	0	0.0000
1.1	0	0.0000
1.2	0	0.0001
1.3	0	0.0007
1.4	0	0.0024
1.5	0	0.0067
1.6	0	0.0159
1.7	0	0.0327
1.8	0	0.0596
1.9	0	0.0985
2.0	0	0.1499

Note: Gamma is Odds of Differential Assignment to Treatment Due to Unobserved Factors

TABLE C1
FALL 2018 USAP STUDENTS WITH 2 TO 1 MATCHING

	Unmatched Samples			Matched Samples		
	Non-SIP	SIP	p	Non-SIP	SIP	p
N	275	81		162	81	
Race (%)			0.004			NaN
American Indian/Alaskan Native	1 (0.4)	3 (3.7)		1 (0.6)	3 (3.7)	
Asian	8 (2.9)	0 (0)		0 (0)	0 (0)	
Black/African American	123 (44.7)	44 (54.3)		92 (56.8)	44 (54.3)	
Hispanic/Latino	11 (4.0)	8 (9.9)		11 (6.8)	8 (9.9)	
Two or More Races	5 (1.8)	1 (1.2)		1 (0.6)	1 (1.2)	
White	127 (46.2)	25 (30.9)		57 (35.2)	25 (30.9)	
Gender = Male (%)	122 (44.4)	33 (40.7)	0.652	67 (41.4)	33 (40.7)	1.000
First Generation = Yes (%)	157 (57.1)	51 (63)	0.416	107 (66)	51 (63)	0.739
Pell Recipient = Yes (%)	43 (15.6)	21 (25.9)	0.051	40 (24.7)	21 (25.9)	0.958
Pre Fall 2018 SAP Reason (%)			0.163			0.921

Not Making Quantitative	18 (6.5)	8 (9.9)		10 (6.2)	8 (9.9)	
Not Making Qualitative	62 (22.5)	24 (29.6)		42 (25.9)	24 (29.6)	
Not Making Quant or Qual	59 (21.5)	20 (24.7)		49 (30.2)	20 (24.7)	
Over Max Time Frame	96 (34.9)	24 (29.6)		41 (25.3)	24 (29.6)	
Pre Fall 2018 SAP GPA (mean (SD))	2.07 (0.63)	1.98 (0.56)	0.254	1.93 (0.63)	1.98 (0.56)	0.537
Pre Fall 2018 Cumulative GPA (mean (SD))	2.44 (0.83)	2.16 (0.95)	0.011	2.22 (0.87)	2.16 (0.95)	0.620
Fall 2018 Term GPA (mean (SD))	2.24 (1.32)	2.03 (1.31)	0.214	2.11 (0.37)	2.03 (1.31)	0.654

FIGURE C1
DISTRIBUTION OF PROPENSITY SCORES