



California State University
Louis Stokes Alliance for Minority Participation
Stem Pathways and Research Alliance, Year Two Report

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Table of Contents

Executive Summary.....	5
A. The SPaRA Project.....	5
B. Overall Effectiveness of the CSU-LSAMP Alliance	7
Introduction	9
C. Data Sources and Methodology.....	9
D. Report Structure.....	10
SECTION I: THE STEM Pathways and Research Alliance (SPaRA) PROJECT	11
A. SPaRA CSU-LSAMP Participants.....	11
B. Activity Participation	13
C. Findings Regarding Short-Term Milestones.....	16
Progress toward the goal of engaging at least 3,000 “level-one” students annually	16
Progress toward the goal of supporting 600 students in material support activities annually	16
Progress toward the goal of engaging at least 200 participants in STEM summer bridge programs annually	17
Progress toward the goal of engaging 800 students in supplemental instruction annually.....	17
Progress toward the goal of engaging 250 students in transition programs annually	18
Progress toward engaging 800 students in research activities annually.....	18
Progress toward engaging 40 students in international activities annually	19
Progress toward engaging 600 students annually in professional development activities	19
Progress toward engaging 500 students annually in conferences.....	20
D. Findings Regarding Long-Term Outcomes	21
Progress toward increasing URM-STEM enrollment	21
Progress toward increasing URM-STEM baccalaureate degree production	22
Progress toward increasing the number of CSU-LSAMP students who graduate each year	23
Progress toward increasing the number of participants enrolling in graduate programs.....	25
SECTION II: OVERALL EFFECTIVENESS OF THE CSU-LSAMP ALLIANCE	26
A. Profile of CSU-LSAMP Participants.....	26
B. CSU Enrollment of Students from Underrepresented Minority Groups in STEM Disciplines.....	29
C. STEM Baccalaureate Degrees Awarded by the CSU to Students from Underrepresented Minority Groups	30
D. STEM Discipline Persistence and Graduation Rates for 1996-2017 CSU-LSAMP First Time Freshmen Participant Cohorts.....	31
Data sources and methodology	31
STEM discipline persistence rates for CSU-LSAMP participants	32
STEM discipline graduation rates for CSU-LSAMP participants	35
E. STEM Discipline Persistence and Graduation Rates for 2003-2017 CSU-LSAMP California Community College Transfer Participant Cohorts.....	38
Data sources and methodology	38
STEM discipline persistence rates for CCCT STEM CSU-LSAMP participants	38
STEM discipline graduation rates for CCCT CSU-LSAMP participants	40
F. Baccalaureate Degree Attainment for CSU-LSAMP Participants.....	42
G. Advancement to Graduate Programs for CSU-LSAMP Phase II, Senior Level I, Senior Level II, and SPaRA Participants.....	43
Summary.....	45
Appendix A: Additional Tables.....	46

Table of Tables

Table 1: Annual Totals for SPaRA Short-Term Milestones.....	6
Table 2: CSU-LSAMP Phases 1994-2019.....	9
Table 3: Number of SPaRA CSU-LSAMP Participants through 2018-2019 by URM-STEM Category.....	11
Table 4: CSU System-Wide Undergraduate URM-STEM Enrollment, Fall 2018	21
Table 5: CSU System-Wide URM-STEM Baccalaureate Degrees, 2018-2019	22
Table 6: Estimated Baccalaureate Degree Attainment for Senior Level II and SPaRA CSU-LSAMP Participants.....	24
Table 7: Post-Baccalaureate Enrollment for Senior Level II and SPaRA CSU-LSAMP Participants.....	25
Table 8: Number of New CSU-LSAMP Participants by Phase and URM Category, 1994-2019	26
Table 9: Average STEM Discipline Persistence Rates, 1996-2017 Cohorts.....	35
Table 10: Fourth-through-Seventh-Year Average STEM Discipline Graduation Rates,	37
Table 11: Average CCCT STEM Discipline Persistence Rates, 2003-2017 Cohorts	39
Table 12: Fourth-through-Seventh-Year Average CCCT STEM Discipline Graduation Rates, 2003-2014 Cohorts....	41
Table 13: Post-Baccalaureate Enrollment and Degree Attainment for Phase III, Senior Level I, Senior Level II, and SPaRA Participants	44

Table of Figures

Figure 1: Class Level at Program Entry for New and	12
Figure 2: Number of Level-One Students Participating in Activities Supporting the Three SPaRA CSU-LSAMP Objectives, through 2018-2019.....	13
Figure 3: Number of CSU-LSAMP Participants for Selected Activities by Year, through 2018-2019	15
Figure 4: Number of SPaRA CSU-LSAMP Participants through 2018-2019.....	16
Figure 5: Number of CSU-LSAMP Students in Material Support Activities, SPaRA CSU-LSAMP through 2018-2019	16
Figure 6: Number of Students Participating in STEM Summer Bridge Programs, SPaRA CSU-LSAMP through 2018-2019.....	17
Figure 7: Supplemental Instruction Participants, SPaRA, CSU-LSAMP through 2018-2019.....	17
Figure 8: Transition Program Participants, Senior Level II CSU-LSAMP through 2017-2018.....	18
Figure 9: Research Activity Participants, SPaRA CSU-LSAMP through 2018-2019	18
Figure 10: International Activity Participants, SPaRA CSU-LSAMP through 2018-2019	19
Figure 11: Participants in Professional Development Activities, SPaRA CSU-LSAMP through 2018-2019.....	19
Figure 12: Conference Activity Participants, SPaRA CSU-LSAMP through 2018-2019	20
Figure 13: System-Wide Undergraduate URM-STEM Enrollment	21
Figure 14: CSU System-Wide URM-STEM Baccalaureate Degree Production	22
Figure 15: Estimated Number of CSU-LSAMP Participants who Graduated, SPaRA CSU-LSAMP through 2018-2019	23
Figure 16: Estimated Number STEM and URM STEM Graduates, Senior Level II, and SPaRA CSU-LSAMP Participants through 2018-2019.....	24

Figure 17: Estimated Post-Baccalaureate Enrollment, SPaRA CSU-LSAMP Participants through 2018-2019.....	25
Figure 18: CSU-LSAMP Participant Racial/Ethnic Composition, 1994-2019	26
Figure 19: CSU-LSAMP Participant Gender, Class Level, Discipline and Campus, 1994-2019	27
Figure 20: Annual Number of CSU-LSAMP Participants, 1994-2019.....	28
Figure 21: Annual Undergraduate URM STEM Enrollment for All CSU Campuses, Fall 1994-Fall 2018	29
Figure 22: Annual Number of Baccalaureate STEM Degrees Awarded by All CSU Campuses to URM Students, 1993-1994 through 2018-2019.....	30
Figure 23: Average One-, Two-, and Four-Year STEM Discipline Persistence Rates by Phase for Latino/Latina and African American CSU-LSAMP Participants, 1996-2017 Cohorts.....	33
Figure 24: First-through-Eighth-Year Average STEM Discipline Persistence Rates, 1996-2017 Cohorts	34
Figure 25: Average Six-Year STEM Discipline Graduation Rates by Phase for Latino/Latina and African American CSU-LSAMP Participants.....	35
Figure 26: Fourth-through-Eighth-Year Average STEM Discipline Graduation Rates, 1996-2014 Cohorts	36
Figure 27: First-through-Seventh-Year Average CCCT STEM Discipline Persistence Rates, 2003-2017 Cohorts	39
Figure 28: Fourth-through-seventh-Year Average CCCT STEM Discipline Graduation Rates, 2003-2014 Cohorts ...	40
Figure 29: Results of Tracking Data Retrieval for CSU-LSAMP Participants through 2018-2019	42
Figure 30: Baccalaureate Degree Attainment for CSU-LSAMP Participants through 2018-2019.....	42
Figure 31: Estimated Post-Baccalaureate Enrollment and Degree Attainment for Phase III, Senior Level I, Senior Level II, and SPaRA Participants	43

Table of Appendix Tables

Appendix Table 1: Participant Characteristics, SPaRA CSU-LSAMP through 2018-2019.....	46
Appendix Table 2: Selected Participant Characteristics by First Year of	47
Appendix Table 3: Activity Participation, SPaRA CSU-LSAMP	48
Appendix Table 4: Estimated Baccalaureate Degree Attainment for Senior Level II and SPaRA CSU-LSAMP Participants by Year and URM-STEM Category	49
Appendix Table 5: Participant Characteristics by Entry Phase, 1994-2019.....	51
Appendix Table 6: Annual Number of CSU-LSAMP Participants, 1994-2019.....	53
Appendix Table 7: CSU Undergraduate Enrollment for All CSU Campuses by URM and STEM Categories, Fall 1994-Fall 2018	54
Appendix Table 8: Annual Number of Baccalaureate Degrees Awarded by URM and STEM Categories, All CSU Campuses 1993-1994 through 2018-2019.....	56
Appendix Table 9: STEM Discipline Persistence Rates for CSU-LSAMP Participant Cohorts, Non-LSAMP, and Benchmark Cohorts (1996-2017).....	58
Appendix Table 10: Estimated Percent of Benchmark Cohort Students Participating in CSU-LSAMP Program, (1996-2017).....	64
Appendix Table 11: STEM Discipline Graduation Rates for CSU-LSAMP Participant Cohorts, Non-LSAMP, and Benchmark Cohorts (1996-2014).....	65
Appendix Table 12: STEM Discipline Persistence Rates for CSU-LSAMP CCCT Participant Cohorts, Non-LSAMP, and Benchmark Cohorts (2003-2017).....	68
Appendix Table 13: STEM Discipline Graduation Rates for CSU-LSAMP CCCT Participant Cohorts, Non-LSAMP, and Benchmark Cohorts (2003-2014).....	71
Appendix Table 14: Results of Attempt to Retrieve CSU-ERS and/or NSC Enrollment and Graduation Records for CSU-LSAMP Participants, 1994-2019.....	74
Appendix Table 15: Baccalaureate Degree Attainment, CSU-LSAMP Participants by Entry Phase, 1994-2019	74

EXECUTIVE SUMMARY

This report presents the results of an external evaluation of the California State University Louis Stokes Alliance for Minority Participation (CSU-LSAMP). The Institute for Social Research at California State University, Sacramento conducted the evaluation. The report has two sections. The first section examines the first year of the SPaRA CSU-LSAMP project period (2019-2023). The second section examines the overall effectiveness of the CSU-LSAMP project since its inception in 1994.

A. The SPaRA Project

SPaRA CSU-LSAMP served a total of 2,828 unduplicated level-one participants during the project's first year, including 2,379 students from URM groups. Most of these participants were also pursuing STEM degrees (2,376). The SPaRA project established nine short-term milestones and seven long-term outcomes tied to improved individual student persistence, progression to graduate study and expanding opportunities for student engagement in research and international activities.

The SPaRA project reached six of the nine short-term milestones in the first year; Table 1 displays annual totals for each of these milestones.

Senior-Level II Short-Term Milestones	Year 1
1. Engaging at least 3,000 "level-one" students annually	
2. Supporting 600 students annually in textbook support programs	✓
3. Engaging at least 200 students annually in STEM summer bridge programs	✓
4. Engaging 800 students annually in supplemental instruction	
5. Engaging 250 students annually in transition programs	✓
6. Engaging 800 students annually in research	
7. Engaging 40 students annually in international activities	✓
8. Engaging 600 students annually in professional development activities	✓
9. Engaging 500 students annually in conference activities	✓

Table 1: Annual Totals for SPaRA Short-Term Milestones

	Year 1
1. Engaging at least 3,000 "level-one" students annually	2,828
2. Supporting 600 students annually in textbook support programs	641
3. Engaging at least 200 students annually in STEM summer bridge programs	216
4. Engaging 800 students annually in supplemental instruction	551
5. Engaging 250 students annually in transition programs	456
6. Engaging 800 students annually in research	796
7. Engaging 40 students annually in international activities	59
8. Engaging 600 students annually in professional development activities	946
9. Engaging 500 students annually in conference activities	825

SPaRA Long-Term Outcomes	Year 1	
1. Increasing URM-STEM enrollment by 10%		The SPaRA project met (or partially met six of the seven long-term outcomes. The project fell short of the goal of increasing URM-STEM enrollment to 46,030 in year one, with 44,893 students from URM groups enrolled in STEM disciplines.
2. Increasing URM-STEM baccalaureate degree production by 10%	✓	
3. Increasing the number of FTF CSU-LSAMP students who persist in STEM	✧	The project met the goal of increasing annual URM-STEM baccalaureate degree production to 6,187 degrees in year one, and the number of URM-STEM baccalaureate degrees exceeded the goal by 13 percent with 6,963 degrees.
4. Increasing the number of FTF CSU-LSAMP students who graduate in STEM	✓	
5. Increasing the number of CCCT CSU-LSAMP students who graduate in STEM	✧	
6. Increasing the number of CSU-LSAMP students who graduate each year (500 annually)	✓	
7. Increasing the number of participants enrolling in graduate programs (250 annually)	✓	

The first-year persistence rates for URM-STEM CSU-LSAMP participants were 1.3 times higher than for URM-STEM non-participants, and second-year persistence rates for URM CSU-LSAMP were 1.5 times higher than for URM-STEM non-participants: these rates fall short of the long-term goal of a rate that is two times higher than URM-STEM non-participants. First- and second-year persistence rates for URM CSU-LSAMP participants were 1.2 times higher than for non-URM STEM non-participants, thus meeting the goal of approaching or exceeding the rate for non-URM STEM non-participants for the first year of SPaRA.

In year one, the six-year graduation rate for URM-STEM CSU-LSAMP participants who enter as first-time freshmen was 1.8 times higher than for URM-STEM non-participants, approaching the goal of a rate two times higher than URM-STEM non-participants. The six-year graduation rates for URM-STEM CSU-LSAMP participants who enter as first-time freshmen equals the rates for non-URM STEM non-participants, meeting the goal of a rate that approaches or equals that of non-URM STEM non-participants in the first year.

In the first year of the SPaRA project, the four-year graduation rates for CCCT CSU-LSAMP participants were 1.3 times the rates for CCCT URM non-participants, falling short of the goal of a graduation rate that is twice that of CCCT URM non-participants. However, the project met the goal of a graduation rate that approaches the rate for CCCT non-URM students.

Even using the most conservative estimates of graduation, the project exceeded the goal of 500 CSU-LSAMP graduates for the first year. The project also met the goal of increasing the number of participants enrolling in graduate programs, exceeding the goal of 250 students for the first year.

B. Overall Effectiveness of the CSU-LSAMP Alliance

Established in 1994, the CSU-LSAMP Alliance originally included 18 of the 20 CSU campuses. Since that time, the CSU system has added three new campuses and five new campuses have joined the CSU-LSAMP Alliance. The CSU-LSAMP Alliance currently includes all 23 campuses.

Since its inception, the CSU-LSAMP program has served 27,784 students, and 23,212 of these students were from underrepresented minority (URM) groups (84%). Over the program's 26 years, the annual number of participants has increased more than three-fold, from 641 in 1994 to 2,828 in 2019.

Overall Effectiveness, 1994-2019

- Served 27,784 CSU-LSAMP participants, including 23,212 URM students
- CSU URM-STEM undergraduate enrollment increased 324%
- CSU URM-STEM baccalaureate degree production increased 659%
- Participants were 1.3-1.8 times more likely than non-participants to remain enrolled in STEM disciplines
- Participants were 1.8 times more likely than non-participants to graduate with STEM degrees within six years
- 72% of participants were awarded a bachelor's degree, and 74% of these degrees were in STEM disciplines
- 41% of Phase III, Senior Level I, Senior Level II, and SPaRA graduates persisted at the post-baccalaureate level
- 20% of these participants earned master's degrees, 4% earned doctorates, and 21% remain enrolled

During this same period, the number of URM students enrolled in science, technology, engineering and mathematics (STEM) disciplines at CSU campuses tripled. There was a 324 percent increase in URM-STEM enrollment, from 10,580 in 1994 to 44,893 in fall 2018. STEM enrollment for non-URM students increased by only 29 percent over the same period.

The major outcome objective for Phase I of the CSU-LSAMP project was to increase aggregate URM-STEM baccalaureate degree production. CSU-LSAMP achieved this objective, and the number of STEM baccalaureate degrees awarded to URM students at CSU campuses has increased six-fold. There was a 659 percent increase in CSU URM-STEM baccalaureate degree production—from 917 in 1994 to 6,963 in 2018-2019. Baccalaureate STEM degrees awarded by the CSU to non-URM students increased by 71 percent during the same period.

The major outcome objective for Phase II of the CSU-LSAMP project was to improve individual URM-STEM student success and progression to the baccalaureate degree. Participation in CSU-LSAMP was associated with improved persistence of Latino/Latina and African American students in STEM disciplines. The differences in first-through seventh-year persistence rates for Latino/Latina and African American participants and estimated rates for non-participants were substantial, ranging from 1.3 to 1.8 times higher for participants compared to non-participants.

Participation in CSU-LSAMP was associated with improved graduation rates for Latino/Latina and African American students in STEM disciplines. Six-year graduation rates for Latino/Latina and African American participants were 1.8 times higher than estimated rates for non-participants.

Seventy-two percent of CSU-LSAMP participants earned their baccalaureate degree by the spring 2020 term and 74 percent of these degrees were in STEM disciplines. The STEM degree completion rate for CSU-LSAMP participants was 53 percent. This translates to 12,183 STEM degrees awarded to CSU-LSAMP participants, including 9,756 awarded to URM students.

In Phase III, Senior Level I, and the Senior Level II project, the CSU-LSAMP program began to increase emphasis on serving upper division students in research and other activities designed to motivate them to pursue graduate study and enhance their competitiveness. Of the 64 percent of Phase III, Senior Level I, Senior Level II, and SPaRA participants who graduated with a bachelor's degree (and for whom tracking information was available), 41 percent either earned a post-baccalaureate degree or are currently enrolled as of the spring 2020 term. This translates to an estimated 1,676 Phase III, Senior Level I, Senior Level II, and SPaRA participants who obtained a STEM Master's degree, and 301 participants who obtained a STEM doctoral degree.

INTRODUCTION

This report presents the results of an external evaluation of the California State University Louis Stokes Alliance for Minority Participation (CSU-LSAMP). The Institute for Social Research at California State University, Sacramento conducted the evaluation. The report is divided into two sections. The first section examines the first year of the SPaRA CSU-LSAMP project period. The second section examines the overall effectiveness of the CSU-LSAMP project since its inception in 1994. The CSU-LSAMP Alliance began in 1994, including 18 out of 20 CSU campuses. Since that time, the CSU system added three new campuses and five new campuses have joined the CSU-LSAMP Alliance. The CSU-LSAMP Alliance currently includes all 23 campuses. In Phase IV, the only CSU campus that did not participate in CSU-LSAMP was the California Maritime Academy, which is a specialized campus of the CSU.

The CSU-LSAMP project is now in its sixth five-year phase (26 years total). The program's objectives and emphasis have evolved over time as displayed in Table 2.

Table 2: CSU-LSAMP Phases 1994-2019

Phase	Years	Main Outcome Objective
Phase I	1994-1998	Double the number of STEM baccalaureate degrees awarded by the CSU to URM groups
Phase II	1999-2003	Improve individual URM-STEM student success and progression to the baccalaureate degree
Phase III	2004-2008	Improve individual student progression to STEM graduate programs
Senior Level I	2009-2013	Improve individual persistence and progression to graduate study and engagement in international activities
Senior Level II	2014-2018	Continue to improve individual persistence and progression to graduate study, pursuing this common objective, while allowing the campuses greater flexibility to elect one of three programmatic emphases for the activities that they offer to participants
SPaRA	2019-2023	Continue to improve individual persistence and progression to graduate study, while pursuing a research agenda that will contribute to the knowledge base of broadening participation in STEM

C. Data Sources and Methodology

The analysis presented in this report utilizes three primary data sources. The first data source, called WebAMP, is the online LSAMP data gathering system established by the National Science Foundation (NSF). Each CSU-LSAMP campus program enters student, faculty, and activity data annually into the WebAMP system. Annual extracts from this system, beginning with the first year of Phase I (1993-1994) through the first year of SPaRA (2018-2019) were aggregated on a series of identifiers and characteristics (name, SSN, campus, gender, and discipline) to produce a longitudinal database describing all participants.

The second data source is the CSU Electronic Records System (ERS). ERS is the centralized reporting system for all CSU campuses maintained by the Analytic Studies Division (ASD) of the CSU Chancellor's Office. It includes detailed individual student-level information on matriculation, enrollment, and degrees awarded within the CSU system.

The third data source is the National Student Clearinghouse (NSC). The NSC is an electronic registry of student records. It includes individual student-level information on enrollment and degrees awarded nationally for all campuses who participate in the reporting system.

In addition to providing de-identified annual enrollment and degree files for all CSU students, the ASD performed annual matches to the ERS system using Social Security numbers of CSU-LSAMP participants from 1996-1997 through 2018-2019. ISR obtained ERS data for 83 percent of CSU-LSAMP participants. In

order to obtain enrollment and degree information outside the CSU system, ISR submitted student name and date of birth for participants matched to the ERS system to the NSC using the StudentTracker batch file exchange feature. ISR obtained NSC data for 69 percent of CSU-LSAMP participants.

D. Report Structure

Section I examines measures for the first year of the SPaRA CSU-LSAMP project period. The section describes SPaRA participants in CSU-LSAMP. Next, this section of the report describes participation in activities by objective. Finally, this section evaluates progress toward the nine short-term milestones and four long-term outcomes established for the SPaRA project.

Section II focuses on the overall effectiveness of the CSU-LSAMP alliance, using data from all six CSU-LSAMP project periods. First, the report describes demographic characteristics of the CSU-LSAMP participants. Secondly, the report describes CSU trends in URM-STEM undergraduate enrollment and URM-STEM baccalaureate degree production. Next, is an analysis of STEM discipline persistence and graduation rates for 1996-2017 first-time full-time cohorts (both CSU and CSU-LSAMP participants). Next, is an analysis of persistence and graduation rates for 2003-2017 California Community College Transfer cohorts (both CSU and CSU-LSAMP participants). Finally, there is an analysis of baccalaureate attainment and advancement to graduate programs for CSU-LSAMP participants.

SECTION I: THE STEM PATHWAYS AND RESEARCH ALLIANCE (SPaRA) PROJECT

This section of the report examines measures for the first year of the SPaRA CSU-LSAMP project period. The section describes SPaRA participants and activities and evaluates progress toward the nine short-term milestones and four long-term outcomes established for the SPaRA project.

A. SPaRA CSU-LSAMP Participants

SPaRA CSU-LSAMP has served a total of 2,828 unduplicated level-one participants during the project's first year, including 2,379 students from URM groups (STEM and non-STEM combined). Most of these participants were also pursuing STEM degrees (2,376) as displayed in Table 3.

Table 3: Number of SPaRA CSU-LSAMP Participants through 2018-2019 by URM-STEM Category¹

	URM		Non-URM		Not reported		Total
	STEM	Non-STEM	STEM	Non-STEM	STEM	Non-STEM	
New participants entering during SPaRA	709	1	178	0	0	0	888
Participants continuing from an earlier phase	1,667	2	271	0	0	0	1,940
Unduplicated participants for year 1	2,376	3	449	0	0	0	2,828

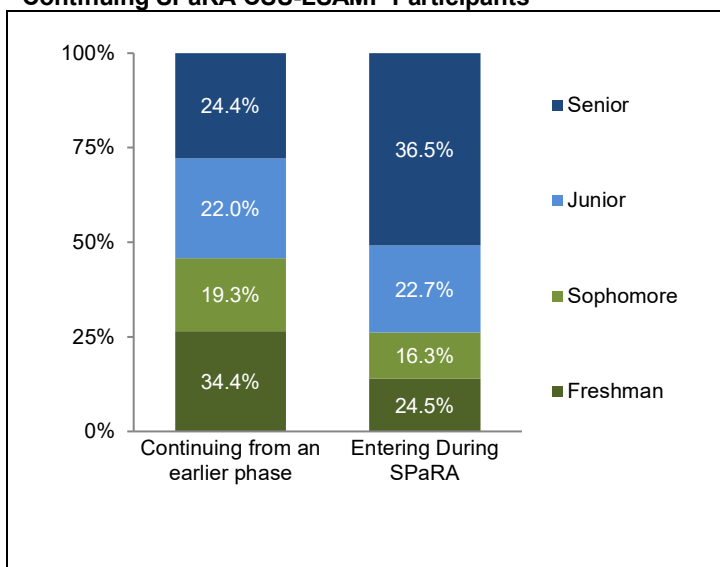
Source: Longitudinal participant database constructed from WebAMP records

Appendix Table 1 provides demographic details on SPaRA CSU-LSAMP participants. The percentage of female participants increased during SPaRA, from 50 percent for continuing participants, to 55 percent for new participants.

Latino/Latina students still comprise the largest racial/ethnic group, with a slight decrease from 75 percent for continuing participants to 71 percent for new participants, while the percentage of participants who are not members of an underrepresented minority group increased from 13 percent for continuing participants to 19 percent for new participants.

¹ It should be noted that since a student may be a STEM major one year and a non-STEM major the next (or vice versa), in order to describe URM-STEM status across years, if a student was a STEM major at some point during their CSU-LSAMP participation, they are counted as a STEM major in Table 3.

Figure 1: Class Level at Program Entry for New and Continuing SPaRA CSU-LSAMP Participants



Source: Longitudinal participant database constructed from WebAMP records.

Figure 1 shows the breakdown of participants by class level. Purposeful changes in the program are evident in the increased proportion of overall students beginning the program as upper classmen compared to those continuing from an earlier phase. Over half (59%) of the SPaRA new participants entered the program as upper division students. In contrast, less than half (46%) of participants continuing from an earlier phase entered as upper division students.

Consistent with continuing students, there were more biological sciences and engineering majors than any other discipline category among new entries, followed by physical sciences, mathematics, and computer science.

Participants majoring in engineering decreased from 34 percent of continuing students to 25 percent of new students entering in the first year of SPaRA CSU-LSAMP. In contrast, students majoring in biological sciences increased from 31 to 36 percent and students majoring in physical sciences increased from 16 to 19 percent.

Next, the report focuses on activity participation by objective.

B. Activity Participation

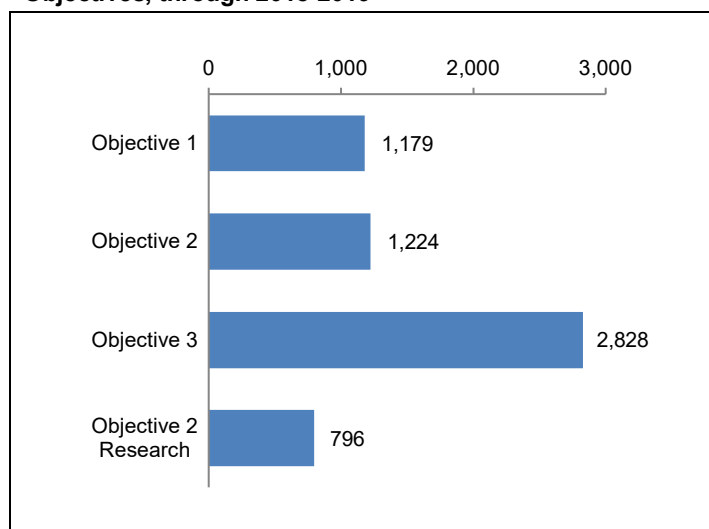
The Senior Level II project includes 18 different activities, with each activity supporting one of the three project objectives:

Objective 1 Academic Integration: Support students at critical transition points in their STEM careers (e.g. entering as freshmen, transferring from community college, declaring a major in a STEM discipline) and in “gatekeeper” courses in STEM with the goal of improving student performance and persistence in STEM.

Objective 2 Professionalization: Provide opportunities for students to engage in research projects, internships, international activities, conferences, and graduate school preparation activities with the goal of increasing the number of students entering graduate programs and professional careers in STEM.

Objective 3 Social Integration: On-going exposure to experiences and opportunities that are important for socialization into science and activities that build a sense of community within STEM disciplines.

Figure 2: Number of Level-One Students Participating in Activities Supporting the Three SPaRA CSU-LSAMP Objectives, through 2018-2019



Source: Longitudinal participant database constructed from WebAMP records. See Appendix Table 18 for more detail.

Figures 2 and 3 display activity participation by objective. Appendix Table 3 provides detailed information for annual and cumulative SPaRA activity participation.

Campuses offered five activities supporting Objective 1, including: material support, other academic support activities, summer bridge program (STEM), supplemental instruction, and transition support activities:

In the first year of SPaRA, 1,179 students (42%) participated in Objective 1 activities. The top five activities for Objective 1 were: material support (641 participants); supplemental instruction (551 participants); transition support activities (456 participants); summer bridge program (STEM) (216 participants); and other academic support activities (175 participants).

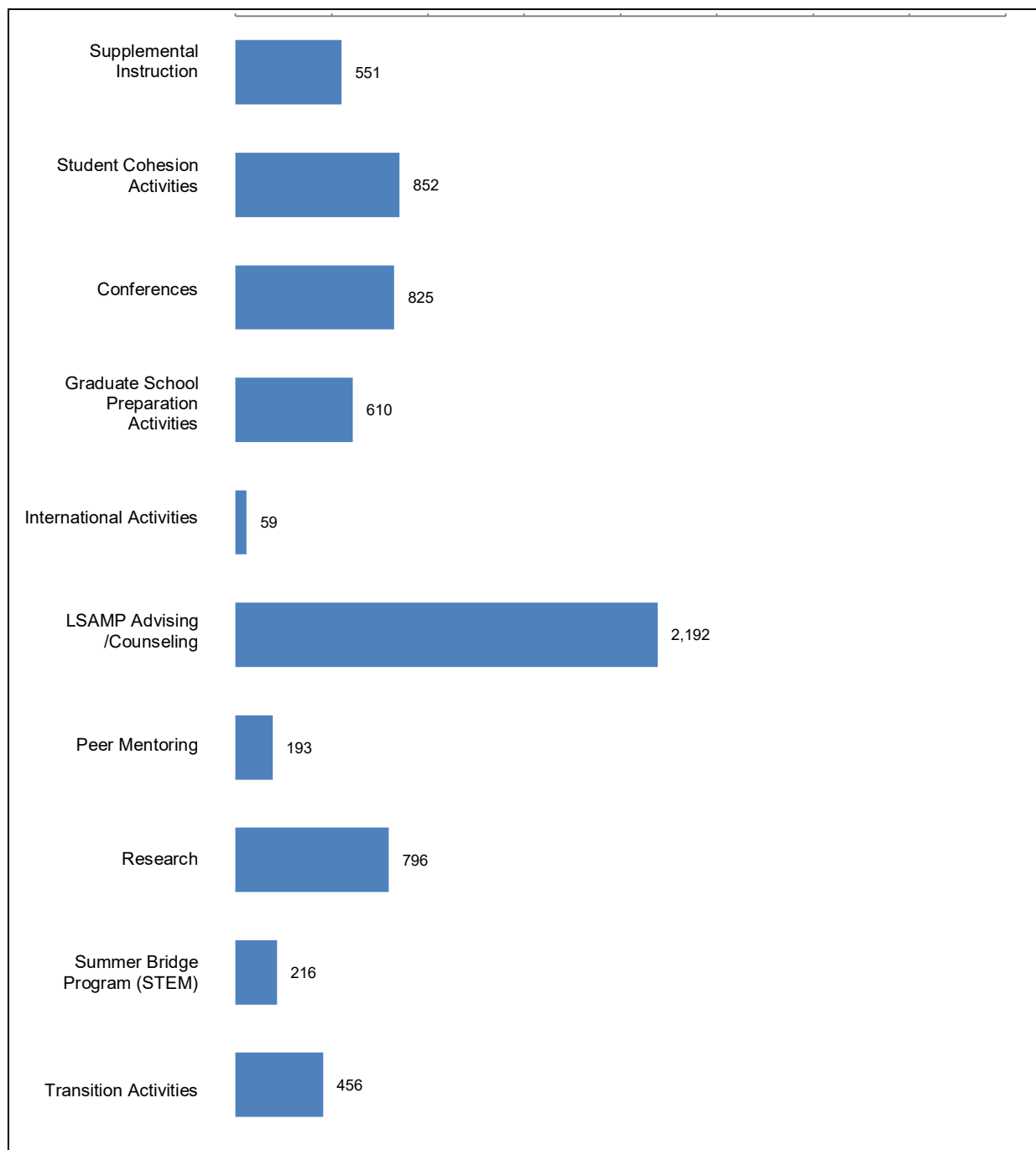
Campuses offered eight activities supporting Objective 2, including: facilitators, mentors, & trainers; graduate school preparation activities, internships, international activities, LSAMP funded research, other funded research, other professionalization activities, and presentation or publication of research:

In the first year of SPaRA, 1,224 students (43%) participated in one or more Objective 2 activities. There were 610 LSAMP students who participated in graduate school preparation activities, 554 who presented or published their research, 552 who participated in other funded research, and 411 who participated in LSAMP funded research.

Campuses offered five activities supporting Objective 3, including: communications, conferences (attending only), LSAMP advising/counseling, peer mentoring, and student cohesion activities.

In the first year of SPaRA, 2,828 students (100%) participated in Objective 3 activities, with 2,828 participants in communications, and 2,192 participants in LSAMP advising/counseling, 852 participants in student cohesion activities, 456 in conferences (attending only), and 193 participants in peer mentoring.

Figure 3: Number of CSU-LSAMP Participants for Selected Activities by Year, through 2018-2019

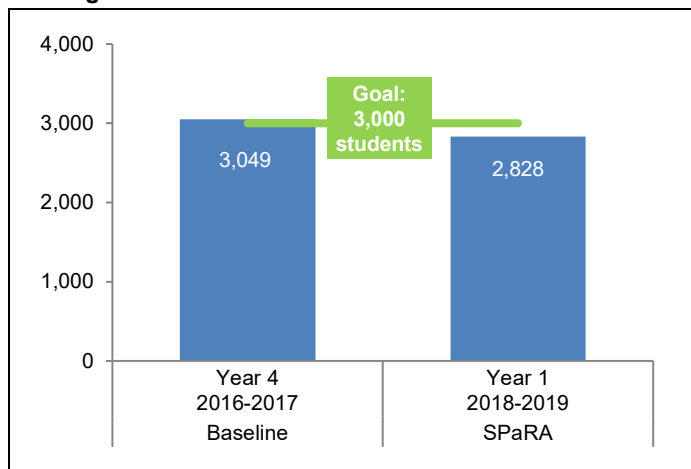


The next section focuses on progress toward short-term milestones.

C. Findings Regarding Short-Term Milestones

Progress toward the goal of engaging at least 3,000 “level-one” students annually

Figure 4: Number of SPaRA CSU-LSAMP Participants through 2018-2019

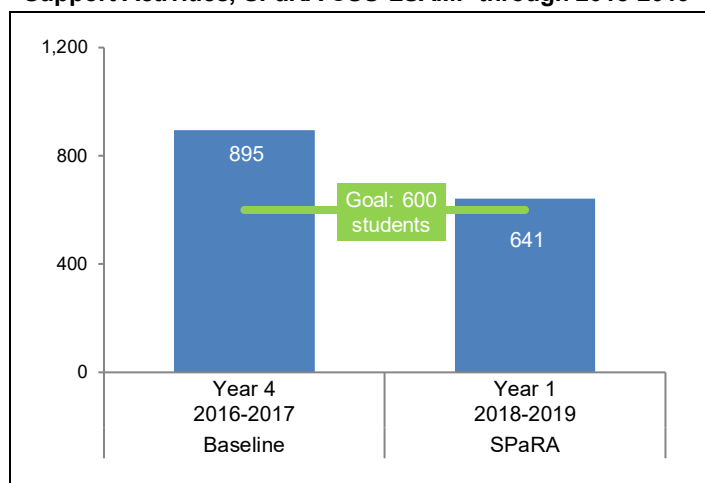


Source: WebAMP

Figure 4 displays the number of unduplicated level-one participants. In year one of SPaRA CSU-LSAMP was 172 students below the goal of 3,000 students, serving 2,828 unduplicated level-one participants.

Progress toward the goal of supporting 600 students in material support activities annually

Figure 5: Number of CSU-LSAMP Students in Material Support Activities, SPaRA CSU-LSAMP through 2018-2019

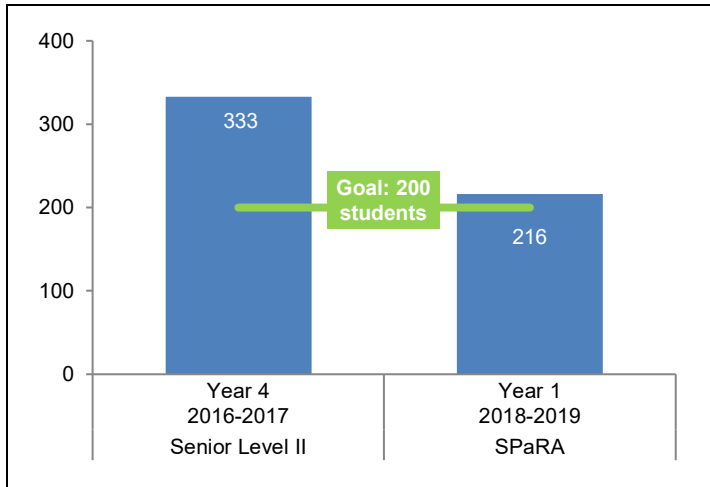


Source: WebAMP

Figure 5 shows the number of participants provided with material support. CSU-LSAMP surpassed this goal in year one of SPaRA. During year one of SPaRA, campuses reported they provided material support to 641 unduplicated level-one students, seven percent over the goal.

Progress toward the goal of engaging at least 200 participants in STEM summer bridge programs annually

Figure 6: Number of Students Participating in STEM Summer Bridge Programs, SPaRA CSU-LSAMP through 2018-2019

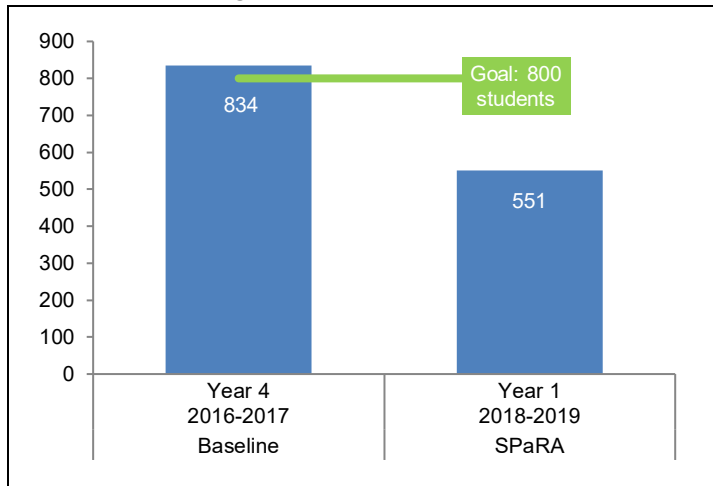


Source: WebAMP.

Figure 6 shows the number of students participating in STEM summer bridge programs. CSU-LSAMP surpassed this goal in year one of SPaRA. During year one of SPaRA, campuses reported that there were 217 unduplicated level-one students participating in STEM summer bridge programs, which was eight percent over the goal.

Progress toward the goal of engaging 800 students in supplemental instruction annually

Figure 7: Supplemental Instruction Participants, SPaRA, CSU-LSAMP through 2018-2019

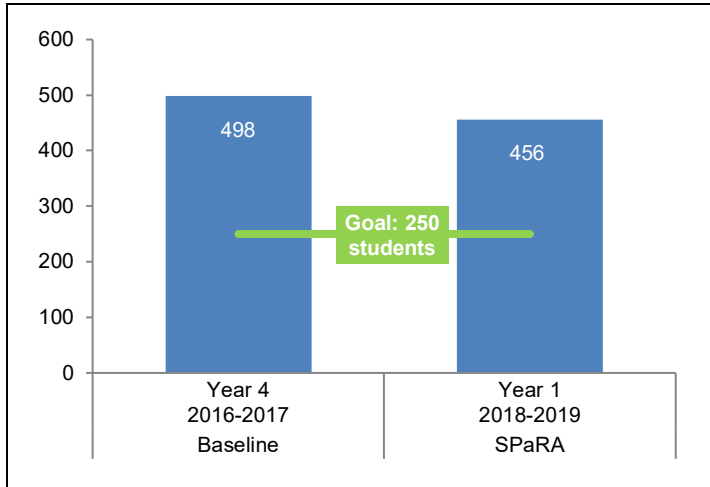


Source: WebAMP

Figure 7 displays the number of supplemental instruction participants. CSU-LSAMP was below this goal in year one of SPaRA. During year one of SPaRA, campuses reported that there were 551 unduplicated level-one students participating in supplemental instruction.

Progress toward the goal of engaging 250 students in transition programs annually

Figure 8: Transition Program Participants, Senior Level II CSU-LSAMP through 2017-2018

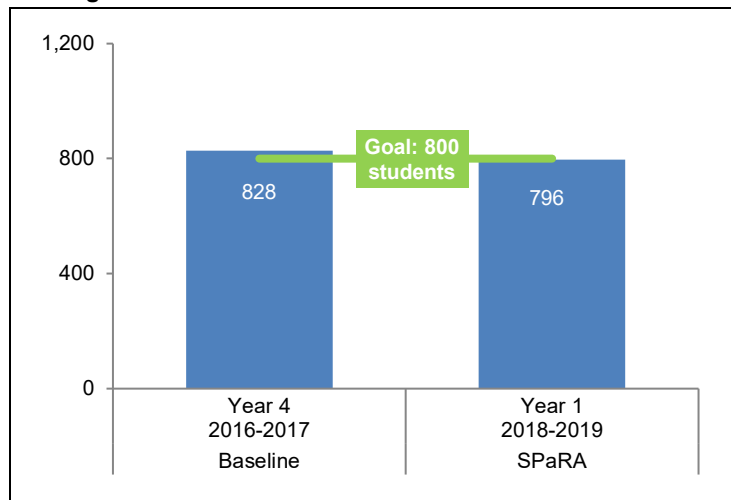


Source: WebAMP

Figure 8 shows the number of transition program participants. CSU-LSAMP surpassed this goal in year one of SPaRA. In year one of SPaRA, campuses reported that there were 456 unduplicated level-one students participating in transition programs, 82 percent over the goal.

Progress toward engaging 800 students in research activities annually

Figure 9: Research Activity Participants, SPaRA CSU-LSAMP through 2018-2019

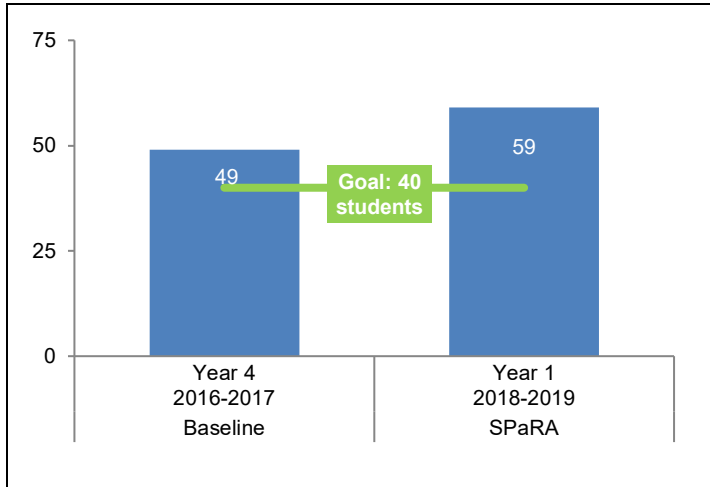


Source: WebAMP

Figure 9 displays the number of research activity participants. CSU-LSAMP nearly met this goal in year one of SPaRA. During year one of SPaRA, campuses reported that there were 796 unduplicated level-one students participating in research activities, just one percent below the goal.

Progress toward engaging 40 students in international activities annually

Figure 10: International Activity Participants, SPaRA CSU-LSAMP through 2018-2019

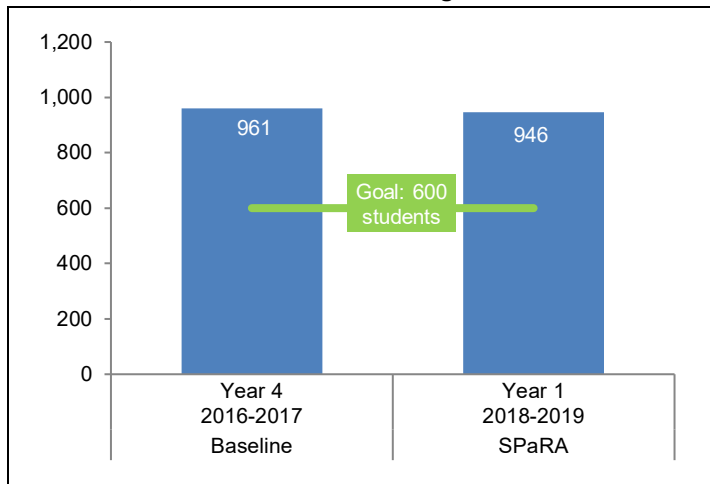


Source: WebAMP

Figure 10 displays the number of international activities participants. CSU-LSAMP surpassed this goal in year one of SPaRA. During year one of SPaRA, campuses reported that there were 59 unduplicated level-one students participating in international activities, 48 percent above the goal.

Progress toward engaging 600 students annually in professional development activities

Figure 11: Participants in Professional Development Activities, SPaRA CSU-LSAMP through 2018-2019

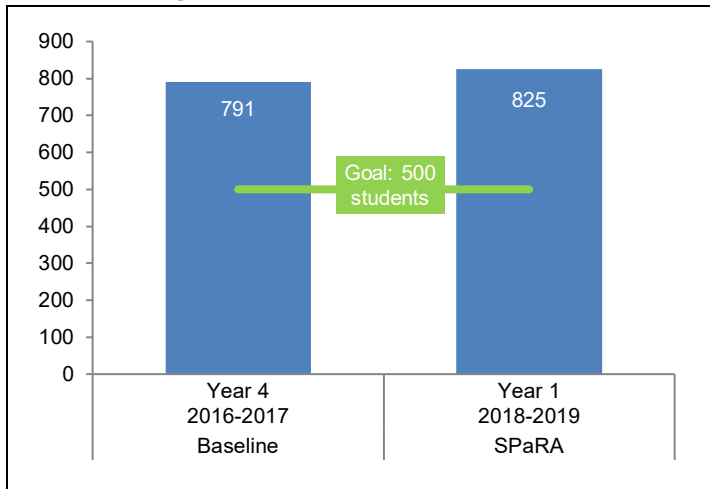


Source: WebAMP

Figure 11 shows the number of participants in professional development activities. CSU-LSAMP surpassed this goal in the first year of SPaRA. During year one of SPaRA, campuses reported that there were 946 unduplicated level-one students participating in professional development activities, 58 percent over the goal.

Progress toward engaging 500 students annually in conferences

Figure 12: Conference Activity Participants, SPaRA CSU-LSAMP through 2018-2019



Source: WebAMP

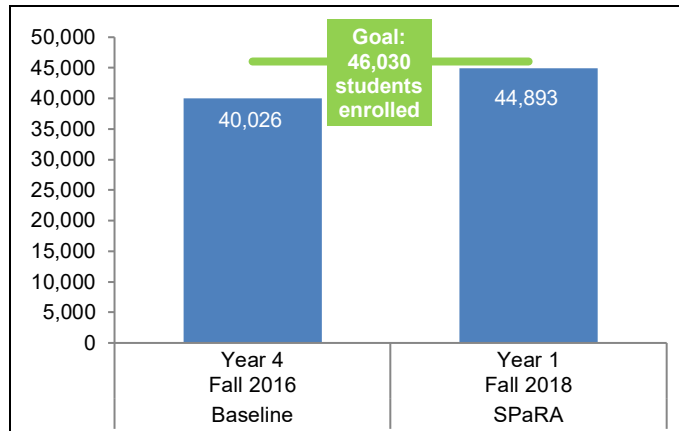
Figure 12 displays the number of conference activity participants. CSU-LSAMP surpassed this goal in year one of SPaRA. During year one of SPaRA, campuses reported that there were 825 unduplicated level-one students participating in conference activities, 65 percent above the goal.

The next section focuses on progress toward long-term outcomes.

D. Findings Regarding Long-Term Outcomes

Progress toward increasing URM-STEM enrollment

Figure 13: System-Wide Undergraduate URM-STEM Enrollment



Source: CSU ERS records

Figure 13 and Table 4 display CSU system-wide undergraduate URM-STEM enrollment. CSU-LSAMP proposed that system-wide URM-STEM enrollment would increase from a fall 2016 baseline of 40,026, to 46,030, in SPaRA CSU-LSAMP. The project approached this goal in year one of SPaRA.

During year one of SPaRA CSU-LSAMP, undergraduate URM-STEM enrollment for all campuses increased from 40,026 in fall 2016 to 44,893 in fall 2018 (a 12.2% increase).

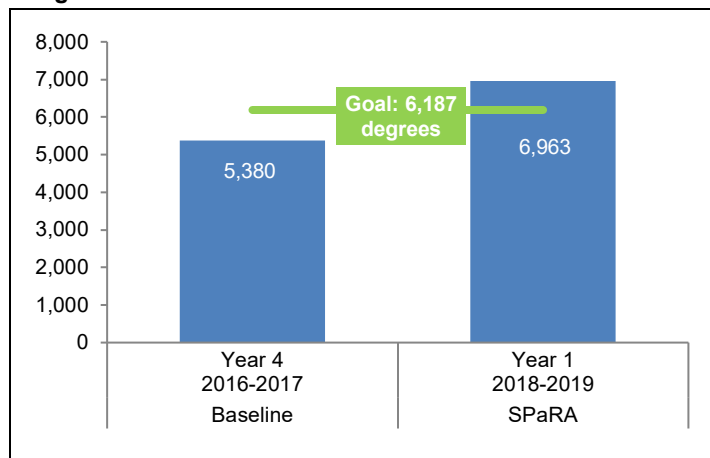
Table 4: CSU System-Wide Undergraduate URM-STEM Enrollment, Fall 2018

	Senior Level II	SPaRA
	Baseline (Fall 2016)	Year 1 (Fall 2018)
URM-STEM enrollment	40,026	44,893
Percent increase from baseline	n/a	12.2%

Source: CSU ERS records.

Progress toward increasing URM-STEM baccalaureate degree production

Figure 14: CSU System-Wide URM-STEM Baccalaureate Degree Production



Source: CSU ERS records

Figure 14 and Table 5 show CSU system-wide URM-STEM baccalaureate degree production. CSU-LSAMP proposed that URM-STEM baccalaureate degree production (for the 23 campuses in the CSU) would increase from the baseline of 5,380 per year in 2016-2017 to 6,187 per year. CSU-LSAMP surpassed this goal in year one of SPaRA. During year one of SPaRA CSU-LSAMP, URM-STEM baccalaureate degree production increased from 5,380 in 2016-2017 to 6,963 in 2018-2019 (a 29.4% increase).

Table 5: CSU System-Wide URM-STEM Baccalaureate Degrees, 2018-2019

	Senior Level II	SPaRA
	Baseline (2016-2017)	Year 1 (2018-2019)
URM-STEM degrees	1,998	3,455
Percent increase from baseline	n/a	72.9%

Source: CSU ERS records

Progress toward increasing the number of CSU-LSAMP students who graduate each year

Figure 15: Estimated Number of CSU-LSAMP Participants who Graduated, SPaRA CSU-LSAMP through 2018-2019

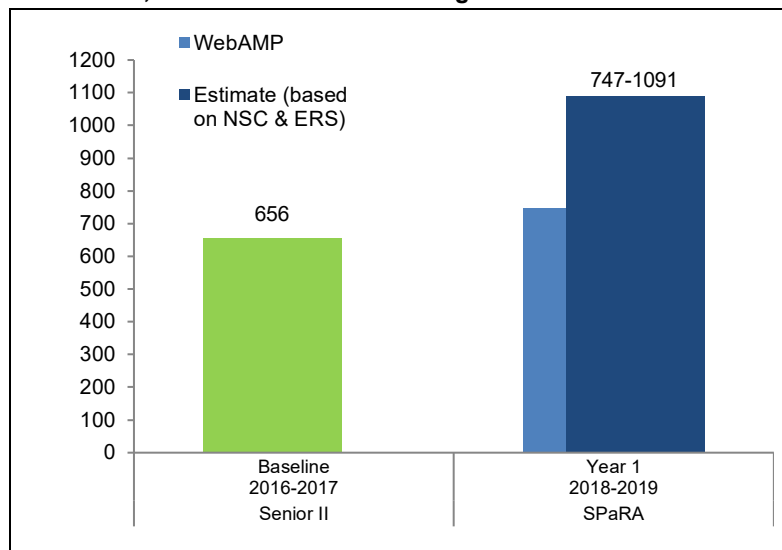


Table 6 shows the computation of the estimates.

Figure 15 and Table 6 show the estimated number of CSU-LSAMP participants who graduated. CSU-LSAMP proposed to increase the number of participants who graduate each year to 500. Even using the most conservative measure of the number of graduates—the number reported by campuses through WebAMP—the project achieved this goal in the first year of SPaRA CSU-LSAMP. During the first year campuses reported through WebAMP that 747 CSU-LSAMP participants graduated, which is 247 over the goal of 500 students.

One of the reasons the number of graduates reported in WebAMP each year provides a conservative measure of progress toward this goal is that it may undercount the actual number of participants graduating. The availability of graduation data in time for WebAMP reporting deadlines varies by campus, and it is cumbersome and time consuming for campus program coordinators to verify and enter each student's graduation status, particularly for programs with large numbers of students.

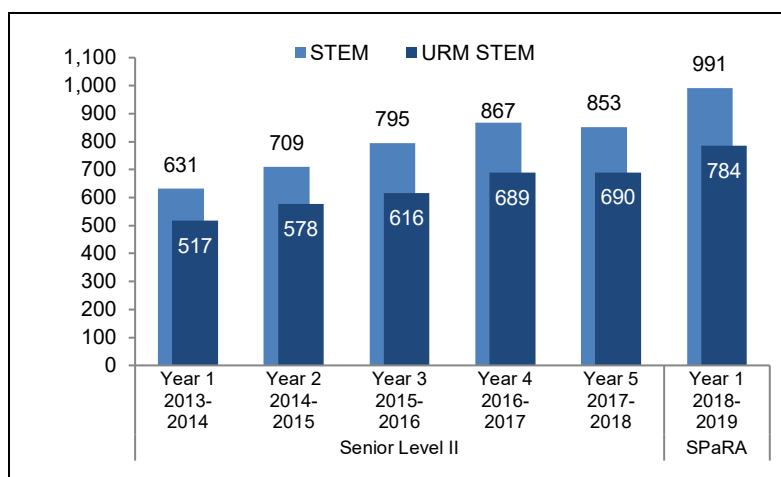
In addition, the graduates reported in WebAMP only reflect the number of *current* participants graduating. For example, a student who participated only during year one and who graduated during year three would not be recorded as a graduate in WebAMP. In order to supplement the graduation data entered into WebAMP, we made an attempt to retrieve NSC and ERS records for the 8,111 students who participated in Senior Level II and SPaRA CSU-LSAMP. Data was found in one or both systems for 7,440 (92%) of these students, and their records showed that 13.5 percent graduated during year one of SPaRA. Based on these results, we estimate that 1,091 CSU-SPaRA participants graduated during year one.²

² NSC records also include degrees obtained outside the CSU system, which is another factor contributing to the difference between these estimates of the number of graduates and those reported in WebAMP.

Table 6: Estimated Baccalaureate Degree Attainment for Senior Level II and SPaRA CSU-LSAMP Participants

			Senior Level II and SPaRA CSU-LSAMP participants for whom tracking information was available:		Estimated number of Senior Level II and SPaRA CSU-SAMP participants ³
			Number	Percent	
Graduates ⁴	Senior II	Yr 1 2013-2014	606	8.1%	661
		Yr 2 2014-2015	693	9.3%	756
		Yr 3 2015-2016	778	10.5%	848
		Yr 4 2016-2017	865	11.6%	943
		Yr 5 2017-2018	864	11.6%	942
	SPaRA	Yr 1 2018-2019	1,001	13.5%	1,091
		Yr 2 2019-2020	272	3.7%	297
Currently enrolled			2,095	28.2%	2,284
No degree, not enrolled			43	0.6%	47
Total			7,440	100.0%	8,111

Source: WebAMP participant data matched to CSU ERS and NSC records.

Figure 16: Estimated Number STEM and URM STEM Graduates, Senior Level II, and SPaRA CSU-LSAMP Participants through 2018-2019

Source: WebAMP participant data matched to CSU ERS and NSC records.

Appendix Table 4 shows the computation of these estimates, as well as estimates for other subgroups.

Since these estimates include *all* Senior Level II and SPaRA participants, not just those participating during a specific year, they are notably higher than the number of graduates reported in WebAMP for all years. Some students who “drop out” of the CSU-LSAMP program move into non-STEM disciplines.

Figure 16 shows the estimated number of STEM degrees earned by Senior Level II and SPaRA participants. Appendix Table 4 shows the computation of the estimates.

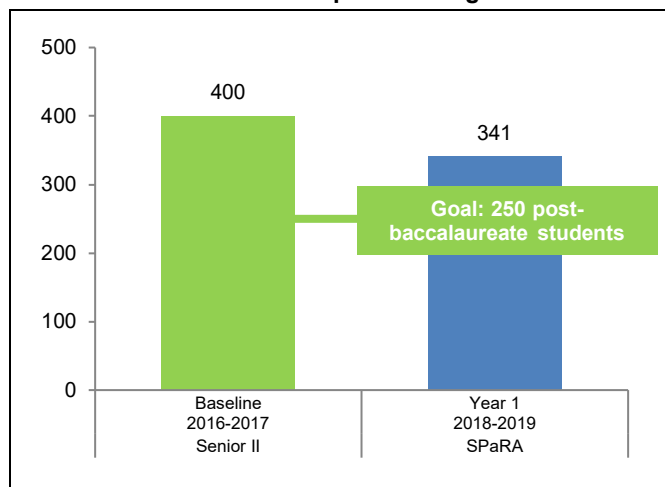
³ The estimated number of participants in each category was obtained by applying the percentages for participants for whom follow-up tracking information is available (e.g., those whose CSU-ERS and/or NSC records were successfully retrieved) to the total number of participants. Totals for these estimates may not sum due to rounding.

⁴ We collapsed tracking information to describe the number of degrees awarded annually. The CSU ERS system records the award year and term for degrees and the NSC system records the date. The categories shown here reflect the number of degrees awarded between the summer and spring terms (CSU-ERS data) or the number of degrees awarded between July 1 and June 30 (NSC data). The currently available CSU ERS data and the NSC system data includes degrees earned through spring 2020.

Progress toward increasing the number of participants enrolling in graduate programs

CSU-LSAMP proposed to increase the number of graduates progressing to graduate school to 250 per year. Figure 17 and Table 7 show the estimated post-baccalaureate enrollment for CSU-LSAMP participants.

Figure 17: Estimated Post-Baccalaureate Enrollment, SPaRA CSU-LSAMP Participants through 2018-2019



Source: WebAMP participant data matched to CSU ERS and NSC records. See Table 7 for computation details.

Based on analysis of NSC and ERS records for SPaRA CSU-LSAMP participants who graduated we estimated that 341 of the graduates enrolled in graduate programs following receipt of their degree in year one.

Unfortunately, we cannot be certain that all these students enrolled in graduate programs. NSC enrollment data—the source of information regarding enrollment outside the CSU system—does not indicate a student's level of enrollment or discipline (that information is only reflected in NSC records when a degree is awarded).

We derived the estimated number of participants continuing in higher education from NSC and ERS records for the 5,079 Senior Level II and SPaRA participants who graduated

during the program. These records show that 1,862 of these Senior Level II and SPaRA participants (37%) enrolled subsequent to the receipt of their bachelor's degree.

Table 7: Post-Baccalaureate Enrollment for Senior Level II and SPaRA CSU-LSAMP Participants

Year bachelor's degree was awarded		Senior Level II and SPaRA CSU-LSAMP participants for whom tracking information is available			Estimated number of Senior Level II and SPaRA CSU-LSAMP participants	
		Number graduating	Number enrolled after graduating	Percent enrolled after graduating	Graduating	Enrolled after graduating*
Senior II	Year 1 2013-2014	606	248	40.9%	661	270
	Year 2 2014-2015	693	288	41.6%	756	314
	Year 3 2015-2016	778	325	41.8%	848	354
	Year 4 2016-2017	865	348	40.2%	943	379
	Year 5 2017-2018	864	319	36.9%	942	348
SPaRA	Year 1 2018-2019	1,001	313	31.3%	1,091	341
	Year 2 2019-2020	272	21	7.7%	297	23
Total		5,079	1,862	36.7%	5,241	1,921

Source: WebAMP participant data matched to CSU ERS and NSC records.

* Obtained by applying the percentages for participants for whom follow-up tracking information is available to the estimated number of graduates from Table 6.

SECTION II: OVERALL EFFECTIVENESS OF THE CSU-LSAMP ALLIANCE

This section examines measures of program effectiveness, looking back to 1994 when the CSU-LSAMP program was established and continuing on through the first year of the SPaRA project period. The section begins with a profile of CSU-LSAMP participants, moves on to examine the extent to which CSU-LSAMP contributed to increasing URM-STEM enrollment and degrees within the CSU system, and closes with an evaluation of individual participant performance, including graduation rates, progression to STEM graduate programs and completion of STEM graduate degrees.

A. Profile of CSU-LSAMP Participants

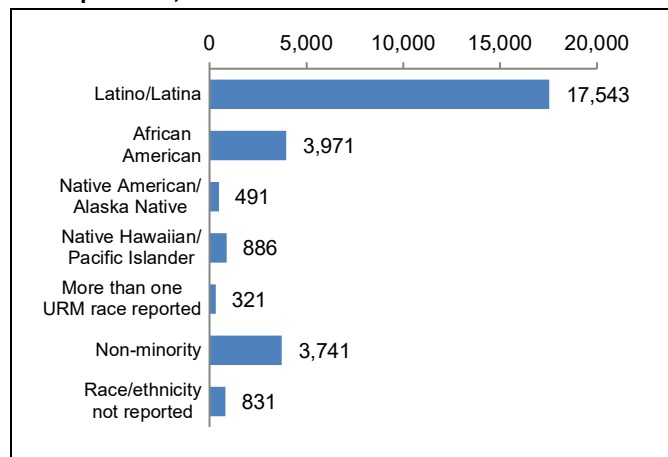
Since its inception in 1994, the CSU-LSAMP program has served 27,784 students, 23,212 of who were URM students. Table 8 shows the number of new students entering the program during each phase.

Table 8: Number of New CSU-LSAMP Participants by Phase and URM Category, 1994-2019

	Phase I 1994-1998	Phase II 1999-2003	Phase III 2004-2008	Senior Level I 2009-2013	Senior Level II 2014-2018	SPaRA 2019	Total
URM	4,290	5,328	5,566	3,474	3,844	710	23,212
Non-URM	285	1,620	207	638	827	164	3,741
Not reported	58	479	13	191	76	14	831
Total	4,633	7,427	5,786	4,303	4,747	888	27,784

Source: Longitudinal CSU-LSAMP participant database constructed from WebAMP records. Because we update the longitudinal database annually, the number of participants entering the program during each phase varies slightly from previous reports.

Figure 18: CSU-LSAMP Participant Racial/Ethnic Composition, 1994-2019



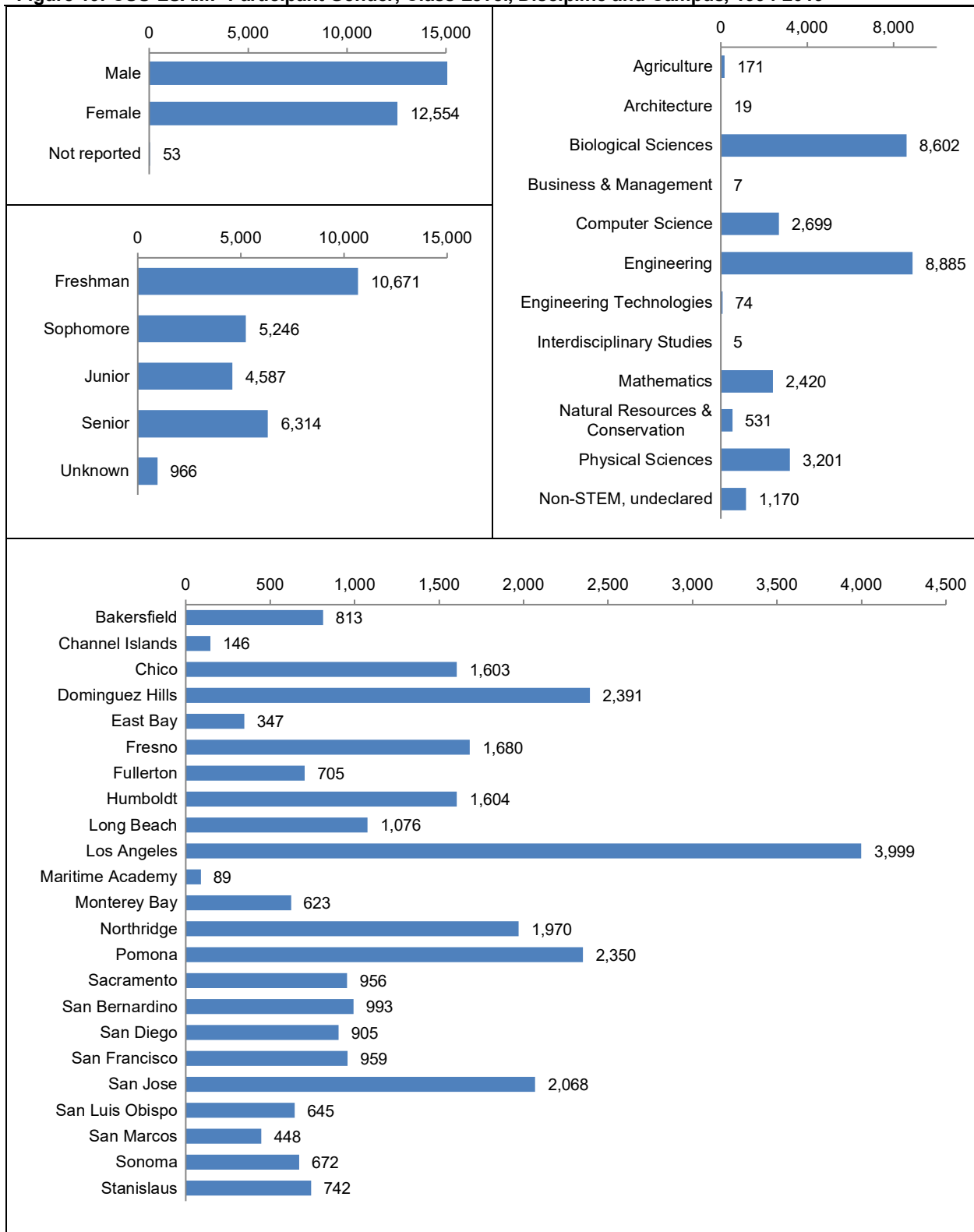
Source: Longitudinal CSU-LSAMP participant database constructed from WebAMP records.

Figure 18 describes the racial and ethnic composition of participants. Latino/Latina students were the largest group (63%), followed by African American students, (14%) and students who are not members of underrepresented minority groups (13%).⁵ There were slightly more male (55%) than female participants, and more students entered the program as lower division students (57%) (Figure 2). Participants were most likely to be majoring in engineering or biological sciences (32% and 31%, respectively). The number of participants from each campus varied widely, from a high of 3,999 for CSU Los Angeles (14%), to a low of 89 for the newest alliance campus, California Maritime Academy (0.3%).

Appendix Table 5 provides additional detail and shows participant characteristics broken down by entry phase.

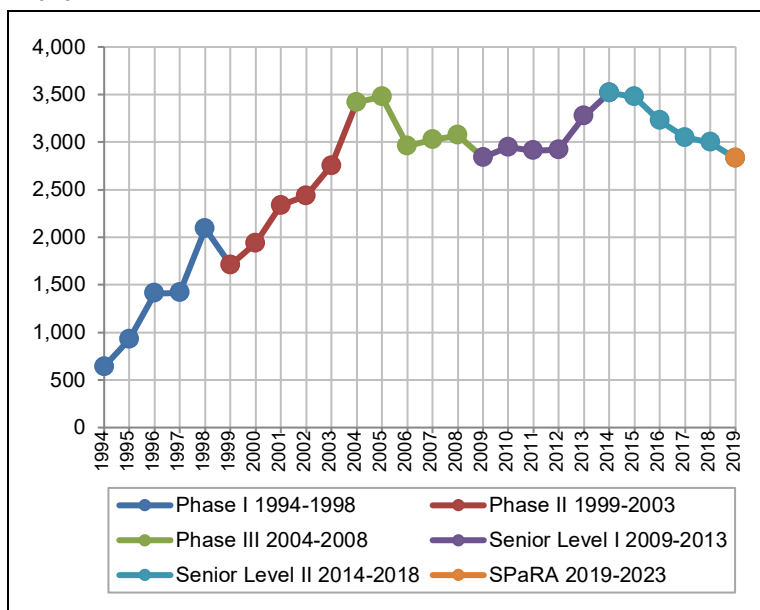
⁵ CSU-LSAMP does not limit participation to URM students or provide URM students preference in admission. Students who face social, educational or economic barriers to careers in STEM are eligible for the program. To be eligible to participate in CSU-LSAMP, students must also be U.S. Citizens or Permanent Residents enrolled at a participating campus, in an undergraduate major in a STEM discipline (or who have expressed an interest in pursuing a STEM baccalaureate degree). Campuses may also specify additional academic qualifications, activity requirements, or entry-level points for acceptance into the program.

Figure 19: CSU-LSAMP Participant Gender, Class Level, Discipline and Campus, 1994-2019



Source: Longitudinal CSU-LSAMP participant database constructed from WebAMP records.

Figure 20: Annual Number of CSU-LSAMP Participants, 1994-2019



Source: Longitudinal CSU-LSAMP participant database constructed from WebAMP records.

participants, per year, to approximately 2,499. During the most recent year, there were 2,828 participants.

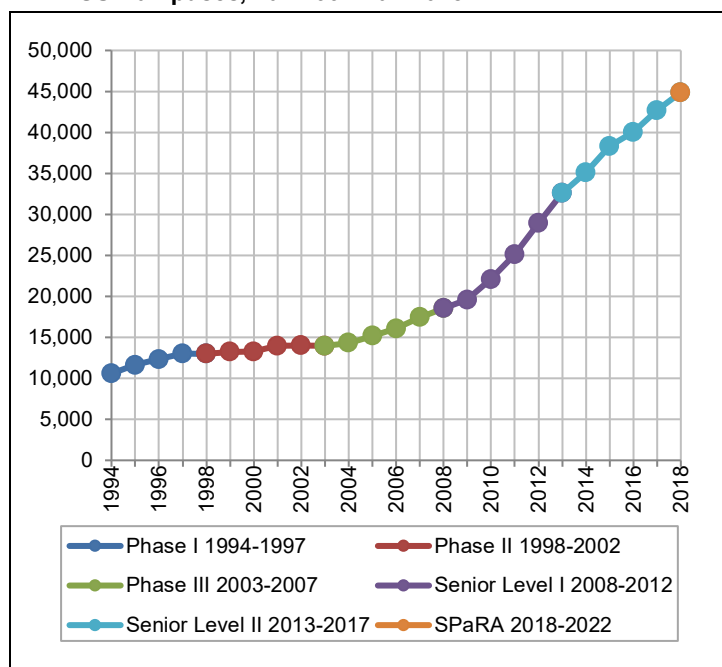
The next section looks at CSU undergraduate enrollment of students from underrepresented minority groups in STEM disciplines.

Figure 20 and Appendix Table 6 show the annual number of CSU-LSAMP participants. Over the CSU-LSAMP program's 26 years, the annual number of participants has more than tripled. In the first year of CSU-LSAMP, there were 641 participants and the number of participants peaked at 3,520 in the first year of Senior Level II. The largest increases occurred during the first 11 years.

During the Phases I and II, the program included mostly group activities for lower division students. Beginning in Phase III, the program added an emphasis on engaging upper division students in mentored research and preparation for graduate study. This shift in emphasis brought the average number of

B. CSU Enrollment of Students from Underrepresented Minority Groups in STEM Disciplines

Figure 21: Annual Undergraduate URM STEM Enrollment for All CSU Campuses, Fall 1994-Fall 2018



Sources: CSU Analytic Studies Division ERS enrollment files, WebAMP Reverse Site Reports, and WebAMP ExACT Reports. Enrollment data for fall 1993 (the first year of the Alliance) is not currently available. Excludes International Program and non-resident alien enrollment.

Figure 21 displays the annual undergraduate URM-STEM enrollment for all CSU campuses. Appendix Table 7 provides additional detail. From the second year of Phase I, to the first year of the SPaRA project, URM-STEM undergraduate enrollment increased by 324 percent, from 10,580 in 1994 to 44,893 in fall 2018.

During the same period, overall STEM enrollment increased by 88 percent. For students reporting non-URM race and ethnicity, STEM enrollment increased by 29 percent.

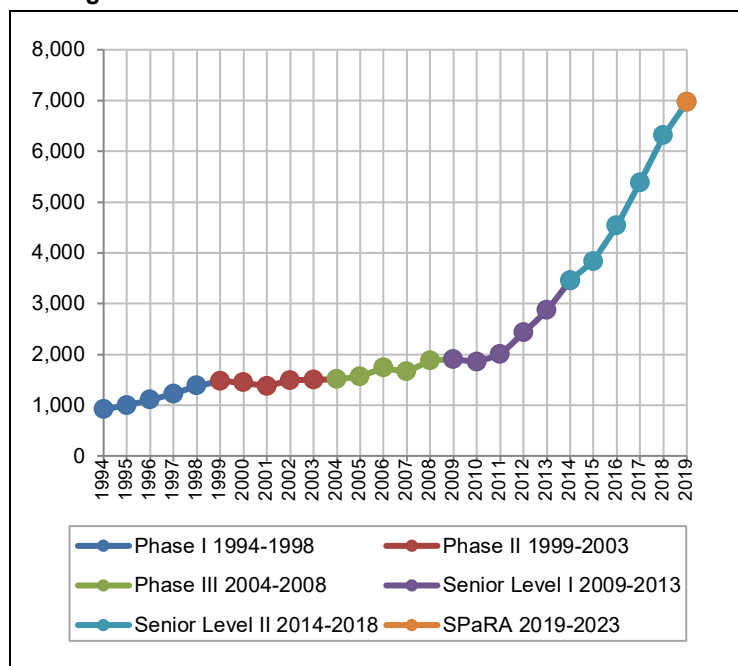
Some of the increase in URM-STEM enrollment may be due to an overall increase in URM enrollment. In the same period, URM non-STEM enrollment increased by 209 percent.⁶

The next section looks at STEM baccalaureate degrees awarded by the CSU to students from underrepresented minority groups.

⁶ Some of the increase in URM-STEM enrollment for fall 2018 may be attributable to improvements in the accuracy with which the CSU Chancellor's Office describes student race and ethnicity. Beginning in fall 2010, the CSU Chancellor's Office measured race and ethnicity separately and students were not restricted to selecting one racial category. Conceivably, in the past, some students may have left this information blank rather than choosing just one category to describe their race and ethnicity.

C. STEM Baccalaureate Degrees Awarded by the CSU to Students from Underrepresented Minority Groups

Figure 22: Annual Number of Baccalaureate STEM Degrees Awarded by All CSU Campuses to URM Students, 1993-1994 through 2018-2019



Sources: CSU Analytic Studies Division ERS degree files, WebAMP Reverse Site Reports, and WebAMP ExACT Reports. Excludes degrees awarded to non-resident aliens.

Figure 22 displays the annual number baccalaureate STEM degrees awarded by all CSU Campuses to URM students. Appendix Table 8 provides additional detail. From the beginning of Phase I, to the first year of the SPaRA project, annual URM-STEM baccalaureate degree production increased by 659 percent, from 917 in 1994 to 6,963 in 2018-2019.

From 1993-1994 through 2018-2019, the CSU awarded 62,737 STEM baccalaureate degrees to URM students.

During the same period, overall STEM baccalaureate degree production increased by 142 percent. Baccalaureate STEM degrees awarded by the CSU to non-URM students increased by 71 percent during the same period.

The next section focuses on STEM discipline persistence and graduation rates for 1996-2016 CSU-LSAMP first-time freshmen participant cohorts.

D. STEM Discipline Persistence and Graduation Rates for 1996-2017 CSU-LSAMP First Time Freshmen Participant Cohorts

Data sources and methodology

The information presented in this section describes a subset of CSU-LSAMP participants—going back to the third year of Phase I (1996-1997) through year five of the Senior Level II project (2017-2018)—CSU Analytic Studies matched these participants on social security number to CSU ERS records. In accordance with Consortium for Student Retention Data Exchange (CSRDE) criteria, the subset includes only participants entering the CSU system during a fall term as first time, full-time freshmen with declared majors in a STEM discipline. The analysis excludes CSU-LSAMP participants who do not meet these criteria; examples include participants who entered the CSU system as part-time students, those who did not matriculate during a fall term, those without a declared major in a STEM discipline, and students transferring from a California Community College. In addition, because matching to system records relied on social security numbers, participants whose WebAMP records did not include a social security number and those with a data entry error in their social security number could not be included. CSU Analytic Studies was able to match records for 83 percent of CSU-LSAMP Participants. In a change from previous reports, participant cohorts include all students who meet the criteria above, regardless of when they began their participation in CSU-LSAMP. Previous analyses of persistence and graduation limited the analysis to students who began their participation in CSU-LSAMP within their first year.

To assess the impact of CSU-LSAMP participation on persistence and graduation rates, this analysis compares persistence and graduation rates for annual cohorts of CSU-LSAMP Latino/Latina and African American participants with benchmark cohorts. ISR obtained aggregate benchmark cohort information from the California State University Data for the Consortium for Student Retention Data Exchange.

CSRDE specifications for first-time, full-time freshmen cohorts, defined the subset of CSU-LSAMP participants that are included in the analysis. The subset includes 7,106 (26%) of the 27,785 CSU-LSAMP participants. Both CSU-LSAMP participant and benchmark cohorts are comprised of students who entered the CSU system during a fall term as first-time, full-time freshmen with declared majors in a STEM discipline. The benchmark cohorts for 1996-2007 include all students in the specified category who matriculated at one of the 19 CSU campuses participating in Phase III of the CSU-LSAMP program. The benchmark cohorts for 2008-2012 include all students in the specified category who matriculated at one of the 22 CSU campuses participating in the Senior Level I CSU-LSAMP program. All 23 CSU campuses are participating in the Senior Level II CSU-LSAMP program; therefore, the benchmark cohorts for 2013-2017 include all students in the specified category who matriculated at any of the 23 CSU campuses.

The analysis includes persistence and graduation rates for cohorts of Latino/Latina and African-American LSAMP participants. Rates for Native Hawaiian or Other Pacific Islander CSU-LSAMP participants are not included because there was no corresponding benchmark available before 2010 (the closest CSRDE racial/ethnic group is “Asian,” which includes Pacific Islanders). Although CSRDE has added Native Hawaiian or Other Pacific Islander benchmark data (starting in 2010), these rates have not been included in the analysis because the small numbers would produce unstable rates, and to maintain comparability of the Asian and Pacific Islander benchmark used for all prior years. Likewise, there are comparable benchmark data for Native American and Alaskan Native CSU-LSAMP participants, but these rates have not been included in the analysis because the small numbers—both for participant and benchmark cohorts—would produce unstable rates. In some instances, the analysis makes comparisons to “non-URM” students, which includes CSRDE data for White non-Hispanic and Asian or Pacific Islander cohorts.

The analysis describes average persistence and graduation rates across cohort years and CSU-LSAMP phases, making it easier to evaluate overall trends. The cohort years included in each average necessarily

vary as indicated in the figure and table headings. For example, the first-year persistence average includes data from the 1996-2017 cohorts, while the sixth-year average only includes data from the 1996-2012 cohorts. Similarly, the fourth-year graduation average includes data from the 1996-2014 cohorts, while the sixth-year average only includes data from the 1996-2012 cohorts.

Seventh-year persistence and graduation data is not available for 1996-1999 benchmark cohorts. To maintain comparability between benchmark and CSU-LSAMP participant averages, we excluded these cohort years from the computation of average rates for CSU-LSAMP participants. While these rates are included in an effort to enhance the evaluation, the reader should interpret the seven-year rates cautiously. They lack the continuity and stability of fourth-through-sixth-year rates, due to the gap in cohort years and the inclusion of fewer cohorts.

Appendix Table 9 provides first-through-seventh-year STEM discipline persistence rates for each cohort and comparison group. Appendix Table 11 provides fourth-through-seventh-year STEM discipline graduation rates for each cohort and comparison group.

STEM discipline persistence rates for CSU-LSAMP participants

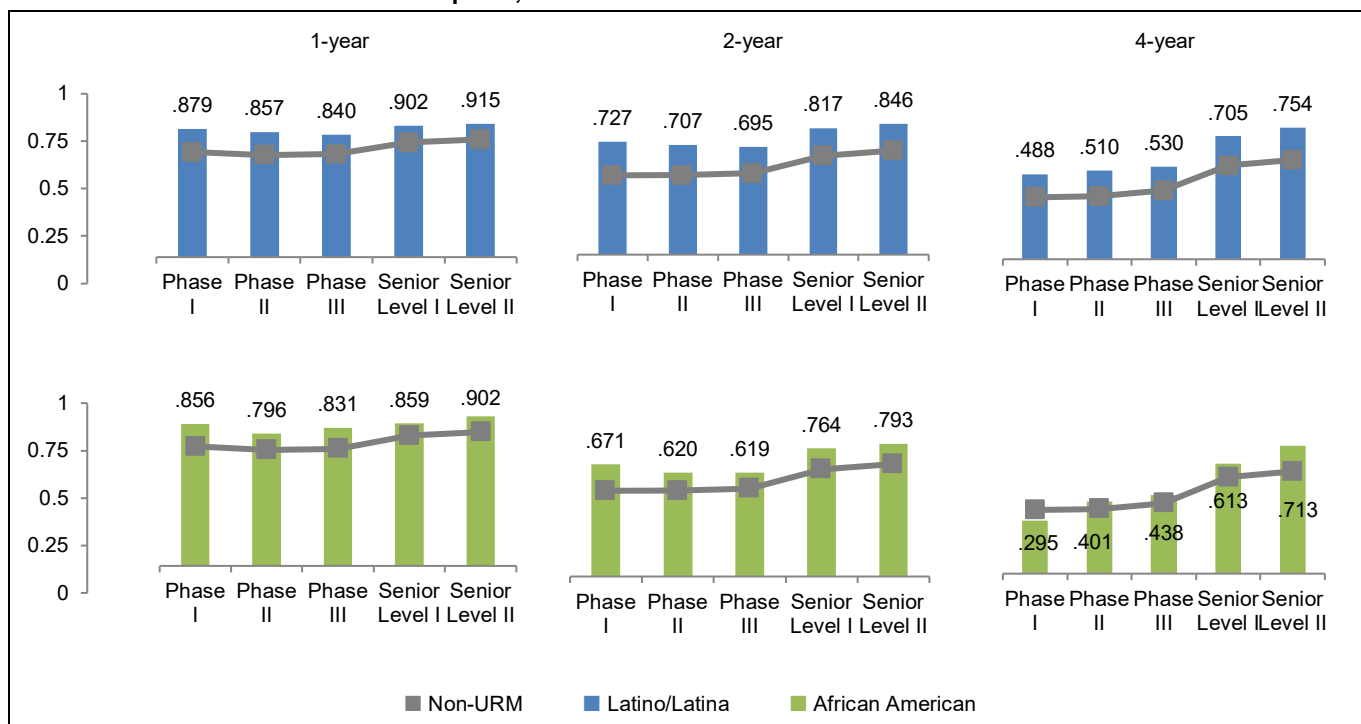
Figure 23 displays STEM discipline persistence rates for CSU-LSAMP participants. Appendix Table 9 provides more detail. Between the fall 1996 term and the fall 2017 term, there were 5,728 Latino/Latina students and 1,378 African American students who met the CSRDE criteria for STEM discipline cohorts (Appendix Table 5). This translates to an average of 260 Latino/Latina participants and 63 African American participants in each annual cohort. Figure 23 shows first-, second-, and fourth-year persistence rates for Latino/Latina and African American participants entering the program during each phase.

Eighty-eight percent of Latino/Latina CSU-LSAMP participants who entered a CSU-LSAMP campus during the last two years of Phase I of the project remained enrolled as STEM majors one year later. For those entering during Phases II and III, the percentage declined slightly to between 86 and 84 percent, but increased to 90 percent for those entering during the five years of the Senior Level I project. The percentage increased again in the five years of Senior Level II. Ninety-two percent of Latino/Latina CSU-LSAMP participants who entered a CSU-LSAMP campus during the five years of Senior Level II remained enrolled as STEM majors one year later.

Seventy-three percent of Latino/Latina CSU-LSAMP participants who entered a CSU-LSAMP campus during the last two years of Phase I of the project remained enrolled as STEM majors two years later. For those entering during Phases II and III, the percentage declined slightly to between 70 and 71 percent, but increased to 82 percent for those entering during the five years of the Senior Level I project. The percentage increased again in the five years of the Senior Level II project. Eighty-five percent of Latino/Latina CSU-LSAMP participants who entered a CSU-LSAMP campus during the five years of Senior Level II remained enrolled as STEM majors two years later.

Fourth-year persistence rates for Latino/Latina CSU-LSAMP participants increased gradually between Phase I, Phase II, and Phase III (from 49 to 53 percent). During the Senior Level I project fourth-year persistence rates increased to 71 percent. In the first two years of the Senior Level II project, the fourth-year persistence rate increased substantially to 75 percent. Persistence rates for Latino/Latina CSU-LSAMP participants were consistently higher than rates for non-URM students at CSU-LSAMP campuses for all project phases (Phase I, Phase II, Phase III, Senior Level I and Senior Level II).

Figure 23: Average One-, Two-, and Four-Year STEM Discipline Persistence Rates by Phase for Latino/Latina and African American CSU-LSAMP Participants, 1996-2017 Cohorts



Sources: Longitudinal participant database constructed from WebAMP records matched to CSU ERS records. Non-URM student data is from the ASD Consortium for Student Retention Data Exchange (CSRDE) Data for California State University. The cohorts included in the phase averages vary based on the available data, see Figure 7 for more detail.

Eighty-six percent of African American CSU-LSAMP participants who entered a CSU-LSAMP campus during the last two years of Phase I of the project remained enrolled as STEM majors one year later. This percentage fluctuated between 80 and 86 between Phase II, Phase III, and Senior Level I. The percentage increased substantially in the five years of the Senior Level II. Ninety percent of African American CSU-LSAMP participants who entered a CSU-LSAMP campus during the five years of Senior Level II remained enrolled as STEM majors one year later.

Sixty-seven percent of African American CSU-LSAMP participants who entered a CSU-LSAMP campus during the last two years of Phase I of the project remained enrolled as STEM majors two years later. For those entering during Phases II and III, the percentage declined slightly to 62 percent, but increased to 76 percent for those entering during the five years of the Senior Level I project. The percentage increased substantially in the five years of the Senior Level II. Seventy-nine percent of African American CSU-LSAMP participants who entered a CSU-LSAMP campus during the first four years of Senior Level II remained enrolled as STEM majors two years later.

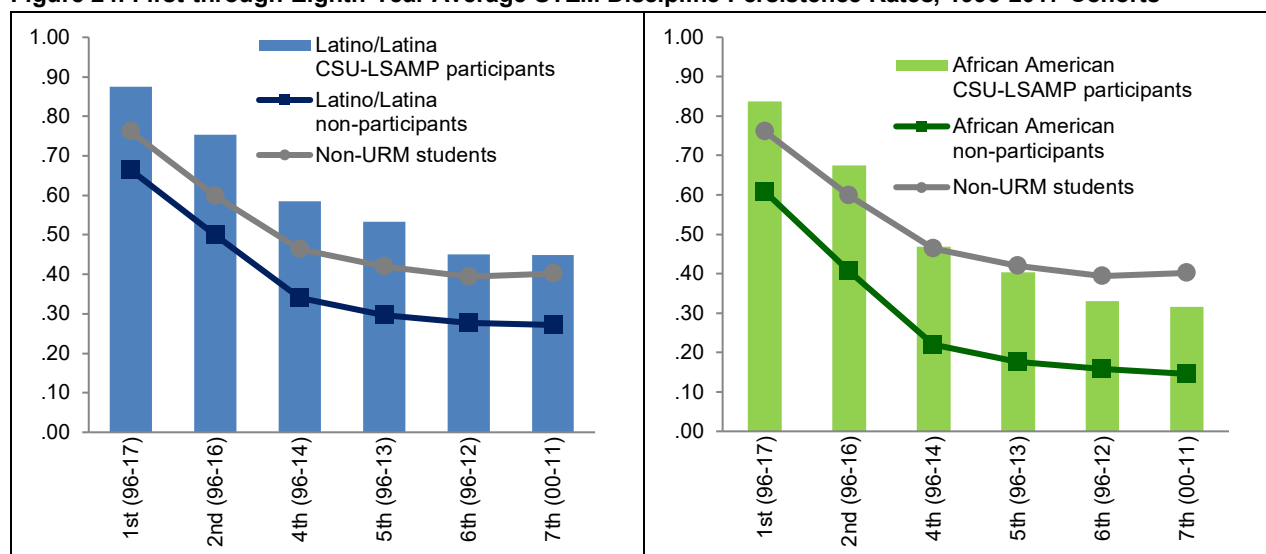
Fourth-year persistence rates for African American CSU-LSAMP participants doubled between during Phase II, Phase III, and Senior Level I (from 30 to 61 percent). During Phase II, Phase III and Senior Level I persistence rates for African American CSU-LSAMP participants were slightly higher than rates for non-URM students. For the first two years of Senior Level II, fourth-year rates increased for African American CSU-LSAMP participants to 71 percent, well exceeding the fourth-year rate for non-URM students (57%).

Setting aside the issue of the phase when participants entered the CSU-LSAMP program, Figure 24 and Table 9 show average first-through-seventh-year STEM discipline rates for CSU-LSAMP participants in comparison to non-participants and non-URM students. Participation in CSU-LSAMP was associated with

improved persistence of Latino/Latina and African American students in STEM disciplines, and the URM/non-URM gap is significantly narrowed—and in many instances—eliminated for URM CSU-LSAMP participants. Latino/Latina CSU-LSAMP participants had STEM discipline persistence rates that are higher than, or equivalent to, rates for non-URM students. African American CSU-LSAMP participants had first-through fifth-year STEM discipline persistence rates that were equivalent to rates for non-URM students, but beginning in the sixth-year, the gap returns.

The differences in first- through seventh-year persistence rates for Latino/Latina and African American participants and estimated rates for non-participants are substantial, ranging from 1.3 times higher for first-year persistence rates to 1.8 times higher for fifth-year persistence rates.

Figure 24: First-through-Eighth-Year Average STEM Discipline Persistence Rates, 1996-2017 Cohorts



Sources: Longitudinal participant database constructed from WebAMP records matched to CSU ERS records. Non-participant and non-URM student data is from the ASD Consortium for Student Retention Data Exchange (CSRDE) Data for California State University.

The differences in first- through seventh-year persistence rates for Latino/Latina participants and estimated rates for non-participants are substantial, ranging from 1.3 times higher for first-year persistence rates to 1.6-1.8 times higher for third-year through seventh-year persistence rates. There are also significant differences for African American participants and estimated rates for non-participants, ranging from 1.4 times higher for first-year persistence rates to 2.1-2.3 times higher for fourth-year through seventh-year persistence rates.

Table 9: Average STEM Discipline Persistence Rates, 1996-2017 Cohorts

		Average STEM Discipline Persistence Rates					
		1 st year (1996- 2017)	2 nd year (1996- 2016)	4 th year (1996- 2014)	5 th year (1996- 2013)	6 th year (1996- 2012)	7 th year (2000- 2011)
Latino/ Latina	LSAMP	.875	.753	.585	.533	.450	.448
	Non-LSAMP (estimated)	.664	.499	.341	.297	.277	.272
	All (LSAMP & non-LSAMP)	.702	.521	.366	.323	.298	.293
African American	LSAMP	.837	.675	.468	.404	.330	.316
	Non-LSAMP (estimated)	.609	.406	.220	.177	.158	.146
	All (LSAMP & non-LSAMP)	.638	.442	.256	.211	.185	.171
Asian or Pacific Islander		.770	.609	.455	.402	.370	.374
White		.754	.590	.470	.433	.413	.424
All STEM first-time freshmen		.734	.565	.422	.379	.355	.358
Differential between LSAMP & non-LSAMP	Latino/Latina	1.3	1.5	1.7	1.8	1.6	1.6
	African American	1.4	1.7	2.1	2.3	2.1	2.2

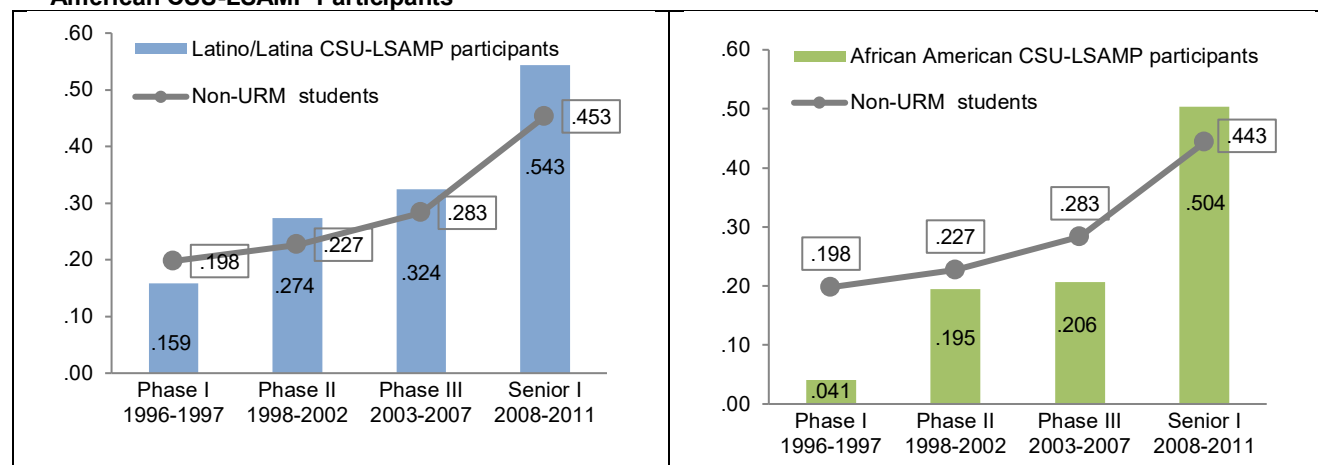
Sources: Longitudinal participant database constructed from WebAMP records matched to CSU ERS records. Non-participant and non-URM student data is from the ASD Consortium for Student Retention Data Exchange (CSRDE) Data for California State University.

STEM discipline graduation rates for CSU-LSAMP participants

Figure 25 displays STEM discipline graduation rates for CSU-LSAMP participants. Latino/Latina and African American CSU-LSAMP participants who entered a CSU-LSAMP campus during Phase III and Senior Level I had higher STEM discipline graduation rates than participants who entered during Phase I and Phase II (Figure 25). The percentage of CSU-LSAMP participants graduating increased from 16 to 54 percent for Latino/Latina participants and from four to 50 percent for African American participants.

From Phase II through Senior Level I, graduation rates for Latino/Latina CSU-LSAMP participants were higher than rates for non-URM students at CSU-LSAMP campuses.

Figure 25: Average Six-Year STEM Discipline Graduation Rates by Phase for Latino/Latina and African American CSU-LSAMP Participants



Source: Longitudinal participant database constructed from WebAMP records matched to CSU ERS records. Non-participant and non-URM student data is from the ASD Consortium for Student Retention Data Exchange (CSRDE) Data for California State University.

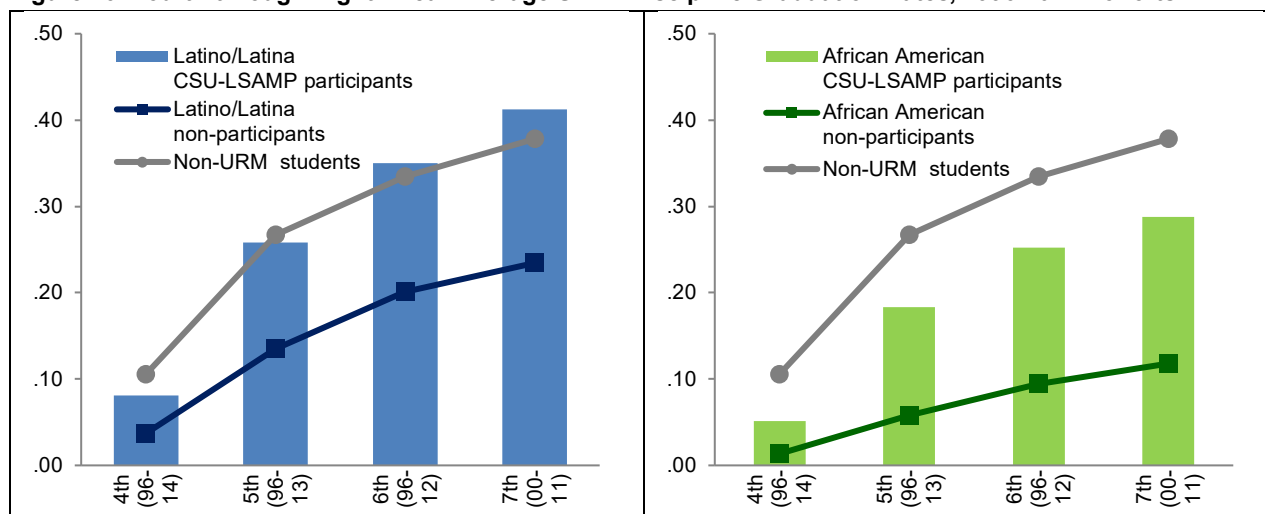
Through the first three phases of the project, graduation rates for African American CSU-LSAMP participants were lower than rates for non-URM students at CSU-LSAMP campuses. However, during

Senior Level I, the graduation rate for African American CSU-LSAMP participants surpassed the graduation rate for non-URM students.

Setting aside the issue of the project phase during which participants entered, Figure 26 and Table 10 compare average fourth- through seventh-year STEM discipline graduation rates for CSU-LSAMP participants with rates for non-participants and non-URM students. Participation in CSU-LSAMP was associated with improved graduation rates of Latino/Latina and African American students in STEM disciplines.

For URM CSU-LSAMP participants, the URM/non-URM gap was significantly narrowed, and for Latino/Latina CSU-LSAMP participants, the gap was eliminated; average graduation rates for Latino/Latina CSU-LSAMP participants were higher than rates for non-URM students. Average graduation rates for African American participants were lower than non-URM comparison groups, although the gap narrows significantly between sixth- and seventh-year graduation rates. Six-year graduation rates for African American participants were 1.3 times lower than rates for non-URM students.

Figure 26: Fourth-through-Eighth-Year Average STEM Discipline Graduation Rates, 1996-2014 Cohorts



Source: Longitudinal participant database constructed from WebAMP records matched to CSU ERS records. Non-participant and non-URM student data is from the ASD Consortium for Student Retention Data Exchange (CSRDE) Data for California State University.

Six-year STEM discipline graduation rates for Latino/Latina and African American participants were 1.8 times higher than estimated rates for non-participants.

Average STEM discipline graduation rates for Latino-Latina CSU-LSAMP participants were consistently higher than that of Latino/Latina non-participants. The average four-year STEM discipline graduation rate of Latino/Latina CSU-LSAMP participants was 2.2 times higher than that of Latino/Latina non-participants. The difference between Latino/Latina participant and non-participant rates narrowed slightly in subsequent years, with seventh-year graduation rates of Latino/Latina participants 1.8 times higher than those of Latino/Latina non-participants.

Average STEM discipline graduation rates for African American CSU-LSAMP participants were consistently higher than rates for African American non-participants. The average four-year graduation rate of African American CSU-LSAMP participants was 3.8 times higher than that of African American non-participants. The difference between African American participant and non-participant rates narrowed in subsequent

years, with seventh-year graduation rates of African American participants 2.4 times higher than those of African American non-participants.

Table 10: Fourth-through-Seventh-Year Average STEM Discipline Graduation Rates, 1996-2014 Cohorts

			Average STEM Discipline Graduation Rates			
			4 th year (1996-2014)	5 th year (1996-2013)	6 th year (1996-2012)	7 th year (2000-2011)
Latino/ Latina	LSAMP		.081	.258	.350	.413
	Non-LSAMP (estimated)		.037	.135	.201	.234
	All (LSAMP & non-LSAMP)		.042	.149	.219	.255
African American	LSAMP		.052	.183	.252	.288
	Non-LSAMP (estimated)		.013	.058	.094	.118
	All (LSAMP & non-LSAMP)		.019	.077	.119	.143
Asian or Pacific Islander			.074	.212	.292	.342
White			.131	.310	.368	.406
All STEM first-time freshmen			.082	.222	.289	.330
Differential LSAMP & non-LSAMP	between	Latino/Latina	2.2	1.9	1.7	1.8
		African American	3.8	3.2	2.7	2.4

Source: Longitudinal participant database constructed from WebAMP records matched to CSU ERS records. Non-participant and non-URM student data is from the ASD Consortium for Student Retention Data Exchange (CSRDE) Data for California State University.

The next section focuses on persistence and graduation rates for 2003-2017 CSU-LSAMP California Community College transfer participant cohorts.

E. STEM Discipline Persistence and Graduation Rates for 2003-2017 CSU-LSAMP California Community College Transfer Participant Cohorts

Data sources and methodology

The information presented in this section describes a subset of CSU-LSAMP participants—going back to the beginning of Phase III (2003-2004) through year five of the Senior Level II project (2017-2018)—CSU Analytic Studies matched these participants on social security number to CSU ERS records. In accordance with Consortium for Student Retention Data Exchange (CSRDE) criteria, the subset includes only participants entering the CSU system during a fall term as California Community College transfers who were STEM majors and sophomores or above. Matching to system records relied on social security numbers; therefore, participants whose WebAMP records did not include a social security number and those with a data entry error in their social security number could not be included. CSU Analytic Studies was able to match records for 83 percent of CSU-LSAMP Participants.

To assess the impact of CSU-LSAMP participation on persistence and graduation rates, this analysis compares persistence and graduation rates for annual cohorts of CSU-LSAMP Latino/Latina and African American participants with benchmark cohorts. ISR obtained aggregate benchmark cohort information from the California State University Data for the Consortium for Student Retention Data Exchange.

The benchmark cohorts for 2003-2017 include all students in the specified category who matriculated at one of the 23 CSU campuses. The analysis includes persistence and graduation rates for cohorts of Latino/Latina and African-American LSAMP participants. Rates for Native Hawaiian or Other Pacific Islander CSU-LSAMP participants are not included because there was no corresponding benchmark available before 2010 (the closest CSRDE racial/ethnic group is “Asian,” which includes Pacific Islanders). Although CSDRE has added Native Hawaiian or Other Pacific Islander benchmark data (starting in 2010), these rates have not been included in the analysis because the small numbers would produce unstable rates, and to maintain comparability of the Asian and Pacific Islander benchmark used for all prior years. Likewise, there are comparable benchmark data for Native American and Alaskan Native CSU-LSAMP participants, but these rates have not been included in the analysis because the small numbers—both for participant and benchmark cohorts—would produce unstable rates. In some instances, the analysis makes comparisons to “non-URM” students, which includes CSRDE data for White non-Hispanic and Asian or Pacific Islander cohorts.

The analysis describes average persistence and graduation rates across cohort years and CSU-LSAMP phases, making it easier to evaluate overall trends. The cohort years included in each average necessarily vary as indicated in the figure and table headings. For example, the first-year persistence average includes data from the 2003-2017 cohorts, while the sixth-year average only includes data from the 2003-2012 cohorts. Similarly, the fourth-year graduation average includes data from the 2003-2014 cohorts, while the sixth-year average only includes data from the 2003-2012 cohorts.

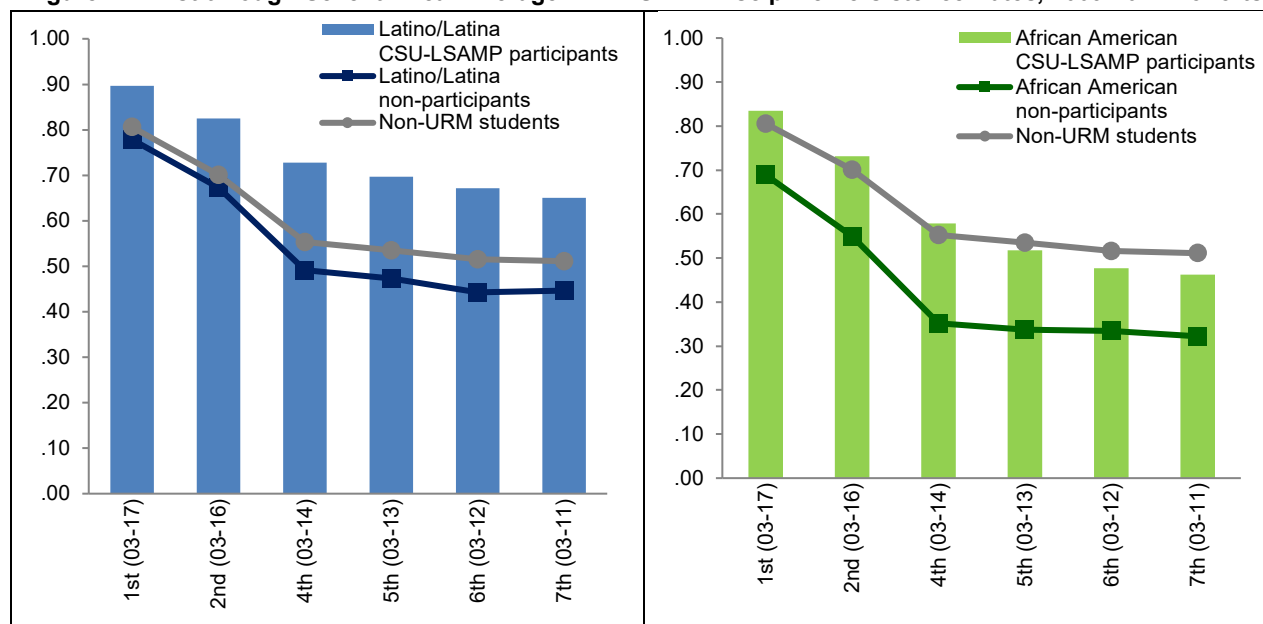
Appendix Table 12 provides first-through-seventh-year persistence rates for each cohort and comparison group. Appendix Table 13 provides fourth-through-seventh-year graduation rates for each cohort and comparison group.

STEM discipline persistence rates for CCCT STEM CSU-LSAMP participants

Figure 27 and Table 11 show average first-through-seventh-year rates for CSU-LSAMP CCCT participants in comparison to non-participants and non-URM students. First-through-seventh-year persistence of Latino/Latina participants exceeds persistence for URM non-participants and non-URM students. First-through-fourth-year persistence of African American participants either exceeds or matches persistence

rates for African American non-participants and non-URM students. However, a narrow gap between African American participants and non-URM students returned in the fourth-year.

Figure 27: First-through-Seventh-Year Average CCCT STEM Discipline Persistence Rates, 2003-2017 Cohorts



Sources: Longitudinal participant database constructed from WebAMP records matched to CSU ERS records. Non-participant and non-URM student data is from the ASD Consortium for Student Retention Data Exchange (CSRDE) Data for California State University.

The first-through-seventh-year average persistence rates for Latino/Latina and African American CCCT participants 1.2-1.6 times higher than estimated rates for non-participants.

Table 11: Average CCCT STEM Discipline Persistence Rates, 2003-2017 Cohorts

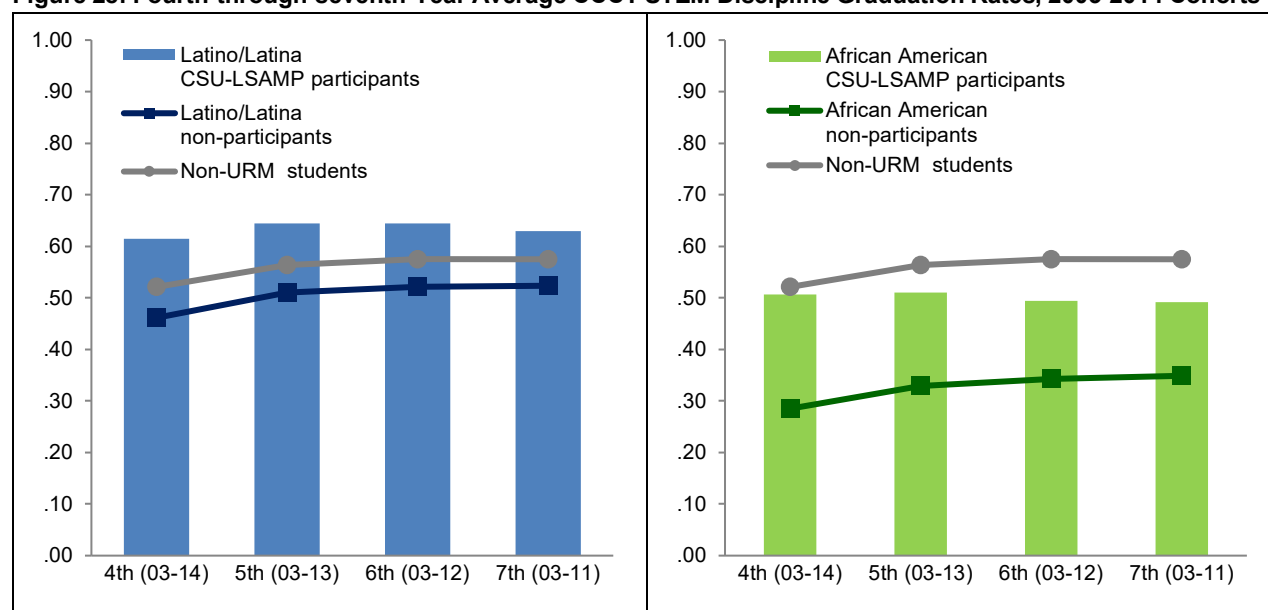
		Average CCCT STEM Persistence Rates					
		1 st year (2003- 2017)	2 nd year (2003- 2016)	4 th year (2003- 2014)	5 th year (2003- 2013)	6 th year (2003- 2012)	7 th year (2003- 2011)
Latino/ Latina	LSAMP	.896	.825	.728	.696	.672	.650
	Non-LSAMP (estimated)	.779	.672	.491	.472	.443	.446
	All (LSAMP & non-LSAMP)	.788	.686	.507	.487	.459	.460
African American	LSAMP	.835	.732	.578	.518	.477	.462
	Non-LSAMP (estimated)	.689	.550	.352	.337	.334	.322
	All (LSAMP & non-LSAMP)	.710	.577	.387	.367	.359	.347
Asian or Pacific Islander		.801	.687	.516	.496	.474	.471
White		.809	.710	.576	.557	.540	.534
All California Community College Transfers		.798	.695	.537	.521	.502	.499
Differential between LSAMP & non-LSAMP	Latino/Latina	1.2	1.2	1.5	1.5	1.5	1.5
	African American	1.2	1.3	1.6	1.5	1.4	1.4

Sources: Longitudinal participant database constructed from WebAMP records matched to CSU ERS records. Non-participant and non-URM student data is from the ASD Consortium for Student Retention Data Exchange (CSRDE) Data for California State University.

STEM discipline graduation rates for CCCT CSU-LSAMP participants

Figure 28 and Table 12 compare average fourth-through-seventh-year graduation rates for CCCT CSU-LSAMP participants with rates for non-participants and non-URM students. Average graduation rates for Latino/Latina CSU-LSAMP participants exceed the rates for Latino/Latina non-participants and the rates for non-URM students. Average graduation rates for African American participants exceed the rates for African American non-participants, but starting in the fifth-year, there is a gap between African American students and non-URM students.

Figure 28: Fourth-through-seventh-Year Average CCCT STEM Discipline Graduation Rates, 2003-2014 Cohorts



Source: Longitudinal participant database constructed from WebAMP records matched to CSU ERS records. Non-participant and non-URM student data is from the ASD Consortium for Student Retention Data Exchange (CSRDE) Data for California State University.

Fourth-year graduation rates for Latino/Latina and African American CCCT participants approach or exceed estimated rates for non-participants and non-URM students.

Table 12: Fourth-through-Seventh-Year Average CCCT STEM Discipline Graduation Rates, 2003-2014 Cohorts

		Average CCCT STEM Discipline Graduation Rates			
		4 th year (2003-2014)	5 th year (2003-2013)	6 th year (2003-2012)	7 th year (2003-2011)
Latino/ Latina	LSAMP	.615	.645	.644	.629
	Non-LSAMP (estimated)	.461	.511	.522	.523
	All (LSAMP & non-LSAMP)	.477	.525	.537	.537
African American	LSAMP	.506	.510	.495	.492
	Non-LSAMP (estimated)	.285	.329	.342	.349
	All (LSAMP & non-LSAMP)	.322	.360	.369	.375
Asian or Pacific Islander		.476	.517	.529	.528
White		.548	.591	.602	.602
All California Community College Transfers		.506	.551	.563	.564
Differential between LSAMP & non-LSAMP	Latino/Latina	1.3	1.3	1.2	1.2
	African American	1.8	1.5	1.4	1.4

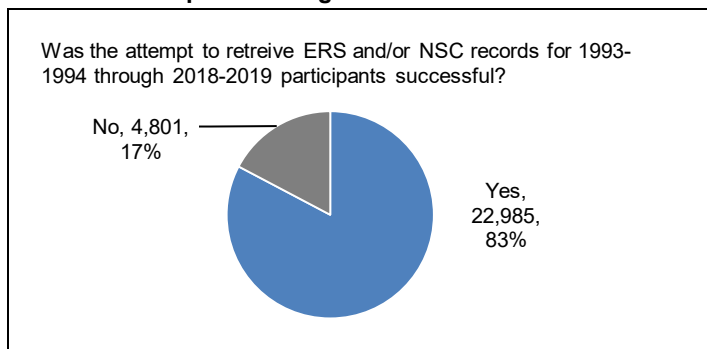
Source: Longitudinal participant database constructed from WebAMP records matched to CSU ERS records. Non-participant and non-URM student data is from the ASD Consortium for Student Retention Data Exchange (CSRDE) Data for California State University.

The next section examines baccalaureate degree attainment for CSU-LSAMP participants.

F. Baccalaureate Degree Attainment for CSU-LSAMP Participants

The preceding description of STEM discipline persistence and graduation rates focused on a subset of 7,106 CSU-LSAMP participants who met specific criteria necessary for comparison with CSRDE benchmarks.⁷ In contrast, the current section examines baccalaureate degree attainment for a larger group of 22,985 CSU-LSAMP participants and includes degrees earned outside the CSU system.

Figure 29: Results of Tracking Data Retrieval for CSU-LSAMP Participants through 2018-2019



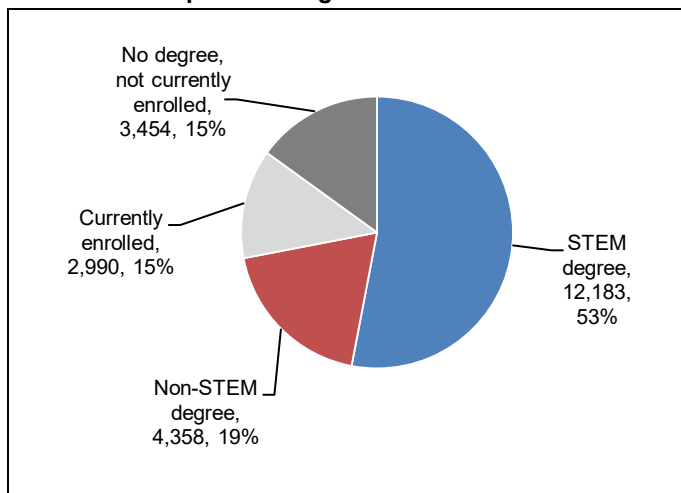
See Appendix Table 14 for more detail

Figure 29 shows the percentage of CSU-LSAMP participants that were successfully matched in either the ERS or NSC. Appendix Table 14 provides more detail. Information for these 22,985 participants is the result of an attempt to retrieve ERS and NSC records for the 27,786 students who participated in CSU-LSAMP at any time from 1993-1994 through 2018-2019.

These 22,985 participants include the 7,106 students who met the CSRDE criteria as well as those who did not. This includes students who entered the CSU system as

part-time students, those who did not matriculate during a fall term, those without a declared major in a STEM discipline, students transferring from a California Community College, and students from all racial and ethnic groups.

Figure 30: Baccalaureate Degree Attainment for CSU-LSAMP Participants through 2018-2019



Source: Longitudinal participant database constructed from WebAMP records matched to ERS and NSC records. See Appendix Table 15 for more detail.

Figure 30 displays the baccalaureate degree attainment for CSU-LSAMP participants. Appendix Table 15 provides more detail. ERS and NSC degree records show that of these 22,985 participants, 16,541 (72%) earned bachelor's degrees by spring 2020 and that 12,183 of these degrees were in STEM disciplines, for a STEM degree completion rate of 53 percent. Of the STEM degrees, 9,756 (80%) were awarded to students from URM groups, and the STEM degree completion rate for URM students was 42 percent (9,756 URM STEM degrees out of the 22,985 participants for whom ERS and/or NSC records were retrieved) (Figure 30 and Appendix Table 15).

⁷ Latino/Latina and African American participants entering the CSU system during a fall term as first time, full-time freshmen with declared majors in a STEM discipline.

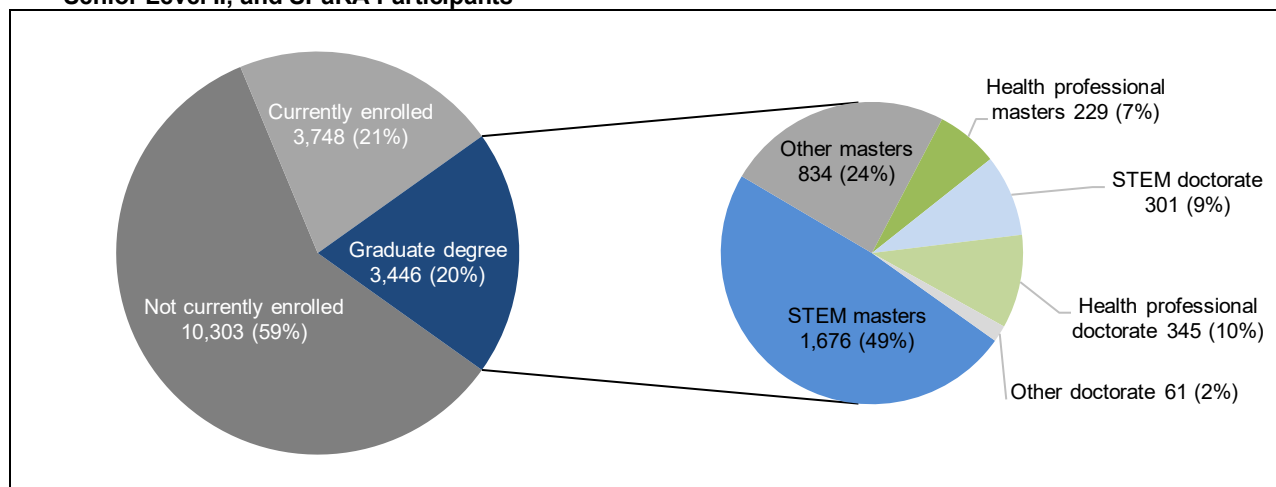
Assuming that the same degree completion rates also apply to the 17 percent of participants for whom ERS and NSC records could not be retrieved translates to an estimate that overall, 14,727 participants earned STEM bachelor's degrees by Spring 2020 and that 11,670 of these STEM degrees were awarded to URM participants.

The next section examines advancement to graduate programs for CSU-LSAMP Phase III, Senior Level I, Senior Level II, and SPaRA participants.

G. Advancement to Graduate Programs for CSU-LSAMP Phase II, Senior Level I, Senior Level II, and SPaRA Participants

In Phase III, Senior Level I, Senior Level II, and continuing in SPaRA, the CSU-LSAMP program placed increased emphasis on serving upper division students in research and other activities designed to motivate them to pursue graduate study and enhance their competitiveness. Figure 31 and Table 13 display estimated post-baccalaureate enrollment and degree attainment for CSU-LSAMP participants. Based on analysis of NSC and ERS records for Phase III, Senior Level I, Senior Level II, and SPaRA CSU-LSAMP participants, we estimate that 13,128 students (75%) graduated with a bachelor's degree.⁸ We also found that 41 percent of the graduates (4,486 out of 10,915) with tracking information available either earned a post-baccalaureate degree or are currently enrolled (Figure 31 and Table 13).⁹ This translates to an estimated 1,676 Phase III, Senior Level I, Senior Level II, and SPaRA participants who obtained a STEM Master's degree and 301 who obtained a STEM doctorate degree.

Figure 31: Estimated Post-Baccalaureate Enrollment and Degree Attainment for Phase III, Senior Level I, Senior Level II, and SPaRA Participants



Source: Longitudinal participant database constructed from WebAMP records matched to CSU ERS records.

⁸ Of the 17,503 Phase III, Senior Level I, Senior Level II, and SPaRA participants, we successfully obtained tracking information for 15,014 students, and the records showed that 11,254 of them (or 75%) graduated with a bachelor's degree. Applying this graduation rate to the 17,503 Phase III, Senior Level I, Senior Level II, and SPaRA participants produces an estimated 13,128 Phase III, Senior Level I, Senior Level II, and SPaRA participants graduating with bachelor's degrees.

⁹ Many of these participants have not had enough time to complete their doctorate, so it is likely that the number of doctorate degrees will increase in the coming years. For S&E 2009 doctorate recipients, the median number of years from entry to graduate school to receipt of doctorate was 7.0 (Science and Engineering Indicators 2012S, National Science Foundation, National Center for Science and Engineering Statistics, Survey of Earned Doctorates, special tabulations [2010]).

Table 13: Post-Baccalaureate Enrollment and Degree Attainment for Phase III, Senior Level I, Senior Level II, and SPaRA Participants

	Phase III, Senior Level I, Senior Level II, and SPaRA participants who obtained a bachelor's degree and for whom tracking information is available		Estimated number of Phase III, Senior Level I, Senior Level II, and SPaRA participants
	Number	Percent	
STEM masters	1,045	9.6%	1,676
Health professional masters	143	1.3%	229
Other masters	520	4.8%	834
STEM doctorate	188	1.7%	301
Health professional doctorate	215	2.0%	345
Other doctorate	38	0.3%	61
Currently enrolled	2,337	21.4%	3,748
Not currently enrolled	6,425	58.9%	10,303
Total	10,915	100.0%	17,503

Source: Longitudinal participant database constructed from WebAMP records matched to CSU ERS records.

SUMMARY

The CSU-LSAMP program has demonstrated long-term success, engaging 27,786 students over the last 26 years. Overall, the CSU Alliance met six of the nine short-term milestones in the first year of SPaRA. Likewise, the CSU-Alliance met or partially met six of the seven long-term outcomes in the first year of SPaRA.

One of the biggest challenges the program faces is in meeting the goals for CSU-LSAMP first-time freshmen and community college transfer students to persist and graduate in STEM at rates two times higher than URM-STEM non-participants.

For the first time, benchmark data for California community college transfer (CCCT) students is available for STEM disciplines. The project was unable to meet the goal of a four-year graduation rate for CCCT URM CSU-LSAMP participants two times higher than that of CCCT URM non-participants. However, the retention data highlights the extraordinary success of the project in meeting the goal of a four-year graduation rate for CCCT URM CSU-LSAMP participants that equals the rate for CCCT non-URM students.

Likewise, the project was unable to meet the persistence and graduation goals for first-time freshman. The project did not meet the goal of first- and second-year persistence rates for URM-STEM CSU-LSAMP participants that were two times higher than URM-STEM non-participants (rates were 1.3 and 1.5). the project nearly met the goal of a six-year graduation rate for URM-STEM CSU-LSAMP participants that was two times higher (1.8 times higher) than URM-STEM non-participants. However, the retention data highlights the extraordinary success of the project in meeting the goals of first- and second-year persistence rates and six-year graduation rates for URM-STEM CSU-LSAMP participants that approach or equal the rate of non-URM STEM students.

APPENDIX A: ADDITIONAL TABLES

Appendix Table 1: Participant Characteristics, SPaRA CSU-LSAMP through 2018-2019

		Number			Percent		
		Continuing from earlier phase	Entering During SPaRA	Total	Continuing from earlier phase	Entering During SPaRA	Total
Gender	Male	979	397	1,376	50.5%	44.7%	48.7%
	Female	960	487	1,447	49.5%	54.8%	51.2%
	Unknown	1	4	5	0.1%	0.6%	0.2%
	Total	1,940	888	2,828	100.0%	100.0%	100.0%
Race/ Ethnicity	Latino/Latina	1,450	629	2,079	74.7%	70.8%	73.5%
	African American	159	56	215	8.2%	6.3%	7.6%
	Native American/Alaska Native	14	1	15	0.7%	0.1%	0.5%
	Native Hawaiian/Pacific Islander	13	10	23	0.7%	1.1%	0.8%
	More than one URM group	33	14	47	1.7%	1.6%	1.7%
	Non-minority	245	164	409	12.6%	18.5%	14.5%
	Race not reported	26	14	40	1.3%	1.6%	1.4%
	Total	1,940	888	2,828	100.0%	100.0%	100.0%
Class Level at Program Entry	Freshman	514	124	638	26.5%	14.0%	22.6%
	Sophomore	374	109	483	19.3%	12.3%	17.1%
	Junior	512	203	715	26.4%	22.9%	25.3%
	Senior	540	452	992	27.8%	50.9%	35.1%
	Total	1,940	888	2,828	100.0%	100.0%	100.0%
Division at Program Entry	Lower	888	233	1,121	45.8%	12.0%	39.6%
	Upper	1,052	1,052	1,707	54.2%	54.2%	60.4%
	Total	1,940	1,940	2,828	100.0%	100.0%	100.0%
Discipline*	Agriculture	18	24	42	0.9%	2.7%	1.5%
	Architecture	12	2	14	0.6%	0.2%	0.5%
	Biological Sciences	609	317	926	31.4%	35.7%	32.7%
	Business and Management	0	1	1	0.0%	0.1%	0.0%
	Computer Science	150	59	209	7.7%	6.6%	7.4%
	Engineering	654	220	874	33.7%	24.8%	30.9%
	Engineering Technologies	21	3	24	1.1%	0.3%	0.8%
	Interdisciplinary Studies	2	0	2	0.1%	0.0%	0.1%
	Mathematics	133	64	197	6.9%	7.2%	7.0%
	Natural Resources & Conservation	39	26	65	2.0%	2.9%	2.3%
	Physical Sciences	300	171	471	15.5%	19.3%	16.7%
	Non-STEM, undeclared	2	1	3	0.1%	0.1%	0.1%
	Total	1,940	888	2,828	100.0%	100.0%	100.0%
Campus*	Bakersfield	36	29	65	1.9%	3.3%	2.3%
	Channel Islands	12	17	29	0.6%	1.9%	1.0%
	Chico	164	38	202	8.5%	4.3%	7.1%
	Dominguez Hills	116	55	171	6.0%	6.2%	6.0%
	East Bay	9	13	22	0.5%	1.5%	0.8%
	Fresno	149	110	259	7.7%	12.4%	9.2%
	Fullerton	42	24	66	2.2%	2.7%	2.3%
	Humboldt	80	27	107	4.1%	3.0%	3.8%
	Long Beach	44	27	71	2.3%	3.0%	2.5%
	Los Angeles	303	65	368	15.6%	7.3%	13.0%
	Maritime Academy	22	14	36	1.1%	1.6%	1.3%
	Monterey Bay	62	27	89	3.2%	3.0%	3.1%
	Northridge	96	26	122	4.9%	2.9%	4.3%
	Pomona	65	115	180	3.4%	13.0%	6.4%
	Sacramento	88	28	116	4.5%	3.2%	4.1%
	San Bernardino	78	33	111	4.0%	3.7%	3.9%
	San Diego	71	20	91	3.7%	2.3%	3.2%
	San Francisco	21	9	30	1.1%	1.0%	1.1%
	San Jose	154	26	180	7.9%	2.9%	6.4%
	San Luis Obispo	153	95	248	7.9%	10.7%	8.8%
	San Marcos	100	33	133	5.2%	3.7%	4.7%
	Sonoma	36	19	55	1.9%	2.1%	1.9%
	Stanislaus	39	38	77	2.0%	4.3%	2.7%
	Total	1,940	888	2,828	100.0%	100.0%	100.0%

Source: WebAMP

* Discipline and campus for most recent participation year.

Appendix Table 2: Selected Participant Characteristics by First Year of Participation, SPaRA CSU-LSAMP through 2018-2019

		Number		Percent	
		Cont. from earlier phase	1 st Year of CSU-LSAMP Participation Year 1 2018-2019	Cont. from earlier phase	1 st Year of CSU-LSAMP Participation Year 1 2018-2019
Gender	Male	979	397	50.5%	44.7%
	Female	960	487	49.5%	54.8%
	Unknown	1	4	0.1%	0.5%
	Total	1,940	888	100.0%	100.0%
Race/ Ethnicity	Latino/Latina	1,450	629	74.7%	70.8%
	African American	159	56	8.2%	6.3%
	Native American/Alaska Native	14	1	0.7%	0.1%
	Native Hawaiian/Pacific Islander	13	10	0.7%	1.1%
	More than one URM group	33	14	1.7%	1.6%
	Non-minority	245	164	12.6%	18.5%
	Race not reported	26	14	1.3%	1.6%
	Total	1,940	888	100.0%	100.0%
Class Level at Program Entry	Freshman	514	124	26.5%	14.0%
	Sophomore	374	109	19.3%	12.3%
	Junior	512	203	26.4%	22.9%
	Senior	540	452	27.8%	50.9%
	Total	1,940	888	100.0%	100.0%
Discipline*	Agriculture	18	24	0.9%	2.7%
	Architecture	12	2	0.6%	0.2%
	Biological Sciences	609	317	31.4%	35.7%
	Business and Management	0	1	0.0%	0.1%
	Computer Science	150	59	7.7%	6.6%
	Engineering	654	220	33.7%	24.8%
	Engineering Technologies	21	3	1.1%	0.3%
	Interdisciplinary Studies	2	0	0.1%	0.0%
	Mathematics	133	64	6.9%	7.2%
	Natural Resources & Conservation	39	26	2.0%	2.9%
	Physical Sciences	300	171	15.5%	19.3%
	Non-STEM, undeclared	2	1	0.1%	0.1%
	Total	1,940	888	100.0%	100.0%
Campus*	Bakersfield	36	29	1.9%	3.3%
	Channel Islands	12	17	0.6%	1.9%
	Chico	164	38	8.5%	4.3%
	Dominguez Hills	116	55	6.0%	6.2%
	East Bay	9	13	0.5%	1.5%
	Fresno	149	110	7.7%	12.4%
	Fullerton	42	24	2.2%	2.7%
	Humboldt	80	27	4.1%	3.0%
	Long Beach	44	27	2.3%	3.0%
	Los Angeles	303	65	15.6%	7.3%
	Maritime Academy	22	14	1.1%	1.6%
	Monterey Bay	62	27	3.2%	3.0%
	Northridge	96	26	4.9%	2.9%
	Pomona	65	115	3.4%	13.0%
	Sacramento	88	28	4.5%	3.2%
	San Bernardino	78	33	4.0%	3.7%
	San Diego	71	20	3.7%	2.3%
	San Francisco	21	9	1.1%	1.0%
	San Jose	154	26	7.9%	2.9%
	San Luis Obispo	153	95	7.9%	10.7%
	San Marcos	100	33	5.2%	3.7%
	Sonoma	36	19	1.9%	2.1%
	Stanislaus	39	38	2.0%	4.3%
	Total	1,940	888	100.0%	100.0%

Source: WebAMP

* Discipline and campus for most recent participation year.

Appendix Table 3: Activity Participation, SPaRA CSU-LSAMP through 2018-2019

		Year 1 2018-2019
Objective 1	Material Support	641
	Other Academic Support Activities	175
	Summer Bridge Program (STEM)	216
	Supplemental Instruction	551
	Transition Support Activities	456
	Total	2,039
Objective 2	Facilitators, Mentors, & Trainers	191
	Graduate School Preparation Activities	610
	Internships	128
	International Activities	59
	LSAMP Funded Research	411
	Other Funded Research	552
	Other Professionalization Activities	151
	Presentation/Publication of Research	554
	Total	2,656
Objective 3	Communications	2,828
	Conferences (attending only)	456
	LSAMP Advising/Counseling	2,192
	Peer Mentoring	193
	Student Cohesion Activities	852
	Total	6,521
Total units of Activities		11,216
Unduplicated number of participants by objective	Objective 1 Activities	1,179
	Objective 2 Activities	1,224
	Objective 3 Activities	2,828
	Objective 2 Research Activities	796

Source: Longitudinal CSU-LSAMP participant database, constructed from WebAMP records.

Appendix Table 4: Estimated Baccalaureate Degree Attainment for Senior Level II and SPaRA CSU-LSAMP Participants by Year and URM-STEM Category

		Senior Level II and SPaRA CSU-LSAMP participants for whom CSU-ERS and/or NSC records were successfully retrieved:								Estimated number of Senior Level II and SPaRA CSU-LSAMP participants*				
		Number				Percent				URM	Non- URM	Not re- ported	Total	
		URM	Non- URM	Not re- ported	Total	URM	Non- URM	Not re- ported	Total					
Overall	Bachelor's degree	4,273	949	80	5,302	69.3%	80.8%	80.8%	71.3%	4,649	1,040	93	5,780	
	Currently enrolled	1,853	223	19	2,095	30.1%	19.0%	19.2%	28.2%	2,016	244	22	2,284	
	No degree, not enrolled	40	3	0	43	0.6%	0.3%	0.0%	0.6%	44	3	0	47	
	Total	6,166	1,175	99	7,440	100.0%	100.0%	100.0%	100.0%	6,708	1,288	115	8,111	
STEM and non-STEM bachelor's degrees	STEM degree	3,756	871	67	4,694	60.9%	74.1%	67.7%	63.1%	4,086	955	78	5,117	
	Non-STEM degree	517	78	13	608	8.4%	6.6%	13.1%	8.2%	562	86	15	663	
	Currently enrolled	1,853	223	19	2,095	30.1%	19.0%	19.2%	28.2%	2,016	244	22	2,284	
	No degree, not enrolled	40	3	0	43	0.6%	0.3%	0.0%	0.6%	44	3	0	47	
	Total	6,166	1,175	99	7,440	100.0%	100.0%	100.0%	100.0%	6,708	1,288	115	8,111	
All bachelor's degrees by year†	Senior II	Year 1 2013-2014	497	97	12	606	8.1%	8.3%	12.1%	8.1%	541	106	14	661
		Year 2 2014-2015	564	119	10	693	9.1%	10.1%	10.1%	9.3%	614	130	12	756
		Year 3 2015-2016	607	162	9	778	9.8%	13.8%	9.1%	10.5%	660	178	10	848
		Year 4 2016-2017	696	158	11	865	11.3%	13.4%	11.1%	11.6%	757	173	13	943
		Year 5 2017-2018	700	151	13	864	11.4%	12.9%	13.1%	11.6%	762	166	15	942
	SPaRA	Year 1 2018-2019	801	184	16	1,001	13.0%	15.7%	16.2%	13.5%	871	202	19	1,091
		Year 2 2019-2020	216	49	7	272	3.5%	4.2%	7.1%	3.7%	235	54	8	297
	Currently enrolled		1,853	223	19	2,095	30.1%	19.0%	19.2%	28.2%	2,016	244	22	2,284
	No degree, not enrolled		40	3	0	43	0.6%	0.3%	0.0%	0.6%	44	3	0	47
	Total		6,166	1,175	99	7,440	100.0%	100.0%	100.0%	100.0%	6,708	1,288	115	8,111

Source: WebAMP participant data matched to CSU ERS and NSC records.

* The estimated number of participants in each category was obtained by applying the percentages for participants for whom follow-up tracking information is available (e.g., those whose CSU-ERS and/or NSC records were successfully retrieved) to the total number of participants. These estimates may not sum due to rounding.

† We collapsed tracking information to describe the number of degrees awarded annually. The CSU ERS system records the year and term in which the CSU awarded a degree and the NSC system records the date. Data is included through spring 2020.

Appendix Table 4 (continued): Estimated Baccalaureate Degree Attainment for Senior Level II and SPaRA CSU-LSAMP Participants by Year and URM-STEM Category

Senior Level II and SPaRA CSU-LSAMP participants for whom CSU-ERS and/or NSC records were successfully retrieved:												Estimated number of Senior Level II and SPaRA CSU-LSAMP participants*			
Number						Percent									
				URM	Non- URM	Not re- ported	Total	URM	Non- URM	Not re- ported	Total	URM	Non- URM	Not re- ported	Total
STEM and non-STEM bachelor's degrees by year†	STEM degrees	Senior II	13-14	475	95	9	579	7.7%	8.1%	9.1%	7.8%	517	104	10	631
			14-15	531	109	10	650	8.6%	9.3%	10.1%	8.7%	578	119	12	709
			15-16	566	155	8	729	9.2%	13.2%	8.1%	9.8%	616	170	0	795
			16-17	633	153	9	795	10.3%	13.0%	9.1%	10.7%	689	168	10	867
			17-18	634	136	12	782	10.3%	11.6%	12.1%	10.5%	690	149	14	853
	SPaRA		18-19	721	174	14	909	11.7%	14.8%	14.1%	12.2%	784	191	16	991
			19-20	196	49	5	250	3.2%	4.2%	5.1%	3.4%	213	54	6	273
	Non-STEM degrees	Senior II	13-14	22	2	3	27	0.4%	0.2%	3.0%	0.4%	24	2	3	29
			14-15	33	10	0	43	0.5%	0.9%	0.0%	0.6%	36	11	0	47
			15-16	41	7	1	49	0.7%	0.6%	1.0%	0.7%	45	8	1	53
			16-17	63	5	2	70	1.0%	0.4%	2.0%	0.9%	69	5	2	76
			17-18	66	15	1	82	1.1%	1.3%	1.0%	1.1%	72	16	1	89
	SPaRA		18-19	80	10	2	92	1.3%	0.9%	2.0%	1.2%	87	11	2	100
			19-20	20	0	2	22	0.3%	0.0%	2.0%	0.3%	22	0	2	24
	Currently enrolled				1,853	223	19	2,095	30.1%	19.0%	19.2%	28.2%	2,016	244	22
No degree, not enrolled				40	3	0	43	0.6%	0.3%	0.0%	0.6%	44	3	0	47
Total				6,166	1,175	99	7,440	100.0%	100.0%	100.0%	100.0%	6,708	1,288	115	8,111

Source: WebAMP participant data matched to CSU ERS and NSC records.

* The estimated number of participants in each category was obtained by applying the percentages for participants for whom follow-up tracking information is available (e.g., those whose CSU-ERS and/or NSC records were successfully retrieved) to the total number of participants. These estimates may not sum due to rounding.

† We collapsed tracking information to describe the number of degrees awarded annually. The CSU ERS system records the year and term in which the CSU awarded a degree and the NSC system records the date. Data is included through spring 2020.

Appendix Table 5: Participant Characteristics by Entry Phase, 1994-2019

		Phase I 1994-1998		Phase II 1999-2003		Phase III 2004-2008		Senior Level I 2009-2013		Senior Level II 2014-2018		SPaRA 2019		Total	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%
Gender	Male	2,745	59%	4,050	55%	3,245	56%	2,304	54%	2,436	51%	397	45%	15,177	55%
	Female	1,882	41%	3,343	45%	2,536	44%	1,999	46%	2,307	49%	487	55%	12,554	45%
	Not reported	6	0%	34	0%	5	0%	0	0%	4	0%	4	0%	53	0%
	Total	4,633	100%	7,427	100%	5,786	100%	4,303	100%	4,747	100%	888	100%	27,784	100%
Race/ Ethnicity	Latino/Latina	3,001	65%	3,781	51%	4,178	72%	2,689	62%	3,265	69%	629	71%	17,543	63%
	African American	832	18%	1,133	15%	1,015	18%	525	12%	410	9%	56	6%	3,971	14%
	Native American/Alaska Native	101	2%	126	2%	141	2%	77	2%	45	1%	1	0%	491	2%
	Native Hawaiian/Pacific Islander	350	8%	258	3%	137	2%	81	2%	50	1%	10	1%	886	3%
	More than one URM group	6	0%	30	0%	95	2%	102	2%	74	2%	14	2%	321	1%
	Non-minority	285	6%	1,620	22%	207	4%	638	15%	827	17%	164	18%	3,741	13%
	Race/ethnicity not reported	58	1%	479	6%	13	0%	191	4%	76	2%	14	2%	831	3%
	Total	4,633	100%	7,427	100%	5,786	100%	4,303	100%	4,747	100%	888	100%	27,784	100%
Class level at program entry	Freshman	2,254	49%	3,843	52%	2,447	42%	1,073	25%	930	20%	124	14%	10,671	38%
	Sophomore	881	19%	1,579	21%	1,259	22%	722	17%	696	15%	109	12%	5,246	19%
	Junior	327	7%	979	13%	867	15%	1,067	25%	1,144	24%	203	23%	4,587	17%
	Senior	500	11%	804	11%	1,140	20%	1,441	33%	1,977	42%	452	51%	6,314	23%
	Unknown	671	14%	222	3%	73	1%	0	0%	0	0%	0	0%	966	3%
	Total	4,633	100%	7,427	100%	5,786	100%	4,303	100%	4,747	100%	888	100%	27,784	100%
Division at program entry	Lower	3,135	68%	5,422	73%	3,706	64%	1,795	42%	1,626	34%	233	26%	15,917	57%
	Upper	827	18%	1,783	24%	2,007	35%	2,508	58%	3,121	66%	655	74%	10,901	39%
	Unknown	671	14%	222	3%	73	1%	0	0%	0	0%	0	0%	966	3%
	Total	4,633	100%	7,427	100%	5,786	100%	4,303	100%	4,747	100%	888	100%	27,784	100%
Discipline during most recent year of partic- ipation	Agriculture	4	0%	22	0%	25	0%	46	1%	50	1%	24	3%	171	1%
	Architecture	0	0%	0	0%	0	0%	1	0%	16	0%	2	0%	19	0%
	Biological Sciences	1,207	26%	2,334	31%	1,618	28%	1,454	34%	1,673	35%	317	36%	8,602	31%
	Business and Management	0	0%	0	0%	1	0%	3	0%	2	0%	1	0%	7	0%
	Computer Science	597	13%	996	13%	457	8%	245	6%	345	7%	59	7%	2,699	10%
	Engineering	1,707	37%	2,229	30%	1,996	34%	1,346	31%	1,386	29%	220	25%	8,885	32%
	Engineering Technologies	0	0%	0	0%	2	0%	13	0%	56	1%	3	0%	74	0%
	Interdisciplinary Studies	0	0%	1	0%	0	0%	0	0%	4	0%	0	0%	5	0%
	Mathematics	391	8%	506	7%	768	13%	371	9%	321	7%	64	7%	2,420	9%
	Natural Resources and Conserv.	9	0%	99	1%	182	3%	124	3%	90	2%	26	3%	531	2%
	Physical Sciences	352	8%	573	8%	687	12%	665	15%	753	16%	171	19%	3,201	12%
	Non-STEM, undeclared	366	8%	667	9%	50	1%	35	1%	51	1%	1	0%	1,170	4%
	Total	4,633	100%	7,427	100%	5,786	100%	4,303	100%	4,747	100%	888	100%	27,784	100%

Appendix Table 5 (continued): Participant Characteristics by Entry Phase, 1994-2019

		Phase I 1994-1998		Phase II 1999-2003		Phase III 2004-2008		Senior Level I 2009-2013		Senior Level II 2014-2018		SPaRA 2019		Total	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%
Campus during most recent year of partic- ipation	Bakersfield	248	5%	178	2%	144	2%	83	2%	131	3%	29	3%	813	3%
	Channel Islands	0	0%	0	0%	0	0%	61	1%	68	1%	17	2%	146	1%
	Chico	97	2%	918	12%	176	3%	131	3%	243	5%	38	4%	1,603	6%
	Dominguez Hills	243	5%	1,120	15%	497	9%	236	5%	240	5%	55	6%	2,391	9%
	East Bay	111	2%	48	1%	59	1%	49	1%	67	1%	13	1%	347	1%
	Fresno	283	6%	439	6%	295	5%	241	6%	312	7%	110	12%	1,680	6%
	Fullerton	149	3%	102	1%	126	2%	156	4%	148	3%	24	3%	705	3%
	Humboldt	146	3%	584	8%	321	6%	307	7%	219	5%	27	3%	1,604	6%
	Long Beach	375	8%	301	4%	178	3%	100	2%	95	2%	27	3%	1,076	4%
	Los Angeles	688	15%	1,230	17%	850	15%	645	15%	521	11%	65	7%	3,999	14%
	Maritime Academy	0	0%	0	0%	0	0%	1	0%	74	2%	14	2%	89	0%
	Monterey Bay	0	0%	2	0%	373	6%	76	2%	145	3%	27	3%	623	2%
	Northridge	374	8%	411	6%	496	9%	314	7%	349	7%	26	3%	1,970	7%
	Pomona	472	10%	569	8%	586	10%	347	8%	261	5%	115	13%	2,350	8%
	Sacramento	159	3%	139	2%	240	4%	220	5%	170	4%	28	3%	956	3%
	San Bernardino	164	4%	118	2%	286	5%	203	5%	189	4%	33	4%	993	4%
	San Diego	212	5%	205	3%	129	2%	164	4%	175	4%	20	2%	905	3%
	San Francisco	215	5%	202	3%	206	4%	173	4%	154	3%	9	1%	959	3%
	San Jose	452	10%	606	8%	373	6%	279	6%	331	7%	26	3%	2,068	7%
	San Luis Obispo	0	0%	0	0%	1	0%	207	5%	342	7%	95	11%	645	2%
	San Marcos	0	0%	0	0%	0	0%	139	3%	276	6%	33	4%	448	2%
	Sonoma	104	2%	103	1%	237	4%	104	2%	106	2%	19	2%	672	2%
	Stanislaus	141	3%	152	2%	213	4%	67	2%	131	3%	38	4%	742	3%
Total		4,633	100%	7,427	100%	5,786	100%	4,303	100%	4,747	100%	888	100%	27,784	100%

Source: Longitudinal participant database constructed from WebAMP records.

Appendix Table 6: Annual Number of CSU-LSAMP Participants, 1994-2019

		Number
Phase I	1993-1994	641
	1994-1995	924
	1995-1996	1411
	1996-1997	1415
	1997-1998	2,091
Phase II	1998-1999	1,708
	1999-2000	1,937
	2000-2001	2,333
	2001-2002	2,436
	2002-2003	2,751
Phase III	2003-2004	3,418
	2004-2005	3,476
	2005-2006	2,959
	2006-2007	3,025
	2007-2008	3,070
Senior Level I	2008-2009	2,838
	2009-2010	2,947
	2010-2011	2,908
	2011-2012	2,290
	2012-2013	3,272
Senior Level II	2013-2014	3,520
	2014-2015	3,474
	2015-2016	3,227
	2016-2017	3,049
	2017-2018	2,997
SPaRA	2018-2019	2,828

Data source: WebAMP ExACT Reports.

Appendix Table 7: CSU Undergraduate Enrollment for All CSU Campuses by URM and STEM Categories, Fall 1994-Fall 2018

		STEM					Non-STEM					Total				
		URM	Non-URM and not reported			Total	URM	Non-URM and not reported			Total	URM	Non-URM and not reported			Total
			Non-URM	Not reported	Subtotal			Non-URM	Not reported	Subtotal			Non-URM	Not reported	Subtotal	
Phase I	Fall 1994	10,580	39,783	3,370	43,153	53,733	54,293	131,689	14,178	145,867	200,160	64,873	171,472	17,548	189,020	253,893
	Fall 1995	11,637	37,269	3,622	40,891	52,528	59,392	129,989	15,047	145,036	204,428	71,029	167,258	18,669	185,927	256,956
	Fall 1996	12,337	36,222	5,720	41,942	54,279	63,306	124,423	22,776	147,199	210,505	75,643	160,645	28,496	189,141	264,784
	Fall 1997	13,028	39,805	4,448	44,253	57,281	64,856	127,819	17,918	145,737	210,593	77,884	167,624	22,366	189,990	267,874
Phase II	Fall 1998	13,000	41,100	4,772	45,872	58,872	65,328	126,688	19,362	146,050	211,378	78,328	167,788	24,134	191,922	270,250
	Fall 1999	13,232	39,527	7,612	47,139	60,371	66,467	121,144	27,571	148,715	215,182	79,699	160,671	35,183	195,854	275,553
	Fall 2000	13,264	39,623	7,765	47,388	60,652	67,876	123,416	29,268	152,684	220,560	81,140	163,039	37,033	200,072	281,212
	Fall 2001	13,968	40,716	8,231	48,947	62,915	72,268	129,057	32,052	161,109	233,377	86,236	169,773	40,283	210,056	296,292
	Fall 2002	13,989	40,112	8,466	48,578	62,567	74,775	133,075	35,161	168,236	243,011	88,764	173,187	43,627	216,814	305,578
Phase III	Fall 2003	13,962	38,149	8,260	46,409	60,371	76,958	134,764	36,404	171,168	248,126	90,920	172,913	44,664	217,577	308,497
	Fall 2004	14,328	37,490	7,782	45,272	59,600	79,312	136,663	33,827	170,490	249,802	93,640	174,153	41,609	215,762	309,402
	Fall 2005	15,168	37,395	7,358	44,753	59,921	84,820	142,247	32,931	175,178	259,998	99,988	179,642	40,289	219,931	319,919
	Fall 2006	16,084	38,254	7,224	45,478	61,562	90,984	147,721	31,991	179,712	270,696	107,068	185,975	39,215	225,190	332,258
	Fall 2007	17,428	39,651	7,367	47,018	64,446	96,168	152,109	33,014	185,123	281,291	113,596	191,760	40,381	232,141	345,737
Senior I	Fall 2008	18,542	40,488	7,160	47,648	66,190	99,417	151,179	32,471	183,650	283,067	117,959	191,667	39,631	231,298	349,257
	Fall 2009	19,578	41,003	7,794	48,797	68,375	101,461	144,963	32,375	177,338	278,799	121,039	185,966	40,169	226,135	347,174
	Fall 2010	22,081	41,408	5,889	47,297	69,378	105,528	136,052	23,794	159,846	265,374	127,609	177,460	29,683	207,143	334,752
	Fall 2011	25,404	44,831	5,484	50,315	75,719	116,858	138,739	21,527	160,266	277,124	142,262	183,570	27,011	210,581	352,843
	Fall 2012	28,971	46,883	5,063	51,946	80,917	125,741	138,980	18,797	157,777	283,518	154,712	185,863	23,860	209,723	364,435
Senior II	Fall 2013	32,602	49,050	4,886	53,936	86,538	134,564	135,848	16,929	152,777	287,341	167,166	184,898	21,815	206,713	373,879
	Fall 2014	35,125	48,778	4,905	53,683	88,808	143,204	134,828	16,743	151,571	294,775	178,329	183,606	21,648	205,254	383,583
	Fall 2015	38,343	50,707	4,580	55,287	93,630	153,911	132,782	15,334	148,116	302,027	192,254	183,489	19,914	203,403	395,657
	Fall 2016	40,026	50,312	4,496	54,808	94,834	160,623	128,991	14,491	143,482	304,105	200,649	179,303	18,987	198,290	398,939
	Fall 2017	42,703	50,519	4,563	55,082	97,785	166,669	125,564	14,159	139,723	306,392	209,372	176,083	18,722	194,805	404,177
SPaRA	Fall 2018	44,893	51,444	4,674	56,118	101,011	167,937	120,474	13,533	134,007	301,944	212,830	171,918	18,207	190,125	402,955
Total		540,273	1,060,519	151,491	1,212,010	1,752,283	2,492,716	3,349,204	601,653	3,950,857	6,443,573	3,032,989	4,409,723	753,144	5,162,867	8,195,856

Appendix Table 7 (continued): CSU Undergraduate Enrollment for All CSU Campuses by URM and STEM Categories, Fall 1994-Fall 2018

		STEM					Non-STEM					Total				
		URM	Non-URM and not reported			Total	URM	Non-URM and not reported			Total	URM	Non-URM and not reported			Total
			Non-URM	Not reported	Subtotal			Non-URM	Not reported	Subtotal			Non-URM	Not reported	Subtotal	
Percent change	Phase I	23%	0%	32%	3%	7%	19%	-3%	26%	0%	5%	20%	-2%	27%	1%	6%
	Phase II	8%	-2%	77%	6%	6%	14%	5%	82%	15%	15%	13%	3%	81%	13%	13%
	Phase III	25%	4%	-11%	1%	7%	25%	13%	-9%	8%	13%	25%	11%	-10%	7%	12%
	Senior Level I	89%	16%	-29%	9%	22%	26%	-8%	-42%	-14%	0%	31%	-3%	-40%	-9%	4%
	SPaRA	38%	5%	-4%	4%	17%	25%	-11%	-20%	-12%	5%	27%	-7%	-17%	-8%	8%
Percent change from the second year of Phase I to the first year of the SPaRA		324%	29%	39%	30%	88%	209%	-9%	-5%	-8%	51%	228%	0%	4%	1%	59%

Data sources: CSU Analytic Studies Division ERS enrollment files, WebAMP Reverse Site Reports, and WebAMP ExACT Reports. Enrollment data for fall 1993 (the first year of the Alliance) is not currently available.

Note: Excludes International Program and non-resident alien enrollment. The percent change for each phase reflects changes from the first to last year of each phase.

Appendix Table 8: Annual Number of Baccalaureate Degrees Awarded by URM and STEM Categories, All CSU Campuses 1993-1994 through 2018-2019

		STEM				Non-STEM				Total					
		Non-URM and not reported				Non-URM and not reported				Non-URM and not reported					
		URM	Non-URM	Not reported	Subtotal	Total	URM	Non-URM	Not reported	Subtotal	Total	URM	Non-URM	Not reported	Total
Phase I	1993-1994	917	6,359	528	6,887	7,804	8,190	34,494	2,983	37,477	45,667	9,107	40,853	3,511	53,471
	1994-1995	996	6,279	550	6,829	7,825	8,771	32,091	2,976	35,067	43,838	9,767	38,370	3,526	51,663
	1995-1996	1,100	5,921	844	6,765	7,865	9,427	29,389	4,361	33,750	43,177	10,527	35,310	5,205	51,042
	1996-1997	1,224	5,719	853	6,572	7,796	10,111	28,025	4,496	32,521	42,632	11,335	33,744	5,349	50,428
	1997-1998	1,379	5,993	959	6,952	8,331	10,720	27,815	4,673	32,488	43,208	12,099	33,808	5,632	51,539
Phase II	1998-1999	1,473	5,852	969	6,821	8,294	11,505	27,877	5,219	33,096	44,601	12,978	33,729	6,188	52,895
	1999-2000	1,443	5,721	1,018	6,739	8,182	12,350	27,755	5,312	33,067	45,417	13,793	33,476	6,330	53,599
	2000-2001	1,375	5,478	988	6,466	7,841	12,510	28,512	5,929	34,441	46,951	13,885	33,990	6,917	54,792
	2001-2002	1,485	5,826	1,164	6,990	8,475	14,080	29,882	6,631	36,513	50,593	15,565	35,708	7,795	59,068
	2002-2003	1,501	5,793	1,245	7,038	8,539	14,137	29,041	7,295	36,336	50,473	15,638	34,834	8,540	59,012
Phase III	2003-2004	1,505	5,717	1,417	7,134	8,639	14,769	31,427	8,179	39,606	54,375	16,274	37,144	9,596	63,014
	2004-2005	1,562	5,845	1,399	7,244	8,806	15,488	31,530	8,243	39,773	55,261	17,050	37,375	9,642	64,067
	2005-2006	1,732	6,211	1,345	7,556	9,288	16,366	32,714	8,137	40,851	57,217	18,098	38,925	9,482	66,505
	2006-2007	1,654	6,068	1,372	7,440	9,094	17,189	33,626	8,032	41,658	58,847	18,843	39,694	9,404	67,941
	2007-2008	1,874	6,504	1,271	7,775	9,649	18,510	35,410	7,625	43,035	61,545	20,384	41,914	8,896	71,194
Senior Level I	2008-2009	1,904	6,300	1,374	7,674	9,578	18,402	35,983	8,159	44,142	62,544	20,306	42,283	9,533	72,122
	2009-2010	1,849	5,948	2,039	7,987	9,836	17,759	34,102	11,219	45,321	63,080	19,608	40,050	13,258	72,916
	2010-2011	1,998	5,398	2,477	7,875	9,873	20,732	35,174	9,121	44,295	65,027	22,730	40,572	11,598	74,900
	2011-2012	2,426	6,837	1,379	8,216	10,642	21,723	34,121	7,079	41,200	62,923	24,149	40,958	8,458	73,565
	2012-2013	2,865	7,549	1,282	8,831	11,696	24,786	36,008	6,294	42,302	67,088	27,651	43,557	7,576	78,784
Senior Level II	2013-2014	3,455	8,157	1,204	9,361	12,816	27,340	36,066	5,665	41,731	69,071	30,795	44,223	6,869	81,887
	2014-2015	3,834	8,429	1,089	9,518	13,352	28,914	36,022	5,325	41,347	70,261	32,748	44,451	6,414	83,613
	2015-2016	4,532	8,881	969	9,850	14,382	32,647	36,538	4,692	41,230	73,877	37,179	45,419	5,661	88,259
	2016-2017	5,380	9,704	1,001	10,705	16,085	36,482	37,054	4,677	41,731	78,213	41,862	46,758	5,678	94,298
	2017-2018	6,311	10,764	1,042	11,806	18,117	39,904	37,645	4,564	42,209	82,113	46,215	48,409	5,608	100,230
SPaRA	2018-2019	6,963	10,871	1,057	11,928	18,891	41,783	36,417	4,617	41,034	82,817	48,746	47,288	5,674	101,708
Total		62,737	178,124	30,835	208,959	271,696	504,595	854,718	161,503	1,016,221	1,520,816	567,332	1,032,842	192,340	1,792,512

Appendix Table 8 (continued): Annual Number of Baccalaureate Degrees Awarded by URM and STEM Categories, All CSU Campuses 1993-1994 through 2017-2018

		STEM					Non-STEM					Total				
		URM	Non-URM and not reported			Total	URM	Non-URM and not reported			Total	URM	Non-URM and not reported			Total
			Non-URM	Not reported	Subtotal			Non-URM	Not reported	Subtotal			Non-URM	Not reported	Subtotal	
Percent change	Phase I	50%	-6%	82%	1%	7%	31%	-19%	57%	-13%	-5%	33%	-17%	60%	-11%	-4%
	Phase II	2%	-1%	28%	3%	3%	23%	4%	40%	10%	13%	20%	3%	38%	9%	12%
	Phase III	25%	14%	-10%	9%	12%	25%	13%	-7%	9%	13%	25%	13%	-7%	9%	13%
	Senior Level I	50%	20%	-7%	15%	22%	35%	0%	-23%	-4%	7%	36%	3%	-21%	-1%	9%
	SPaRA	102%	33%	-12%	27%	47%	53%	1%	-18%	-2%	20%	58%	7%	-17%	4%	24%
Percent change from the first year of Phase I to the first year of the SPaRA		588%	659%	71%	100%	73%	142%	410%	6%	55%	9%	81%	435%	16%	62%	19%

Data sources: CSU Analytic Studies Division ERS degree files, WebAMP Reverse Site Reports, and WebAMP ExACT Reports.

Note: Excludes International Program and non-resident alien enrollment. The percent change for each phase reflects changes from the first to last year of each phase.

Appendix Table 9: STEM Discipline Persistence Rates for CSU-LSAMP Participant Cohorts, Non-LSAMP, and Benchmark Cohorts (1996-2017)

Cohort	Number matriculating	Number continuing or graduating in STEM major after:							STEM discipline persistence rate after:						
		1 yr	2 yr	4 yrs	5 yrs	6 yrs	7 yrs		1 yr	2 yr	4 yrs	5 yrs	6 yrs	7 yrs	
Latino/Latina CSU-LSAMP participants	1996	279	243	199	131	120	103	58	.871	.713	.470	.430	.369	.208	
	1997	274	243	203	139	124	30	30	.887	.741	.507	.453	.109	.109	
	1998	272	241	181	142	128	108	95	.886	.665	.522	.471	.397	.349	
	1999	330	280	241	178	158	145	131	.848	.730	.539	.479	.439	.397	
	2000	283	236	199	136	126	119	113	.834	.703	.481	.445	.420	.399	
	2001	284	241	203	142	128	112	100	.849	.715	.500	.451	.394	.352	
	2002	292	254	209	147	129	117	109	.870	.716	.503	.442	.401	.373	
	2003	322	261	195	148	141	130	124	.811	.606	.460	.438	.404	.385	
	2004	271	242	213	157	144	136	131	.893	.786	.579	.531	.502	.483	
	2005	272	222	186	132	120	110	109	.816	.684	.485	.441	.404	.401	
	2006	286	245	203	163	147	136	108	.857	.710	.570	.514	.476	.378	
	2007	277	230	196	157	148	61	61	.830	.708	.567	.534	.220	.220	
	2008	304	275	243	202	180	183	182	.905	.799	.664	.592	.602	.599	
	2009	302	270	245	220	202	193	188	.894	.811	.728	.669	.639	.623	
	2010	236	215	198	170	160	152	149	.911	.839	.720	.678	.644	.631	
	2011	214	193	171	142	134	128	124	.902	.799	.664	.626	.598	.579	
	2012	259	233	218	193	182	179	171	.900	.842	.745	.703	.691	--	
	2013	262	252	231	210	204	--	--	.962	.882	.802	.779	--	--	
	2014	230	203	182	161	--	--	--	.883	.791	.700	--	--	--	
	2015	206	189	181	--	--	--	--	.917	.879	--	--	--	--	
	2016	151	139	124	--	--	--	--	.921	.821	--	--	--	--	
	2017	122	105	--	--	--	--	--	.861	--	--	--	--	--	
Non-CSU-LSAMP participants (estimated) †	1996	790	502	323	199	165	155	--	.635	.409	.252	.209	.196	--	
	1997	841	561	356	213	169	236	--	.667	.423	.253	.201	.281	--	
	1998	874	540	372	272	213	197	--	.618	.426	.311	.244	.225	--	
	1999	974	580	385	232	209	192	--	.595	.395	.238	.215	.197	--	
	2000	996	631	445	281	246	229	217	.634	.447	.282	.247	.230	.218	
	2001	1,090	652	438	248	191	186	187	.598	.402	.228	.175	.171	.172	
	2002	1,011	618	426	236	200	179	181	.611	.421	.233	.198	.177	.179	
	2003	1,185	764	528	305	261	246	243	.645	.446	.257	.220	.208	.205	
	2004	1,331	880	594	348	297	280	279	.661	.446	.261	.223	.210	.210	
	2005	1,628	1,028	704	442	412	388	368	.631	.432	.271	.253	.238	.226	
	2006	1,822	1,167	800	533	482	449	471	.641	.439	.293	.265	.246	.259	
	2007	2,126	1,349	912	586	523	572	564	.635	.429	.276	.246	.269	.265	
	2008	2,766	1,766	1,333	922	817	767	761	.638	.482	.333	.295	.277	.275	
	2009	3,097	2,173	1,610	1,124	1,004	974	965	.702	.520	.363	.324	.314	.312	
	2010	3,539	2,488	1,853	1,313	1,178	1,130	1,131	.703	.524	.371	.333	.319	.320	
	2011	4,441	3,149	2,282	1,650	1,514	1,445	1,435	.709	.514	.372	.341	.325	.323	
	2012	5,178	3,671	2,702	1,938	1,819	1,697	--	.709	.522	.374	.351	.328	--	
	2013	5,999	4,262	3,119	2,338	2,075	--	--	.710	.520	.390	.346	--	--	
	2014	6,331	4,196	3,368	2,503	--	--	--	.663	.532	.395	--	--	--	
	2015	6,790	4,308	3,527	--	--	--	--	.634	.519	--	--	--	--	
	2016	6,660	4,371	3,581	--	--	--	--	.656	.538	--	--	--	--	
	2017	7,648	4,890	--	--	--	--	--	.639	--	--	--	--	--	

Appendix Table 9 (continued): STEM Discipline Persistence Rates for CSU-LSAMP Participant Cohorts, Non-LSAMP, and Benchmark Cohorts (1996-2017)

Cohort	Number matriculating	Number continuing or graduating in STEM major after:							STEM discipline persistence rate after:						
		1 yr	2 yr	4 yrs	5 yrs	6 yrs	7 yrs		1 yr	2 yr	4 yrs	5 yrs	6 yrs	7 yrs	
Latino/Latina Benchmark	1996	1,069	745	522	330	285	258	--	.697	.488	.309	.267	.241	--	
	1997	1,115	804	559	352	293	266	--	.721	.501	.316	.263	.239	--	
	1998	1,146	781	553	414	341	305	--	.682	.483	.361	.298	.266	--	
	1999	1,304	860	626	410	367	337	--	.660	.480	.314	.281	.258	--	
	2000	1,279	867	644	417	372	348	330	.678	.504	.326	.291	.272	.258	
	2001	1,374	893	641	390	319	298	287	.650	.467	.284	.232	.217	.209	
	2002	1,303	872	635	383	329	296	290	.669	.487	.294	.252	.227	.223	
	2003	1,507	1,025	723	453	402	376	367	.680	.480	.301	.267	.250	.244	
	2004	1,602	1,122	807	505	441	416	410	.700	.504	.315	.275	.260	.256	
	2005	1,900	1,250	890	574	532	498	477	.658	.468	.302	.280	.262	.251	
	2006	2,108	1,412	1,003	696	629	585	579	.670	.476	.330	.298	.278	.275	
	2007	2,403	1,579	1,108	743	671	633	625	.657	.461	.309	.279	.263	.260	
	2008	3,070	2,041	1,576	1,124	997	950	943	.665	.513	.366	.325	.309	.307	
	2009	3,399	2,443	1,855	1,344	1,206	1,167	1,153	.719	.546	.395	.355	.343	.339	
	2010	3,775	2,703	2,051	1,483	1,338	1,282	1,280	.716	.543	.393	.354	.340	.339	
	2011	4,655	3,342	2,453	1,792	1,648	1,573	1,559	.718	.527	.385	.354	.338	.335	
	2012	5,437	3,904	2,920	2,131	2,001	1,876	--	.718	.537	.392	.368	.345	--	
	2013	6,261	4,514	3,350	2,548	2,279	--	--	.721	.535	.407	.364	--	--	
	2014	6,561	4,698	3,550	2,664	--	--	--	.716	.541	.406	--	--	--	
	2015	6,996	4,869	3,708	--	--	--	--	.696	.530	--	--	--	--	
	2016	6,811	4,911	3,705	--	--	--	--	.721	.544	--	--	--	--	
	2017	7,770	5,470	--	--	--	--	--	.704	--	--	--	--	--	

* Note: STEM discipline persistence rates reflect the percent of a cohort remaining or graduating in a STEM major.

† We estimated the number of non-LSAMP participants by subtracting the number of students in the LSAMP participant cohort from the number of students in the corresponding benchmark cohort.

‡ We obtained benchmark cohort information from the California State University Data for the Consortium for Student Retention Data Exchange (CSRDE). Benchmark cohorts for 1996-2007 include all students in the specified category at the 19 CSU campuses participating in Phase III of the CSU-LSAMP program. The 2008-2012 benchmark cohorts include students at the 22 CSU campuses participating in Senior Level I CSU-LSAMP. Seventh-year persistence data is not available for 1996-1999 benchmark cohorts.

Appendix Table 9 (continued): STEM Discipline Persistence Rates for CSU-LSAMP Participant Cohorts, Non-LSAMP, and Benchmark Cohorts (1996-2017)

Cohort	Number matriculating	Number continuing or graduating in STEM major after:							STEM discipline persistence rate after:						
		1 yr	2 yr	4 yrs	5 yrs	6 yrs	7 yrs		1 yr	2 yr	4 yrs	5 yrs	6 yrs	7 yrs	
African American CSU-LSAMP participants	1996	67	57	40	19	14	12	2	.851	.597	.284	.209	.179	.030	
	1997	79	68	58	24	19	4	4	.861	.734	.304	.241	.051	.051	
	1998	84	63	47	28	25	22	22	.750	.560	.333	.298	.262	.262	
	1999	98	84	67	50	42	38	36	.857	.684	.510	.429	.388	.367	
	2000	72	60	49	26	21	19	19	.833	.681	.361	.292	.264	.264	
	2001	78	59	42	29	24	22	18	.756	.538	.372	.308	.282	.231	
	2002	89	69	56	36	31	24	22	.775	.629	.404	.348	.270	.247	
	2003	76	60	42	25	22	19	19	.789	.553	.329	.289	.250	.250	
	2004	68	58	42	31	27	24	22	.853	.618	.456	.397	.353	.324	
	2005	82	70	48	37	27	26	23	.854	.585	.451	.329	.317	.280	
	2006	73	60	47	32	30	26	17	.822	.644	.438	.411	.356	.233	
	2007	55	46	40	30	25	5	5	.836	.727	.545	.455	.091	.091	
	2008	55	45	39	25	22	22	21	.818	.709	.455	.400	.400	.382	
	2009	68	56	49	35	34	31	31	.824	.721	.515	.500	.456	.456	
	2010	49	44	38	32	30	27	26	.898	.776	.653	.612	.551	.531	
	2011	55	45	39	36	36	36	36	.818	.709	.655	.655	.655	.655	
	2012	57	54	52	46	43	41	--	.947	.912	.807	.754	.719	--	
	2013	61	53	51	45	39	--	--	.869	.836	.738	.639	--	--	
	2014	33	30	26	22	--	--	--	.909	.788	.667	--	--	--	
	2015	32	30	26	--	--	--	--	.938	.813	--	--	--	--	
	2016	24	22	16	--	--	--	--	.917	.667	--	--	--	--	
	2017	23	21	--	--	--	--	--	.913	--	--	--	--	--	
Non-CSU-LSAMP participants (estimated) †	1996	325	207	117	53	48	44	--	.637	.360	.163	.148	.135	--	
	1997	314	178	119	44	30	38	--	.567	.379	.140	.096	.121	--	
	1998	291	170	112	58	49	46	--	.584	.385	.199	.168	.158	--	
	1999	291	169	111	57	46	36	--	.581	.381	.196	.158	.124	--	
	2000	314	183	108	54	41	35	37	.583	.344	.172	.131	.111	.118	
	2001	332	166	111	57	44	41	35	.500	.334	.172	.133	.123	.105	
	2002	301	169	107	63	51	47	48	.561	.355	.209	.169	.156	.159	
	2003	318	175	107	56	44	44	39	.550	.336	.176	.138	.138	.123	
	2004	344	211	147	72	59	55	45	.613	.427	.209	.172	.160	.131	
	2005	447	273	171	85	81	66	58	.611	.383	.190	.181	.148	.130	
	2006	455	262	169	97	77	70	74	.576	.371	.213	.169	.154	.163	
	2007	491	279	170	78	60	73	73	.568	.346	.159	.122	.149	.149	
	2008	550	311	215	121	97	91	86	.565	.391	.220	.176	.165	.156	
	2009	428	276	183	99	81	73	63	.645	.428	.231	.189	.171	.147	
	2010	420	257	180	107	89	86	80	.612	.429	.255	.212	.205	.190	
	2011	407	253	160	85	74	67	63	.622	.393	.209	.182	.165	.154	
	2012	496	309	217	140	134	119	--	.623	.437	.282	.270	.240	--	
	2013	561	365	248	168	147	--	--	.651	.442	.299	.262	--	--	
	2014	501	329	250	172	--	--	--	.656	.499	.343	--	--	--	
	2015	586	398	294	--	--	--	--	.680	.502	--	--	--	--	
	2016	525	339	237	--	--	--	--	.646	.452	--	--	--	--	
	2017	557	353	--	--	--	--	--	.634	--	--	--	--	--	

Appendix Table 9 (continued): STEM Discipline Persistence Rates for CSU-LSAMP Participant Cohorts, Non-LSAMP, and Benchmark Cohorts (1996-2017)

	Cohort	Number matriculating	Number continuing or graduating in STEM major after:							STEM discipline persistence rate after:						
			1 yr	2 yr	4 yrs	5 yrs	6 yrs	7 yrs		1 yr	2 yr	4 yrs	5 yrs	6 yrs	7 yrs	
African American	Benchmark	1996	392	264	157	72	62	56	--	.673	.401	.184	.158	.143	--	
		1997	393	246	177	68	49	42	--	.626	.450	.173	.125	.107	--	
		1998	375	233	159	86	74	68	--	.621	.424	.229	.197	.181	--	
		1999	389	253	178	107	88	74	--	.650	.458	.275	.226	.190	--	
		2000	386	243	157	80	62	54	56	.630	.407	.207	.161	.140	.145	
		2001	410	225	153	86	68	63	53	.549	.373	.210	.166	.154	.129	
		2002	390	238	163	99	82	71	70	.610	.418	.254	.210	.182	.179	
		2003	394	235	149	81	66	63	58	.596	.378	.206	.168	.160	.147	
		2004	412	269	189	103	86	79	67	.653	.459	.250	.209	.192	.163	
		2005	529	343	219	122	108	92	81	.648	.414	.231	.204	.174	.153	
		2006	528	322	216	129	107	96	91	.610	.409	.244	.203	.182	.172	
		2007	546	325	210	108	85	78	78	.595	.385	.198	.156	.143	.143	
		2008	605	356	254	146	119	113	107	.588	.420	.241	.197	.187	.177	
		2009	496	332	232	134	115	104	94	.669	.468	.270	.232	.210	.190	
		2010	469	301	218	139	119	113	106	.642	.465	.296	.254	.241	.226	
		2011	462	298	199	121	110	103	99	.645	.431	.262	.238	.223	.214	
		2012	553	363	269	186	177	160	--	.656	.486	.336	.320	.289	--	
		2013	622	418	299	213	186	--	--	.672	.481	.342	.299	--	--	
		2014	534	359	276	194	--	--	--	.672	.517	.363	--	--	--	
		2015	618	428	320	--	--	--	--	.693	.518	--	--	--	--	
		2016	549	361	253	--	--	--	--	.658	.461	--	--	--	--	
		2017	580	374	--	--	--	--	--	.645	--	--	--	--	--	

Appendix Table 9 (continued): STEM Discipline Persistence Rates for CSU-LSAMP Participant Cohorts, Non-LSAMP, and Benchmark Cohorts (1996-2017)

			Number matric- ulating	Number continuing or graduating in STEM major after:							STEM discipline persistence rate after:						
				1 yr	2 yr	4 yrs	5 yrs	6 yrs	7 yrs	1 yr	2 yr	4 yrs	5 yrs	6 yrs	7 yrs		
Non-URM benchmark†	Asian or Pacific Islander	1996	1,340	1,010	769	528	451	401	--	.754	.574	.394	.337	.299	--		
		1997	1,669	1,271	925	623	507	453	--	.762	.554	.373	.304	.271	--		
		1998	1,832	1,380	1,018	728	596	526	--	.753	.556	.397	.325	.287	--		
		1999	2,059	1,482	1,123	833	680	603	--	.720	.545	.405	.330	.293	--		
		2000	2,146	1,514	1,181	760	670	620	606	.705	.550	.354	.312	.289	.282		
		2001	2,165	1,527	1,143	750	636	589	574	.705	.528	.346	.294	.272	.265		
		2002	1,805	1,319	976	679	613	570	552	.731	.541	.376	.340	.316	.306		
		2003	1,679	1,175	864	587	530	500	488	.700	.515	.350	.316	.298	.291		
		2004	1,704	1,259	937	674	614	588	586	.739	.550	.396	.360	.345	.344		
		2005	1,894	1,382	1,054	772	702	664	652	.730	.556	.408	.371	.351	.344		
		2006	1,913	1,365	1,050	770	689	661	657	.714	.549	.403	.360	.346	.343		
		2007	2,006	1,466	1,152	898	823	783	779	.731	.574	.448	.410	.390	.388		
		2008	2,434	1,790	1,461	1,171	1,082	1,024	1,023	.735	.600	.481	.445	.421	.420		
		2009	2,257	1,788	1,493	1,172	1,074	1,048	1,047	.792	.661	.519	.476	.464	.464		
		2010	2,390	1,897	1,530	1,217	1,139	1,096	1,087	.794	.640	.509	.477	.459	.455		
		2011	3,001	2,434	1,939	1,594	1,497	1,455	1,440	.811	.646	.531	.499	.485	.480		
		2012	3,000	2,409	1,980	1,623	1,527	1,479	--	.803	.660	.541	.509	.493	--		
		2013	3,379	2,720	2,206	1,858	1,713	--	--	.805	.653	.550	.507	--	--		
		2014	3,457	2,804	2,306	1,946	--	--	--	.811	.667	.563	--	--	--		
		2015	3,502	2,872	2,437	--	--	--	--	.820	.696	--	--	--	--		
		2016	3,130	2,542	2,147	--	--	--	--	.812	.686	--	--	--	--		
		2017	3,541	2,854	--	--	--	--	--	.806	--	--	--	--	--		
White		1996	1,452	1,008	675	470	415	384	--	.694	.465	.324	.286	.264	--		
		1997	1,595	1,075	733	526	477	443	--	.674	.460	.330	.299	.278	--		
		1998	1,722	1,150	790	560	517	479	--	.668	.459	.325	.300	.278	--		
		1999	1,934	1,261	870	646	582	547	--	.652	.450	.334	.301	.283	--		
		2000	1,855	1,244	894	626	556	545	532	.671	.482	.337	.300	.294	.287		
		2001	1,976	1,353	973	695	645	602	586	.685	.492	.352	.326	.305	.297		
		2002	1,920	1,346	993	727	672	638	635	.701	.517	.379	.350	.332	.331		
		2003	2,197	1,514	1,058	794	733	724	716	.689	.482	.361	.334	.330	.326		
		2004	2,120	1,501	1,090	829	775	755	747	.708	.514	.391	.366	.356	.352		
		2005	2,187	1,524	1,116	840	802	779	770	.697	.510	.384	.367	.356	.352		
		2006	2,370	1,608	1,172	891	843	823	827	.678	.495	.376	.356	.347	.349		
		2007	2,566	1,776	1,350	1,063	999	973	974	.692	.526	.414	.389	.379	.380		
		2008	4,157	3,113	2,491	2,080	1,966	1,943	1,957	.749	.599	.500	.473	.467	.471		
		2009	3,992	3,109	2,552	2,142	2,036	2,019	2,023	.779	.639	.537	.510	.506	.507		
		2010	3,800	2,985	2,427	2,101	2,010	2,017	2,006	.786	.639	.553	.529	.531	.528		
		2011	4,242	3,377	2,787	2,418	2,350	2,363	2,376	.796	.657	.570	.554	.557	.560		
		2012	4,060	3,264	2,667	2,355	2,229	2,205	--	.804	.657	.580	.549	.543	--		
		2013	4,654	3,677	3,058	2,723	2,527	--	--	.790	.657	.585	.543	--	--		
		2014	4,522	3,645	3,021	2,587	--	--	--	.806	.668	.572	--	--	--		
		2015	4,379	3,565	2,995	--	--	--	--	.814	.684	--	--	--	--		
		2016	4,099	3,300	2,759	--	--	--	--	.805	.673	--	--	--	--		
		2017	4,317	3,454	--	--	--	--	--	.800	--	--	--	--	--		

Appendix Table 9 (continued): STEM Discipline Persistence Rates for CSU-LSAMP Participant Cohorts, Non-LSAMP, and Benchmark Cohorts (1996-2017)

	Cohort	Number matriculating	Number continuing or graduating in STEM major after:							STEM discipline persistence rate after:						
			1 yr	2 yr	4 yrs	5 yrs	6 yrs	7 yrs		1 yr	2 yr	4 yrs	5 yrs	6 yrs	7 yrs	
Overall	1996	4,865	3,454	2,453	1,624	1,413	1,278	--		.710	.504	.334	.290	.263	--	
	1997	5,484	3,899	2,748	1,810	1,533	1,395	--		.711	.501	.330	.280	.254	--	
	1998	5,940	4,144	2,948	2,097	1,790	1,628	--		.698	.496	.353	.301	.274	--	
	1999	6,606	4,484	3,266	2,317	1,998	1,822	--		.679	.494	.351	.302	.276	--	
	2000	6,576	4,507	3,365	2,221	1,951	1,852	1,805		.685	.512	.338	.297	.282	.274	
	2001	6,896	4,664	3,419	2,287	1,996	1,868	1,811		.676	.496	.332	.289	.271	.263	
	2002	6,330	4,395	3,232	2,230	2,000	1,873	1,837		.694	.511	.352	.316	.296	.290	
	2003	6,585	4,513	3,208	2,202	1,983	1,905	1,867		.685	.487	.334	.301	.289	.284	
	2004	6,628	4,732	3,456	2,430	2,213	2,128	2,099		.714	.521	.367	.334	.321	.317	
	2005	7,351	5,096	3,714	2,641	2,442	2,310	2,252		.693	.505	.359	.332	.314	.306	
	2006	7,823	5,355	3,928	2,845	2,608	2,493	2,490		.685	.502	.364	.333	.319	.318	
	2007	8,659	5,927	4,420	3,287	3,029	2,908	2,892		.684	.510	.380	.350	.336	.334	
	2008	11,551	8,252	6,519	5,117	4,710	4,565	4,559		.714	.564	.443	.408	.395	.395	
	2009	11,626	8,757	6,999	5,494	5,072	4,974	4,950		.753	.602	.473	.436	.428	.426	
	2010	11,836	8,951	7,074	5,610	5,249	5,126	5,106		.756	.598	.474	.443	.433	.431	
	2011	14,008	10,716	8,405	6,752	6,388	6,262	6,248		.765	.600	.482	.456	.447	.446	
	2012	14,893	11,348	8,936	7,193	6,791	6,553	--		.762	.600	.483	.456	.440	--	
	2013	17,258	13,116	10,389	8,560	7,818	--	--		.760	.602	.496	.453	--	--	
	2014	17,660	13,510	10,773	8,706	--	--	--		.765	.610	.493	--	--	--	
	2015	18,141	13,751	11,157	--	--	--	--		.758	.615	--	--	--	--	
	2016	17,170	13,101	10,439	--	--	--	--		.763	.608	--	--	--	--	
	2017	18,912	14,203	--	--	--	--	--		.751	--	--	--	--	--	

Appendix Table 10: Estimated Percent of Benchmark Cohort Students Participating in CSU-LSAMP Program, (1996-2017)

	Cohort	Number of Students			Percent Distribution		
		CSU-LSAMP Participants	Non-CSU-LSAMP Participants*	Total	CSU-LSAMP Participants	Non-CSU-LSAMP Participants*	Total
Latino/Latina first-time freshmen with declared STEM majors on entry	1996	279	790	1,069	26%	74%	100%
	1997	274	841	1,115	25%	75%	100%
	1998	272	874	1,146	24%	76%	100%
	1999	330	974	1,304	25%	75%	100%
	2000	283	996	1,279	22%	78%	100%
	2001	284	1,090	1,374	21%	79%	100%
	2002	292	1,011	1,303	22%	78%	100%
	2003	322	1,185	1,507	21%	79%	100%
	2004	271	1,331	1,602	17%	83%	100%
	2005	272	1,628	1,900	14%	86%	100%
	2006	286	1,822	2,108	14%	86%	100%
	2007	277	2,126	2,403	12%	88%	100%
	2008	304	2,766	3,070	10%	90%	100%
	2009	302	3,097	3,399	9%	91%	100%
	2010	236	3,539	3,775	6%	94%	100%
	2011	214	4,441	4,655	5%	95%	100%
	2012	259	5,178	5,437	5%	95%	100%
	2013	262	5,999	6,261	4%	96%	100%
	2014	230	6,331	6,561	4%	96%	100%
	2015	206	6,790	6,996	3%	97%	100%
	2016	151	6,660	6,811	2%	98%	100%
	2017	122	7,648	7,770	2%	98%	100%
African American first-time freshmen with declared STEM majors on entry	1996	67	325	392	17%	83%	100%
	1997	79	314	393	20%	80%	100%
	1998	84	291	375	22%	78%	100%
	1999	98	291	389	25%	75%	100%
	2000	72	314	386	19%	81%	100%
	2001	78	332	410	19%	81%	100%
	2002	89	301	390	23%	77%	100%
	2003	76	318	394	19%	81%	100%
	2004	68	344	412	17%	83%	100%
	2005	82	447	529	16%	84%	100%
	2006	73	455	528	14%	86%	100%
	2007	55	491	546	10%	90%	100%
	2008	55	550	605	9%	91%	100%
	2009	68	428	496	14%	86%	100%
	2010	49	420	469	10%	90%	100%
	2011	55	407	462	12%	88%	100%
	2012	57	496	553	10%	90%	100%
	2013	61	561	622	10%	90%	100%
	2014	33	501	534	6%	94%	100%
	2015	32	586	618	5%	95%	100%
	2016	24	525	549	4%	96%	100%
	2017	23	557	580	4%	96%	100%

* We estimated the number of non-LSAMP students in a cohort by subtracting the number of students in the LSAMP participant cohort from the number of students in the corresponding benchmark cohort. We created the LSAMP participant cohorts by matching student SSN as entered into the WebAMP system to CSU system records. LSAMP participants with missing or incorrectly entered SSNs could not be included in a cohort. This difference would understate the estimated percent of a cohort participating in the LSAMP program.

Appendix Table 11: STEM Discipline Graduation Rates for CSU-LSAMP Participant Cohorts, Non-LSAMP, and Benchmark Cohorts (1996-2014)

			Number matric- ulating	Number graduating in a STEM major after:				STEM discipline graduation rate after:*			
				4 yrs	5 yrs	6 yrs	7 yrs	4 yrs	5 yrs	6 yrs	7 yrs
Latino/Latina	CSU-LSAMP participants	1996	279	6	38	58	58	.022	.136	.208	.208
		1997	274	4	30	30	30	.015	.109	.109	.109
		1998	272	12	43	70	83	.044	.158	.257	.305
		1999	330	3	42	93	111	.009	.127	.282	.336
		2000	283	13	53	84	94	.046	.187	.297	.332
		2001	284	11	46	75	87	.039	.162	.264	.306
		2002	292	17	46	79	95	.058	.158	.271	.325
		2003	322	24	77	96	111	.075	.239	.298	.345
		2004	271	26	80	112	120	.096	.295	.413	.443
		2005	272	18	59	85	98	.066	.217	.313	.360
		2006	286	25	78	108	108	.087	.273	.378	.378
		2007	277	18	61	61	61	.065	.220	.220	.220
		2008	304	22	93	144	167	.072	.306	.474	.549
		2009	302	30	103	166	176	.099	.341	.550	.583
		2010	236	26	91	131	143	.110	.386	.555	.606
		2011	214	15	80	115	119	.070	.374	.537	.556
		2012	259	36	128	158	--	.139	.494	.610	--
		2013	262	43	148	--	--	.164	.565	--	--
		2014	230	59	--	--	--	.257	--	--	--
	Non-CSU- LSAMP participants (estimated) †	1996	790	5	22	76	--	.006	.028	.096	--
		1997	841	7	44	126	--	.008	.052	.150	--
		1998	874	12	69	117	--	.014	.079	.134	--
		1999	974	14	56	99	--	.014	.057	.102	--
		2000	996	8	70	139	176	.008	.070	.140	.177
		2001	1,090	7	63	110	140	.006	.058	.101	.128
		2002	1,011	11	64	118	145	.011	.063	.117	.143
		2003	1,185	18	99	175	206	.015	.084	.148	.174
		2004	1,331	27	109	194	235	.020	.082	.146	.177
		2005	1,628	30	136	238	295	.018	.084	.146	.181
		2006	1,822	35	165	299	372	.019	.091	.164	.204
		2007	2,126	27	170	341	438	.013	.080	.160	.206
		2008	2,766	69	316	546	653	.025	.114	.197	.236
		2009	3,097	89	468	744	866	.029	.151	.240	.280
		2010	3,539	139	572	896	1,038	.039	.162	.253	.293
		2011	4,441	213	767	1,156	1,305	.048	.173	.260	.294
2012		5,178	258	1,003	1,397	--	.050	.194	.270	--	
2013		5,999	351	1,154	--	--	.059	.192	--	--	
2014		6,331	361	--	--	--	.057	--	--	--	
Benchmark‡	1996	1,069	11	60	134	--	.010	.056	.125	--	
	1997	1,115	11	74	156	--	.010	.066	.140	--	
	1998	1,146	24	112	187	--	.021	.098	.163	--	
	1999	1,304	17	98	192	--	.013	.075	.147	--	
	2000	1,279	21	123	223	270	.016	.096	.174	.211	
	2001	1,374	18	109	185	227	.013	.079	.135	.165	
	2002	1,303	28	110	197	240	.021	.084	.151	.184	
	2003	1,507	42	176	271	317	.028	.117	.180	.210	
	2004	1,602	53	189	306	355	.033	.118	.191	.222	
	2005	1,900	48	195	323	393	.025	.103	.170	.207	
	2006	2,108	60	243	407	480	.028	.115	.193	.228	
	2007	2,403	45	231	402	499	.019	.096	.167	.208	
	2008	3,070	91	409	690	820	.030	.133	.225	.267	
	2009	3,399	119	571	910	1,042	.035	.168	.268	.307	
	2010	3,775	165	663	1,027	1,181	.044	.176	.272	.313	
	2011	4,655	228	847	1,271	1,424	.049	.182	.273	.306	
	2012	5,437	294	1,131	1,555	--	.054	.208	.286	--	
	2013	6,261	394	1,302	--	--	.063	.208	--	--	
	2014	6,561	420	--	--	--	.064	--	--	--	

Appendix Table 11 (continued): STEM Discipline Graduation Rates for CSU-LSAMP Participant Cohorts, Non-LSAMP, and Benchmark Cohorts (1996-2014)

		Cohort	Number matriculating	Number graduating in a STEM major after:				STEM discipline graduation rate after:*			
				4 yrs	5 yrs	6 yrs	7 yrs	4 yrs	5 yrs	6 yrs	7 yrs
African American	CSU-LSAMP participants	1996	67	1	2	2	2	.015	.030	.030	.030
		1997	79	0	4	4	4	.000	.051	.051	.051
		1998	84	0	4	14	16	.000	.048	.167	.190
		1999	98	3	13	27	29	.031	.133	.276	.296
		2000	72	1	8	14	16	.014	.111	.194	.222
		2001	78	0	7	12	16	.000	.090	.154	.205
		2002	89	1	9	15	19	.011	.101	.169	.213
		2003	76	2	11	16	17	.026	.145	.211	.224
		2004	68	1	14	19	21	.015	.206	.279	.309
		2005	82	5	13	16	17	.061	.159	.195	.207
		2006	73	2	13	17	17	.027	.178	.233	.233
		2007	55	1	5	5	5	.018	.091	.091	.091
		2008	55	1	11	20	21	.018	.200	.364	.382
		2009	68	8	21	26	28	.118	.309	.382	.412
		2010	49	7	16	24	25	.143	.327	.490	.510
		2011	55	8	25	34	34	.145	.455	.618	.618
		2012	57	6	28	39	--	.105	.491	.684	--
		2013	61	11	28	--	--	.180	.459	--	--
		2014	33	8	--	--	--	.242	--	--	--
	Non-CSU-LSAMP participants (estimated) †	1996	325	0	4	13	--	.000	.012	.040	--
		1997	314	1	6	17	--	.003	.019	.054	--
		1998	291	5	14	24	--	.017	.048	.082	--
		1999	291	0	7	11	--	.000	.024	.038	--
		2000	314	2	8	20	27	.006	.025	.064	.086
		2001	332	1	8	18	23	.003	.024	.054	.069
		2002	301	6	20	31	37	.020	.066	.103	.123
		2003	318	4	16	30	34	.013	.050	.094	.107
		2004	344	9	17	28	35	.026	.049	.081	.102
		2005	447	1	25	39	50	.002	.056	.087	.112
		2006	455	5	25	45	57	.011	.055	.099	.125
		2007	491	3	17	43	57	.006	.035	.088	.116
		2008	550	7	27	59	68	.013	.049	.107	.124
		2009	428	0	25	46	57	.000	.058	.107	.133
		2010	420	4	41	59	70	.010	.098	.140	.167
		2011	407	3	24	37	52	.008	.059	.091	.128
		Benchmark‡	2012	496	20	66	94	--	.040	.133	.190
2013	561		10	60	--	--	.018	.106	--	--	
2014	501		18	--	--	--	.036	--	--	--	
1996	392		1	6	15	--	.003	.015	.038	--	
1997	393		1	10	21	--	.003	.025	.053	--	
1998	375		5	18	38	--	.013	.048	.101	--	
1999	389		3	20	38	--	.008	.051	.098	--	
2000	386		3	16	34	43	.008	.041	.088	.111	
2001	410		1	15	30	39	.002	.037	.073	.095	
2002	390		7	29	46	56	.018	.074	.118	.144	
2003	394		6	27	46	51	.015	.069	.117	.129	
2004	412		10	31	47	56	.024	.075	.114	.136	

Appendix Table 11 (continued): STEM Discipline Graduation Rates for CSU-LSAMP Participant Cohorts, Non-LSAMP, and Benchmark Cohorts (1996-2014)

			Number matric- ulating	Number graduating in a STEM major after:				STEM discipline graduation rate after:*			
				4 yrs	5 yrs	6 yrs	7 yrs	4 yrs	5 yrs	6 yrs	7 yrs
Non-URM benchmark‡	Asian or Pacific Islander	1996	1,340	34	171	258	--	.025	.128	.193	--
		1997	1,669	45	177	301	--	.027	.106	.180	--
		1998	1,832	75	234	373	--	.041	.128	.204	--
		1999	2,059	88	262	425	--	.043	.127	.206	--
		2000	2,146	79	273	460	533	.037	.127	.214	.248
		2001	2,165	61	235	409	488	.028	.109	.189	.225
		2002	1,805	78	274	421	491	.043	.152	.233	.272
		2003	1,679	65	245	376	434	.039	.146	.224	.258
		2004	1,704	87	307	460	522	.051	.180	.270	.306
		2005	1,894	82	302	492	579	.043	.159	.260	.306
		2006	1,913	72	316	479	576	.038	.165	.250	.301
		2007	2,006	79	355	601	710	.039	.177	.300	.354
		2008	2,434	152	534	824	949	.062	.219	.339	.390
		2009	2,257	179	628	890	979	.079	.278	.394	.434
		2010	2,390	194	683	949	1,037	.081	.286	.397	.434
		2011	3,001	315	990	1,284	1,380	.105	.330	.428	.460
		2012	3,000	339	1,029	1,305	--	.113	.343	.435	--
		2013	3,379	453	1,200	--	--	.134	.355	--	--
		2014	3,457	560	--	--	--	.162	--	--	--
	White	1996	1,452	51	208	296	--	.035	.143	.204	--
		1997	1,595	65	252	343	--	.041	.158	.215	--
		1998	1,722	95	283	388	--	.055	.164	.225	--
		1999	1,934	96	324	455	--	.050	.168	.235	--
		2000	1,855	88	325	445	499	.047	.175	.240	.269
		2001	1,976	109	353	478	536	.055	.179	.242	.271
		2002	1,920	122	382	544	589	.064	.199	.283	.307
		2003	2,197	143	446	606	670	.065	.203	.276	.305
		2004	2,120	165	476	643	700	.078	.225	.303	.330
		2005	2,187	175	493	651	717	.080	.225	.298	.328
		2006	2,370	136	507	699	777	.057	.214	.295	.328
		2007	2,566	183	619	841	915	.071	.241	.328	.357
		2008	4,157	503	1,454	1,773	1,897	.121	.350	.427	.456
		2009	3,992	586	1,559	1,863	1,971	.147	.391	.467	.494
		2010	3,800	651	1,588	1,898	1,968	.171	.418	.499	.518
		2011	4,242	797	1,939	2,227	2,312	.188	.457	.525	.545
		2012	4,060	816	1,827	2,091	--	.201	.450	.515	--
		2013	4,654	996	2,094	--	--	.214	.450	--	--
		2014	4,522	1,013	--	--	--	.224	--	--	--
Overall benchmark‡	1996	4,865	127	528	827	--	.026	.109	.170	--	
	1997	5,484	154	614	968	--	.028	.112	.177	--	
	1998	5,940	236	774	1,169	--	.040	.130	.197	--	
	1999	6,606	249	846	1,305	--	.038	.128	.198	--	
	2000	6,576	245	897	1,391	1,601	.037	.136	.212	.243	
	2001	6,896	251	900	1,358	1,570	.036	.131	.197	.228	
	2002	6,330	279	956	1,434	1,634	.044	.151	.227	.258	
	2003	6,585	309	1,032	1,503	1,694	.047	.157	.228	.257	
	2004	6,628	371	1,184	1,702	1,894	.056	.179	.257	.286	
	2005	7,351	364	1,189	1,736	2,006	.050	.162	.236	.273	
	2006	7,823	336	1,311	1,921	2,212	.043	.168	.246	.283	
	2007	8,659	386	1,465	2,248	2,596	.045	.169	.260	.300	
	2008	11,551	868	2,783	3,827	4,259	.075	.241	.331	.369	
	2009	11,626	1,014	3,209	4,272	4,675	.087	.276	.367	.402	
	2010	11,836	1,189	3,423	4,515	4,882	.100	.289	.381	.412	
	2011	14,008	1,583	4,370	5,547	5,939	.113	.312	.396	.424	
	2012	14,893	1,728	4,691	5,838	--	.116	.315	.392	--	
	2013	17,258	2,175	5,505	--	--	.126	.319	--	--	
	2014	17,660	2,402	--	--	--	.136	--	--	--	

* Note: STEM discipline graduation rates reflect the percent of a cohort graduating in a STEM major.

† We estimated the number of non-LSAMP participants by subtracting the number of students in the LSAMP participant cohort from the number of students in the corresponding benchmark cohort.

‡ We obtained benchmark cohort information from the California State University Data for the Consortium for Student Retention Data Exchange (CSRDE). Benchmark cohorts for 1996-2007 include all students in the specified category at the 19 CSU campuses participating in Phase III of the CSU-LSAMP program. The 2008-2012 benchmark cohorts include students at the 22 CSU campuses participating in Senior Level I CSU-LSAMP. Seventh-year graduation data is not available for 1996-1999 benchmark cohorts.

Appendix Table 12: STEM Discipline Persistence Rates for CSU-LSAMP CCCT Participant Cohorts, Non-LSAMP, and Benchmark Cohorts (2003-2017)

			Number matric- ulating	Number continuing or graduating STEM major after:							STEM Persistence rate after:						
				1 yr	2 yr	4 yrs	5 yrs	6 yrs	7 yrs	1 yr	2 yr	4 yrs	5 yrs	6 yrs	7 yrs		
Latino/ Latina	CSU-LSAMP participants	Cohort															
			2003	134	110	101	83	81	80	78	.821	.754	.619	.604	.597	.582	
			2004	122	102	89	82	77	76	75	.836	.730	.672	.631	.623	.615	
			2005	145	128	111	92	89	89	89	.883	.766	.634	.614	.614	.614	
			2006	114	96	84	65	62	61	59	.842	.737	.570	.544	.535	.518	
			2007	94	83	75	67	64	62	61	.883	.798	.713	.681	.660	.649	
			2008	96	86	78	65	63	61	61	.896	.813	.677	.656	.635	.635	
			2009	102	92	82	69	65	64	64	.902	.804	.676	.637	.627	.627	
			2010	127	108	102	92	89	89	88	.850	.803	.724	.701	.701	.693	
			2011	142	132	126	109	107	106	106	.930	.887	.768	.754	.746	.746	
			2012	131	119	111	105	104	104	104	.908	.847	.802	.794	.794	.794	
			2013	132	124	116	109	108	108	--	.939	.879	.826	.818	.818	--	
			2014	152	144	138	130	129	--	--	.947	.908	.855	.849	--	--	
			2015	140	133	126	120	--	--	--	.950	.900	.857	--	--	--	
			2016	134	121	117	--	--	--	--	.903	.873	--	--	--	--	
			2017	96	90	--	--	--	--	--	.938	--	--	--	--	--	
			Non-CSU- LSAMP participants (estimated) †	2003	572	397	334	274	271	275	275	.694	.584	.479	.474	.481	.481
				2004	667	464	378	318	314	322	324	.695	.567	.477	.471	.482	.486
				2005	669	470	397	341	337	334	338	.703	.593	.510	.503	.500	.506
2006	720			523	432	386	386	387	398	.726	.600	.536	.536	.537	.553		
2007	768			548	458	417	400	402	406	.714	.596	.542	.521	.523	.529		
2008	747			515	444	363	364	353	357	.690	.594	.486	.488	.472	.478		
2009	872			665	566	498	485	485	490	.762	.649	.571	.557	.557	.562		
2010	1,077			828	729	626	623	618	615	.768	.677	.581	.578	.574	.571		
2011	1,161			878	790	698	700	701	703	.756	.680	.601	.603	.603	.606		
2012	1,510			1,176	1,052	916	905	910	--	.779	.697	.606	.599	.603	--		
2013	2,051			1,622	1,451	1,336	1,302	--	--	.791	.708	.651	.635	--	--		
2014	2,071			1,650	1,438	1,322	--	--	--	.797	.694	.638	--	--	--		
2015	2,386			1,885	1,695	--	--	--	--	.790	.710	--	--	--	--		
2016	2,617			2,132	1,864	--	--	--	--	.815	.712	--	--	--	--		
2017	2,700			2,275	--	--	--	--	--	.843	--	--	--	--	--		
	Benchmark‡	2003	706	507	435	357	352	355	353	.718	.616	.506	.499	.503	.500		
		2004	789	566	467	400	391	398	399	.717	.592	.507	.496	.504	.506		
		2005	814	598	508	433	426	423	427	.735	.624	.532	.523	.520	.525		
		2006	834	619	516	451	448	448	457	.742	.619	.541	.537	.537	.548		
		2007	862	631	533	484	464	464	467	.732	.618	.561	.538	.538	.542		
		2008	843	601	522	428	427	414	418	.713	.619	.508	.507	.491	.496		
		2009	974	757	648	567	550	549	554	.777	.665	.582	.565	.564	.569		
		2010	1,204	936	831	718	712	707	703	.777	.690	.596	.591	.587	.584		
		2011	1,303	1,010	916	807	807	807	809	.775	.703	.619	.619	.619	.621		
		2012	1,641	1,295	1,163	1,021	1,009	1,014	--	.789	.709	.622	.615	.618	--		
		2013	2,183	1,746	1,567	1,445	1,410	--	--	.800	.718	.662	.646	--	--		
		2014	2,223	1,794	1,576	1,452	--	--	--	.807	.709	.653	--	--	--		
		2015	2,526	2,018	1,821	--	--	--	--	.799	.721	--	--	--	--		
		2016	2,751	2,253	1,981	--	--	--	--	.819	.720	--	--	--	--		
		2017	2,796	2,365	--	--	--	--	--	.846	--	--	--	--	--		

* Note: Persistence rates reflect the percent of a cohort remaining or graduating in a STEM major.

† We estimated the number of non-LSAMP participants by subtracting the number of students in the LSAMP participant cohort from the number of students in the corresponding benchmark cohort.

‡ We obtained benchmark cohort information from the California State University Data for the Consortium for Student Retention Data Exchange (CSRDE).

Appendix Table 12 (continued): STEM Discipline Persistence Rates for CSU-LSAMP CCCT Participant Cohorts, Non-LSAMP, and Benchmark Cohorts (2003-2017)

			Number matric- ulating	Number continuing or graduating STEM major after:							STEM Persistence rate after:						
				1 yr	2 yr	4 yrs	5 yrs	6 yrs	7 yrs	1 yr	2 yr	4 yrs	5 yrs	6 yrs	7 yrs		
African American	CSU-LSAMP participants	2003	39	37	27	20	20	20	20	.949	.692	.513	.513	.513	.513		
		2004	35	26	22	18	18	18	17	.743	.629	.514	.514	.514	.486		
		2005	32	22	19	16	14	13	11	.688	.594	.500	.438	.406	.344		
		2006	36	29	26	16	16	16	15	.806	.722	.444	.444	.444	.417		
		2007	20	18	17	15	15	14	14	.900	.850	.750	.750	.700	.700		
		2008	23	18	14	13	13	12	12	.783	.609	.565	.565	.522	.522		
		2009	27	19	18	17	13	12	12	.704	.667	.630	.481	.444	.444		
		2010	17	16	15	11	11	11	11	.941	.882	.647	.647	.647	.647		
		2011	29	25	22	18	17	17	17	.862	.759	.621	.586	.586	.586		
		2012	21	18	15	14	13	13	--	.857	.714	.667	.619	.619	--		
		2013	27	25	23	21	21	--	--	.926	.852	.778	.778	--	--		
		2014	24	21	21	20	--	--	--	.875	.875	.833	--	--	--		
		2015	14	12	11	--	--	--	--	.857	.786	--	--	--	--		
		2016	18	17	15	--	--	--	--	.944	.833	--	--	--	--		
		2017	8	6	--	--	--	--	--	.750	--	--	--	--	--		
	Non-CSU- LSAMP participants (estimated) †	2003	117	67	61	49	48	43	42	.573	.521	.418	.410	.368	.358		
		2004	166	109	90	59	53	54	56	.657	.542	.355	.319	.325	.337		
		2005	140	85	64	47	44	47	45	.607	.458	.335	.314	.336	.322		
		2006	153	93	67	57	56	50	51	.608	.438	.372	.366	.327	.333		
		2007	124	77	53	40	40	42	41	.621	.427	.323	.323	.339	.331		
		2008	133	76	60	40	39	40	38	.572	.451	.301	.293	.300	.286		
		2009	83	59	51	37	37	41	40	.711	.614	.446	.446	.494	.482		
		2010	130	92	81	59	57	59	59	.708	.623	.454	.439	.454	.454		
		2011	101	70	54	43	42	44	45	.693	.535	.425	.416	.435	.446		
		2012	147	104	81	64	67	68	--	.707	.551	.435	.456	.462	--		
		2013	168	113	95	80	74	--	--	.673	.565	.476	.440	--	--		
		2014	190	133	114	79	--	--	--	.700	.600	.416	--	--	--		
		2015	207	159	129	--	--	--	--	.768	.623	--	--	--	--		
		2016	195	151	129	--	--	--	--	.775	.661	--	--	--	--		
		2017	225	182	--	--	--	--	--	.809	--	--	--	--	--		
	Benchmark	2003	156	104	88	69	68	63	62	.667	.564	.442	.436	.404	.397		
		2004	201	135	112	77	71	72	73	.672	.557	.383	.353	.358	.363		
		2005	172	107	83	63	58	60	56	.622	.483	.366	.337	.349	.326		
2006		189	122	93	73	72	66	66	.646	.492	.386	.381	.349	.349			
2007		144	95	70	55	55	56	55	.660	.486	.382	.382	.389	.382			
2008		156	94	74	53	52	52	50	.603	.474	.340	.333	.333	.321			
2009		110	78	69	54	50	53	52	.709	.627	.491	.455	.482	.473			
2010		147	108	96	70	68	70	70	.735	.653	.476	.463	.476	.476			
2011		130	95	76	61	59	61	62	.731	.585	.469	.454	.469	.477			
2012		168	122	96	78	80	81	--	.726	.571	.464	.476	.482	--			
2013		195	138	118	101	95	--	--	.708	.605	.518	.487	--	--			
2014		214	154	135	99	--	--	--	.720	.631	.463	--	--	--			
2015		221	171	140	--	--	--	--	.774	.633	--	--	--	--			
2016		213	168	144	--	--	--	--	.789	.676	--	--	--	--			
2017		233	188	--	--	--	--	--	.807	--	--	--	--	--			

Appendix Table 12 (continued): STEM Discipline Persistence Rates for CSU-LSAMP CCCT Participant Cohorts, Non-LSAMP, and Benchmark Cohorts (2003-2017)

			Number matriculating	Number continuing or graduating STEM major after:							STEM Persistence rate after:						
				1 yr	2 yr	4 yrs	5 yrs	6 yrs	7 yrs	1 yr	2 yr	4 yrs	5 yrs	6 yrs	7 yrs		
Non-URM benchmark‡	Asian or Pacific Islander	2003	1,069	710	610	480	465	478	466	.664	.571	.449	.435	.447	.436		
		2004	1,047	804	664	565	550	551	550	.768	.634	.540	.525	.526	.525		
		2005	1,041	772	665	535	538	542	545	.742	.639	.514	.517	.521	.524		
		2006	1,020	771	644	548	539	542	546	.756	.631	.537	.528	.531	.535		
		2007	979	730	604	513	504	502	503	.746	.617	.524	.515	.513	.514		
		2008	890	674	576	493	485	485	484	.757	.647	.554	.545	.545	.544		
		2009	905	717	625	510	502	509	508	.792	.691	.564	.555	.562	.561		
		2010	1,055	829	730	609	608	611	609	.786	.692	.577	.576	.579	.577		
		2011	1,078	883	776	666	660	660	662	.819	.720	.618	.612	.612	.614		
		2012	1,251	1,026	887	794	794	789	--	.820	.709	.635	.635	.631	--		
	2013	1,620	1,345	1,168	1,035	1,022	--	--	.830	.721	.639	.631	--	--			
	2014	1,479	1,232	1,097	984	--	--	--	.833	.742	.665	--	--	--			
	2015	1,560	1,310	1,164	--	--	--	--	.840	.746	--	--	--	--			
	2016	1,631	1,416	1,213	--	--	--	--	.868	.744	--	--	--	--			
	2017	1,637	1,409	--	--	--	--	--	.861	--	--	--	--	--			
	White	2003	1,578	1,177	1,000	873	881	881	884	.746	.634	.553	.558	.558	.560		
		2004	1,591	1,196	1,042	948	931	931	934	.752	.655	.596	.585	.585	.587		
		2005	1,579	1,210	1,048	949	940	936	949	.766	.664	.601	.595	.593	.601		
		2006	1,781	1,364	1,165	1,031	1,037	1,038	1,044	.766	.654	.579	.582	.583	.586		
		2007	1,657	1,248	1,099	963	968	964	964	.753	.663	.581	.584	.582	.582		
2008		1,613	1,239	1,073	971	971	969	971	.768	.665	.602	.602	.601	.602			
2009		1,643	1,303	1,152	1,025	1,025	1,032	1,035	.793	.701	.624	.624	.628	.630			
2010		1,974	1,599	1,453	1,311	1,297	1,297	1,303	.810	.736	.664	.657	.657	.660			
2011		2,075	1,693	1,523	1,382	1,372	1,374	1,370	.816	.734	.666	.661	.662	.660			
2012		2,202	1,803	1,618	1,486	1,484	1,489	--	.819	.735	.675	.674	.676	--			
2013	2,501	2,061	1,858	1,736	1,718	--	--	.824	.743	.694	.687	--	--				
2014	2,458	2,087	1,839	1,730	--	--	--	.849	.748	.704	--	--	--				
2015	2,369	1,992	1,803	--	--	--	--	.841	.761	--	--	--	--				
2016	2,309	1,972	1,736	--	--	--	--	.854	.752	--	--	--	--				
2017	2,258	1,987	--	--	--	--	--	.880	--	--	--	--	--				
Overall benchmark‡	2003	4,575	3,303	2,800	2,361	2,329	2,352	2,338	.722	.612	.516	.509	.514	.511			
	2004	4,634	3,471	2,952	2,572	2,526	2,535	2,539	.749	.637	.555	.545	.547	.548			
	2005	4,504	3,387	2,923	2,513	2,491	2,500	2,522	.752	.649	.558	.553	.555	.560			
	2006	4,693	3,557	3,022	2,623	2,614	2,614	2,642	.758	.644	.559	.557	.557	.563			
	2007	4,553	3,401	2,891	2,554	2,531	2,522	2,522	.747	.635	.561	.556	.554	.554			
	2008	4,315	3,241	2,796	2,421	2,416	2,408	2,412	.751	.648	.561	.560	.558	.559			
	2009	4,570	3,574	3,108	2,701	2,678	2,692	2,696	.782	.680	.591	.586	.589	.590			
	2010	5,455	4,337	3,906	3,415	3,393	3,388	3,388	.795	.716	.626	.622	.621	.621			
	2011	5,574	4,470	4,013	3,567	3,528	3,539	3,545	.802	.720	.640	.633	.635	.636			
	2012	6,415	5,164	4,574	4,112	4,112	4,118	--	.805	.713	.641	.641	.642	--			
	2013	7,872	6,400	5,723	5,227	5,148	--	--	.813	.727	.664	.654	--	--			
	2014	7,671	6,321	5,600	5,140	--	--	--	.824	.730	.670	--	--	--			
	2015	8,146	6,696	6,012	--	--	--	--	.822	.738	--	--	--	--			
	2016	8,428	7,096	6,220	--	--	--	--	.842	.738	--	--	--	--			
	2017	8,554	7,331	--	--	--	--	--	.857	--	--	--	--	--			

Appendix Table 13: STEM Discipline Graduation Rates for CSU-LSAMP CCCT Participant Cohorts, Non-LSAMP, and Benchmark Cohorts (2003-2014)

Cohort				Number graduating in STEM major after:				STEM Graduation rate after:*			
				4 yrs	5 yrs	6 yrs	7 yrs	4 yrs	5 yrs	6 yrs	7 yrs
Latino/Latina	CSU-LSAMP participants	2003	134	66	74	76	76	.493	.552	.567	.567
		2004	122	65	72	74	75	.533	.590	.607	.615
		2005	145	81	85	88	89	.559	.586	.607	.614
		2006	114	49	55	59	59	.430	.482	.518	.518
		2007	94	55	61	61	61	.585	.649	.649	.649
		2008	96	54	57	59	60	.563	.594	.615	.625
		2009	102	59	61	63	64	.578	.598	.618	.627
		2010	127	78	86	87	87	.614	.677	.685	.685
		2011	142	93	104	106	106	.655	.732	.746	.746
		2012	131	94	101	104	--	.718	.771	.794	--
		2013	132	104	107	--	--	.788	.811	--	--
		2014	152	119	--	--	--	.783	--	--	--
	Non-CSU-LSAMP participants (estimated) †	2003	572	195	230	253	266	.341	.403	.442	.465
		2004	667	236	278	297	308	.353	.417	.445	.461
		2005	669	246	297	315	327	.368	.444	.471	.489
		2006	720	279	343	365	385	.387	.476	.506	.534
		2007	768	290	344	379	394	.377	.448	.493	.513
		2008	747	256	315	339	350	.343	.421	.454	.468
		2009	872	358	435	471	478	.410	.499	.540	.548
		2010	1,077	496	564	597	603	.461	.524	.554	.560
		2011	1,161	578	653	677	688	.498	.562	.583	.592
		2012	1,510	764	839	882	--	.506	.556	.584	--
		2013	2,051	1,103	1,225	--	--	.538	.597	--	--
		2014	2,071	1,144	--	--	--	.552	--	--	--
Benchmark		2003	706	261	304	329	342	.370	.431	.466	.484
		2004	789	301	350	371	383	.381	.444	.470	.485
		2005	814	327	382	403	416	.402	.469	.495	.511
		2006	834	328	398	424	444	.393	.477	.508	.532
		2007	862	345	405	440	455	.400	.470	.510	.528
		2008	843	310	372	398	410	.368	.441	.472	.486
		2009	974	417	496	534	542	.428	.509	.548	.556
		2010	1,204	574	650	684	690	.477	.540	.568	.573
		2011	1,303	671	757	783	794	.515	.581	.601	.609
		2012	1,641	858	940	986	--	.523	.573	.601	--
		2013	2,183	1,207	1,332	--	--	.553	.610	--	--
		2014	2,223	1,263	--	--	--	.568	--	--	--

Appendix Table 13 (continued): STEM Discipline Graduation Rates for CSU-LSAMP CCCT Participant Cohorts, Non-LSAMP, and Benchmark Cohorts (2003-2014)

Cohort				Number graduating in STEM major after:					STEM Graduation rate after:*				
				4 yrs	5 yrs	6 yrs	7 yrs	8 yrs	4 yrs	5 yrs	6 yrs	7 yrs	8 yrs
African American	CSU-LSAMP participants	2003	39	17	18	18	19	.436	.462	.462	.487	39	17
		2004	35	14	16	17	17	.400	.457	.486	.486	35	14
		2005	32	10	10	10	10	.313	.313	.313	.313	32	10
		2006	36	14	14	15	15	.389	.389	.417	.417	36	14
		2007	20	13	14	14	14	.650	.700	.700	.700	20	13
		2008	23	11	11	12	12	.478	.478	.522	.522	23	11
		2009	27	11	12	12	12	.407	.444	.444	.444	27	11
		2010	17	11	11	11	11	.647	.647	.647	.647	17	11
		2011	29	16	17	17	17	.552	.586	.586	.586	29	16
		2012	21	12	12	12	--	.571	.571	.571	--	21	12
		2013	27	19	21	--	--	.704	.778	--	--	27	19
		2014	24	19	--	--	--	.792	--	--	--	24	19
	Non-CSU-LSAMP participants (estimated) †	2003	117	31	37	41	42	.265	.317	.350	.359	117	31
		2004	166	41	48	51	53	.247	.289	.307	.319	166	41
		2005	140	34	41	45	45	.243	.293	.322	.322	140	34
		2006	153	32	42	45	49	.209	.274	.294	.321	153	32
		2007	124	26	29	31	35	.210	.234	.251	.282	124	26
		2008	133	28	33	37	38	.211	.248	.278	.286	133	28
		2009	83	29	35	37	38	.350	.421	.445	.458	83	29
		2010	130	49	53	57	58	.377	.407	.439	.446	130	49
		2011	101	27	34	38	42	.268	.336	.376	.416	101	27
		2012	147	49	60	61	--	.333	.409	.416	--	147	49
		2013	168	62	69	--	--	.369	.411	--	--	168	62
		2014	190	63	--	--	--	.331	--	--	--	190	63
Benchmark	Benchmark	2003	156	48	55	59	61	.308	.353	.378	.391	156	48
		2004	201	55	64	68	70	.274	.318	.338	.348	201	55
		2005	172	44	51	55	55	.256	.297	.320	.320	172	44
		2006	189	46	56	60	64	.243	.296	.317	.339	189	46
		2007	144	39	43	45	49	.271	.299	.313	.340	144	39
		2008	156	39	44	49	50	.250	.282	.314	.321	156	39
		2009	110	40	47	49	50	.364	.427	.445	.455	110	40
		2010	147	60	64	68	69	.408	.435	.463	.469	147	60
		2011	130	43	51	55	59	.331	.392	.423	.454	130	43
		2012	168	61	72	73	--	.363	.429	.435	--	168	61
		2013	195	81	90	--	--	.415	.462	--	--	195	81
		2014	214	82	--	--	--	.383	--	--	--	214	82

Appendix Table 13 (continued): STEM Discipline Graduation Rates for CSU-LSAMP CCCT Participant Cohorts, Non-LSAMP, and Benchmark Cohorts (2003-2014)

				Number graduating in STEM major after:				STEM Graduation rate after:*			
Cohort			Number matric- ulating	4 yrs	5 yrs	6 yrs	7 yrs	4 yrs	5 yrs	6 yrs	7 yrs
Non-URM benchmark†	Asian or Pacific Islander	2003	1,069	362	410	443	458	.339	.384	.414	.428
		2004	1,047	440	500	528	537	.420	.478	.504	.513
		2005	1,041	436	491	524	533	.419	.472	.503	.512
		2006	1,020	432	490	521	540	.424	.480	.511	.529
		2007	979	403	451	483	498	.412	.461	.493	.509
		2008	890	390	446	468	474	.438	.501	.526	.533
		2009	905	410	475	493	500	.453	.525	.545	.552
		2010	1,055	523	571	596	603	.496	.541	.565	.572
		2011	1,078	562	616	642	654	.521	.571	.596	.607
		2012	1,251	666	751	773	--	.532	.600	.618	--
		2013	1,620	897	982	--	--	.554	.606	--	--
		2014	1,479	876	--	--	--	.592	--	--	--
	White	2003	1,578	735	824	862	873	.466	.522	.546	.553
		2004	1,591	783	869	901	918	.492	.546	.566	.577
		2005	1,579	778	872	906	928	.493	.552	.574	.588
		2006	1,781	866	972	1,010	1,028	.486	.546	.567	.577
		2007	1,657	799	906	938	951	.482	.547	.566	.574
		2008	1,613	784	902	944	957	.486	.559	.585	.593
		2009	1,643	886	973	1,009	1,024	.539	.592	.614	.623
		2010	1,974	1,117	1,226	1,273	1,287	.566	.621	.645	.652
		2011	2,075	1,216	1,318	1,351	1,357	.586	.635	.651	.654
		2012	2,202	1,319	1,436	1,458	--	.599	.652	.662	--
		2013	2,501	1,551	1,643	--	--	.620	.657	--	--
		2014	2,458	1,578	--	--	--	.642	--	--	--
Overall benchmark†	2003	4,575	1,862	2,105	2,242	2,292	.407	.460	.490	.501	
	2004	4,634	2,090	2,336	2,433	2,493	.451	.504	.525	.538	
	2005	4,504	2,018	2,288	2,414	2,468	.448	.508	.536	.548	
	2006	4,693	2,102	2,398	2,520	2,595	.448	.511	.537	.553	
	2007	4,553	2,031	2,299	2,418	2,477	.446	.505	.531	.544	
	2008	4,315	1,916	2,209	2,326	2,369	.444	.512	.539	.549	
	2009	4,570	2,203	2,495	2,614	2,655	.482	.546	.572	.581	
	2010	5,455	2,875	3,175	3,306	3,344	.527	.582	.606	.613	
	2011	5,574	3,055	3,350	3,461	3,500	.548	.601	.621	.628	
	2012	6,415	3,554	3,907	4,016	--	.554	.609	.626	--	
	2013	7,872	4,542	4,912	--	--	.577	.624	--	--	
	2014	7,671	4,564	--	--	--	.595	--	--	--	

* Note: Graduation rates reflect the percent of a cohort graduating in a STEM major.

† We estimated the number of non-LSAMP participants by subtracting the number of students in the LSAMP participant cohort from the number of students in the corresponding benchmark cohort.

‡ We obtained benchmark cohort information from the California State University Data for the Consortium for Student Retention Data Exchange (CSRDE).

Appendix Table 14: Results of Attempt to Retrieve CSU-ERS and/or NSC Enrollment and Graduation Records for CSU-LSAMP Participants, 1994-2019

		Entered CSU-LSAMP during:						
		Phase I 1994-1998	Phase II 1999-2003	Phase III 2004-2008	Senior level I 2009-2013	Senior level II 2014-2018	SPaRA 2019	Total
Number	Data retrieved	3,753	5,795	4,436	3,860	4,379	762	22,985
	Data not retrieved	880	1,632	1,350	443	368	126	4,799
	Total	4,633	7,427	5,786	4,303	4,747	888	27,784
Percent	Data retrieved	81.0%	78.0%	76.7%	89.7%	92.2%	85.8%	82.7%
	Data not retrieved	19.0%	22.0%	23.3%	10.3%	7.8%	14.2%	17.3%
	Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Appendix Table 15: Baccalaureate Degree Attainment, CSU-LSAMP Participants by Entry Phase, 1994-2019

			Entered CSU-LSAMP during:						Total
			Phase I 1994- 1998	Phase II 1999- 2003	Phase III 2004- 2008	Senior Level I 2009- 2013	Senior Level II 2014- 2018	SPaRA 2019	
Number	URM	STEM degree	1,388	1,674	2,203	2,227	2,156	108	9,756
		Non-STEM degree	784	1,148	1,006	422	284	43	3,687
		Currently enrolled	60	174	416	440	1,109	460	2,659
		No degree, not currently enrolled	1,232	1,104	629	31	7	0	3,003
		Total	3,464	4,100	4,254	3,120	3,556	611	19,105
	Non-URM	STEM degree	124	670	119	482	589	47	2,031
		Non-STEM degree	50	326	29	50	52	12	519
		Currently enrolled	1	20	17	45	116	82	281
		No degree, not currently enrolled	63	287	6	3	2	0	361
		Total	238	1,303	171	580	759	141	3,192
	Not reported	STEM degree	24	214	9	98	50	1	396
		Non-STEM degree	10	98	0	35	7	2	152
		Currently enrolled	2	9	1	24	7	7	50
		No degree, not currently enrolled	15	71	1	3	0	0	90
		Total	51	392	11	160	64	10	688
	Total	STEM degree	1,536	2,558	2,331	2,807	2,795	156	12,183
		Non-STEM degree	844	1,572	1,035	507	343	57	4,358
		Currently enrolled	63	203	434	509	1,232	549	2,990
		No degree, not currently enrolled	1,310	1,462	636	37	9	0	3,454
		Total	3,753	5,795	4,436	3,860	4,379	762	22,985
Percent	URM	STEM degree	40.1%	40.8%	51.8%	71.4%	60.6%	17.7%	51.1%
		Non-STEM degree	22.6%	28.0%	23.6%	13.5%	8.0%	7.0%	19.3%
		Currently enrolled	1.7%	4.2%	9.8%	14.1%	31.2%	75.3%	13.9%
		No degree, not currently enrolled	35.6%	26.9%	14.8%	1.0%	0.2%	0.0%	15.7%
		Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Non-URM	STEM degree	52.1%	51.4%	69.6%	83.1%	77.6%	33.3%	63.6%
		Non-STEM degree	21.0%	25.0%	17.0%	8.6%	6.9%	8.5%	16.3%
		Currently enrolled	0.4%	1.5%	9.9%	7.8%	15.3%	58.2%	8.8%
		No degree, not currently enrolled	26.5%	22.0%	3.5%	0.5%	0.3%	0.0%	11.3%
		Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Not reported	STEM degree	47.1%	54.6%	81.8%	61.3%	78.1%	10.0%	57.6%
		Non-STEM degree	19.6%	25.0%	0.0%	21.9%	10.9%	20.0%	22.1%
		Currently enrolled	3.9%	2.3%	9.1%	15.0%	10.9%	70.0%	7.3%
		No degree, not currently enrolled	29.4%	18.1%	9.1%	1.9%	0.0%	0.0%	13.1%
		Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Total	STEM degree	40.9%	44.1%	52.5%	72.7%	63.8%	20.5%	53.0%
		Non-STEM degree	22.5%	27.1%	23.3%	13.1%	7.8%	7.5%	19.0%
		Currently enrolled	1.7%	3.5%	9.8%	13.2%	28.1%	72.0%	13.0%
		No degree, not currently enrolled	34.9%	25.2%	14.3%	1.0%	0.2%	0.0%	15.0%
		Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Data source: Longitudinal CSU-LSAMP participant database constructed from WebAMP records and matched to ERS and NSC records.

