

College of Science and Engineering Database
CSL Details for Academic Years Fall 2010-Spring 2017
(Unduplicated*)

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**Unduplicated = Refers to reporting single students, once per each term, regarding their participation in all their CSL courses. All hours are reported yet one/single student in multiple CSL courses are not duplicated so only appear once in the count.*

CSU Center for Community Engagement defines Service Learning as follows:

“A teaching method that promotes student learning through active participation in meaningful and planned service experiences in the community that are substantively related to course content. Through reflective activities, students enhance their understanding of course content, general knowledge, sense of civic responsibility, self-awareness and commitment to the community.”

Additionally, ICCE also uses the following statement from *Charity to Change, by the Minnesota Campus Compact* to describe service-learning:

“Service-learning is a process through which students are involved in community work that contributes significantly: 1) to positive change in individuals, organizations, neighborhoods, and/or larger systems in a community; and 2) to students’ academic understanding, civic development, personal or career growth, and/or understanding of larger social issues. This process always includes an intentional and structured educational/developmental component for students, and may be employed in curricular or co-curricular settings. Even with an expanded vision for the field, service-learning will undoubtedly continue to play a critical role in campus-community collaboration.”



ICCE and SFSU recognizes the exemplary programs and curriculum across the College of Science and Engineering (CoSE). As a high impact practice, a variety of CSL-related reports can be, and have been, generated by ICCE, the registrar’s office, and/or the university *Office of Institutional Research* (IR); however, given the multitude of sources, it’s important to note some of that data may not align or coincide for various reasons.

Second, of all six SF State Colleges, CoSE currently has the fewest CSL designated classes campus-wide. This can be changed/expanded with time, strategy, and effort across CoSE departments. As of January 2019, the following $n=10$ courses are part of this collection as indicated in the SF State Bulletin based on ICCE records. The list below reflects five departments out of nine total across CoSE. Only hours from these courses are actually shown on the students’ official transcript. Also as noted on the ICCE CSL Course List website “not all courses are offered every semester and it is at the discretion of course instructor to offer the CSL option”.

Biology

- BIOL 644 LEADerS Service-Learning Course: Learners Engaged in Advocating for Diversity in Science **effective spring 2019*

Earth & Climate Sciences

- EARTH 642/GEOG 642 Watershed Assessment and Restoration

Geography & Environment

- GEOG 642/ERTH 642 Watershed Assessment and Restoration
- GEOG 688 Geographic Internship

Mathematics

- MATH 314 Math Circle Seminar

Psychology

- PSY 200 General Psychology
- PSY 525 Community Psychology
- PSY 558 Field Service Seminar
- PSY 559 Psychological Field Service
- PSY 699 Independent Study in Psychology

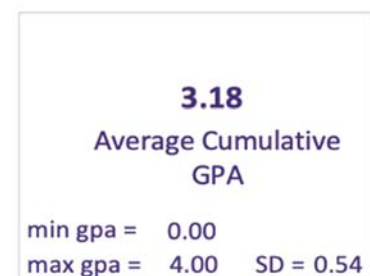
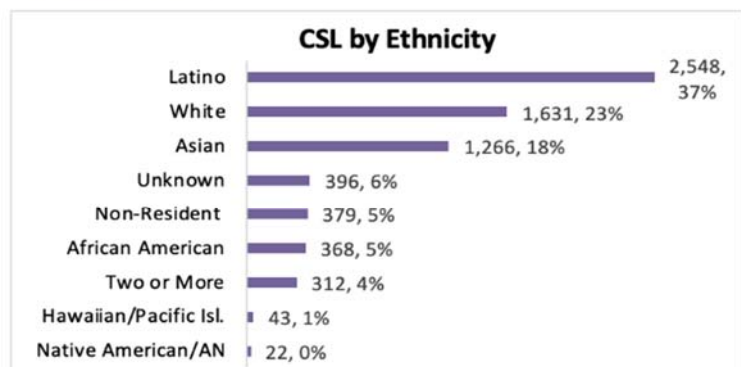
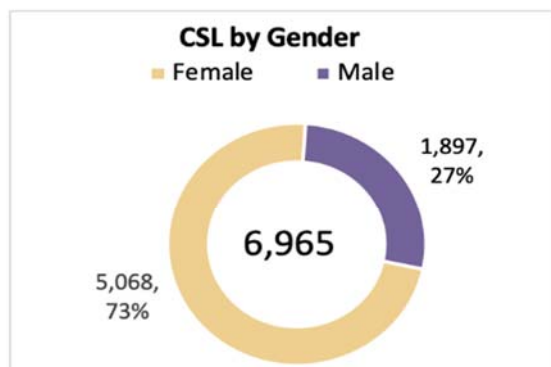
A spring 2019 ICCE Faculty Fellow, Dr. Leticia Márquez-Magaña, Professor of Biology, and Director of the Health Equity Research Laboratory, has been an excellent addition to these efforts.

The data in this report is extracted from pivot tables provided directly by the Office of Institutional Research. Details are from AY 2010-2017 for **CSL designated classes** for both fall and spring semesters as the most recent data provided to ICCE. This project of gathering such data across colleges began in 2017 and it was, therefore, decided to obtain a 7-year period to explore more current trends. This review and analysis, therefore, began with AY fall 2010. Subsequently, spring 2010 was omitted from this particular analysis and report, and fall 2017 data was not yet available during data query during early spring 2018 when this analysis began. (*Note: Where “average GPA” is reported, this is the average cumulative GPA as calculated by AIR*)

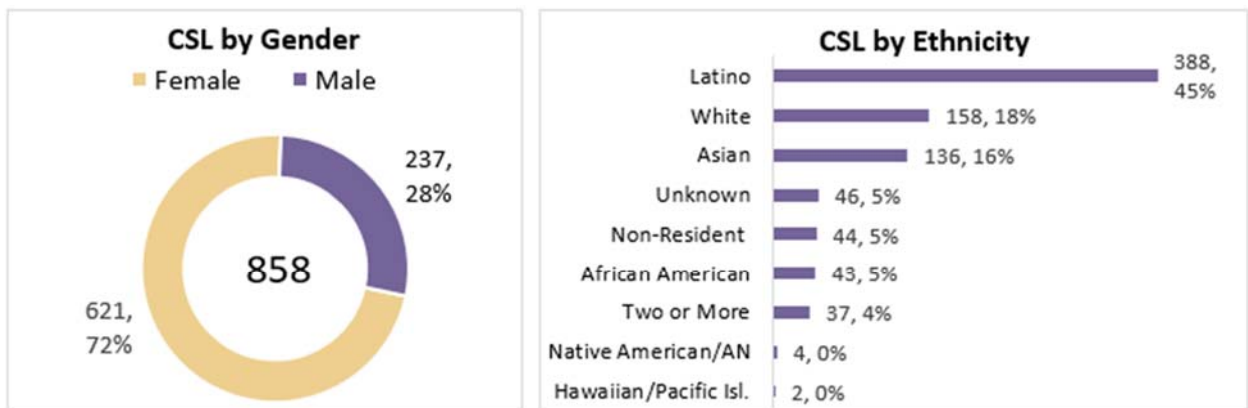
The data that follows consists of sample details and trends for the nine departments: Biology, Chemistry & Biochemistry, Computer Sciences, Earth & Climate Sciences, School of Engineering, Geography & Environment, Mathematics, Physics & Astronomy, and Psychology.

7-Years Reported Data across Sample Variables (Across SF State, all 6 colleges)

Chart Totals



7-Years of Reported Data (2010-2017) Across Sample Variables
COLLEGE OF SCIENCE AND ENGINEERING



48,151
 Total Community
 Service Hours
 (Across 7 terms)

56.12
 Average Community
 Service Hours

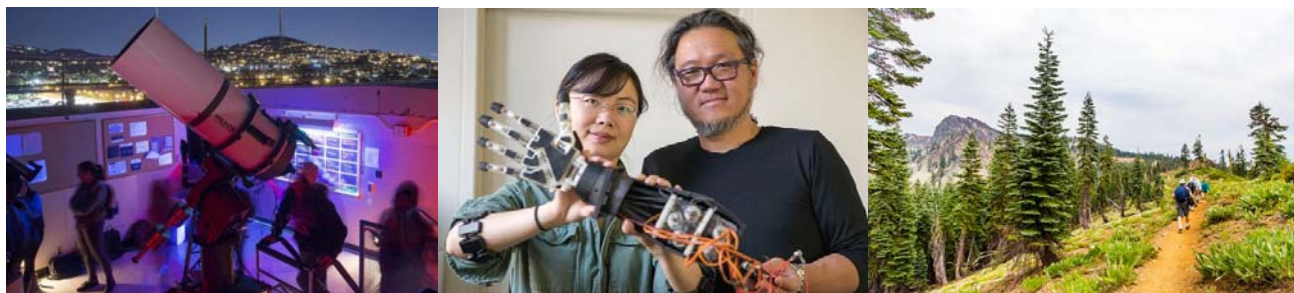
min hrs = 2
 max hrs = 500 SD = 58.16

3.15
 Average Cumulative
 GPA

min gpa = 0.39
 max gpa = 4.00 SD = 0.56

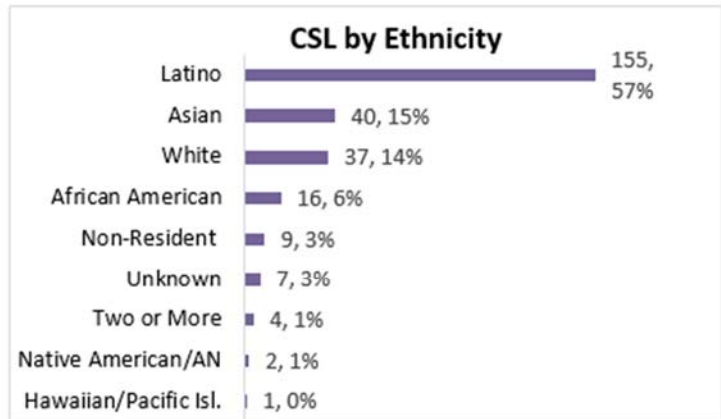
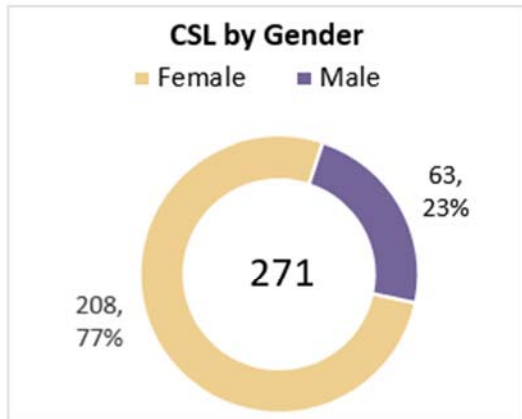
Department by Department Fall and Spring for all 7-Years (COSE)

Note: Remember, spring 2010 and fall 2017 semesters are not included in department data reported below as explained in the introductory statements. However, where indicated “no reported hours” implies either no CSL classes were offered or faculty teaching CSL may not have reported hours into the SFSU-wide registrar/grade-related system.



(photos courtesy of CoES and SFSU websites)

A. DEPARTMENT OF BIOLOGY



13,992
Total Community
Service Hours
(Across 7 terms)

51.63
Average Community
Service Hours

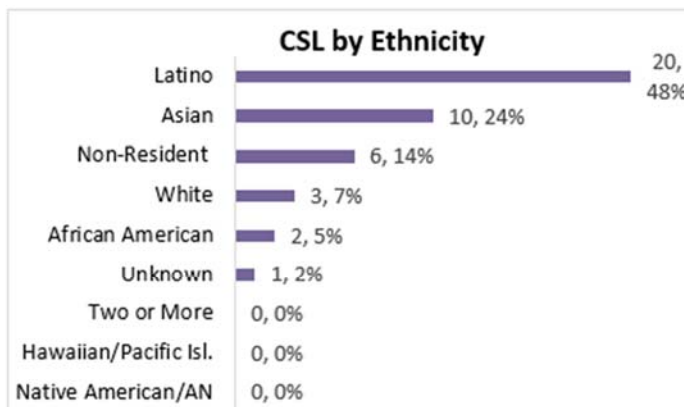
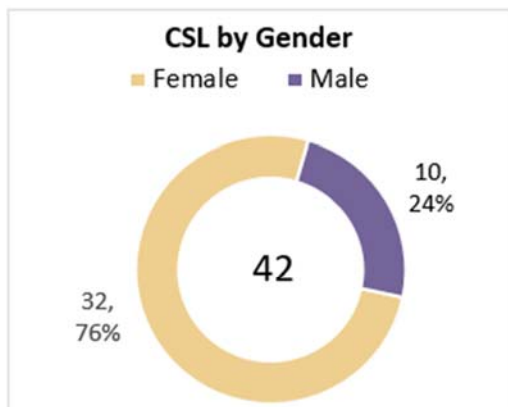
min hrs = 2
max hrs = 500 SD = 62.57

3.05
Average Cumulative
GPA

min gpa = 1.53
max gpa = 4.00 SD = 0.54

- ✓ 271 students enrolled
- ✓ Average cumulative GPA for CSL students = 3.05
- ✓ Total Community Service Hours reported = 13,992
- ✓ Average Community Service Hours = 51.63
 - AY2010-AY2016 (*AIR did not include Spring 2010 and Fall 2017 in this data set*)
 - Highest: (Fall 2010) – 2,772 hours reported
 - Lowest: (Fall 2016) – 62 hours reported
- ✓ Student Level: Freshmen, sophomores, juniors, seniors, and post bacs are represented. Seniors have the highest participation in CSL with 4,452 total CSL hours. Juniors have the next highest participation with 3,880 total CSL hours

B. DEPARTMENT OF CHEMISTRY & BIOCHEMISTRY



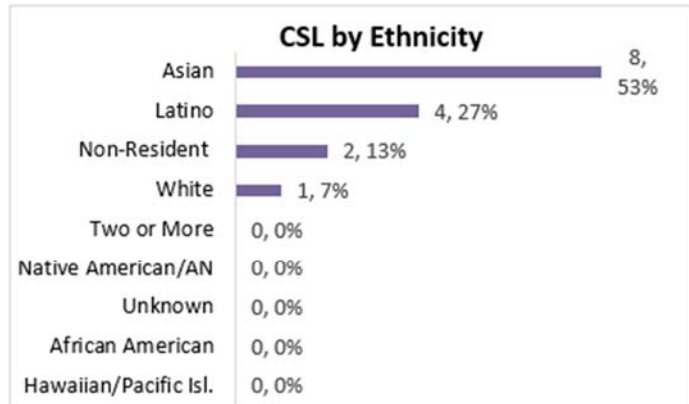
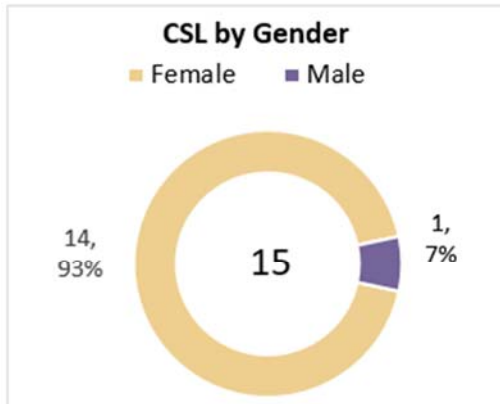
1,734
Total Community
Service Hours
(Across 7 terms)

41.29
Average Community
Service Hours
min hrs = 10
max hrs = 112 SD = 24.60

3.01
Average Cumulative
GPA
min gpa = 1.72
max gpa = 3.88 SD = 0.58

- ✓ 42 students enrolled
- ✓ Average cumulative GPA for CSL students = 3.01
- ✓ Total Community Service Hours reported = 1,734
- ✓ Average Community Service Hours = 41.29
 - AY2010-AY2016 (*AIR did not include Spring 2010 and Fall 2017 in this data set*)
 - Highest: (Spring 2011) – 318 hours reported
 - Lowest: (Fall 2014, Fall 2015, Fall 2016, Spring 2015, Spring 2016) – no hours reported
- ✓ Student Level: Freshmen, sophomores, juniors, and seniors are represented. Freshman have the highest participation in CSL with 673 total CSL hours. Juniors have the next highest participation with 498 total CSL hours

C. DEPARTMENT OF COMPUTER SCIENCE



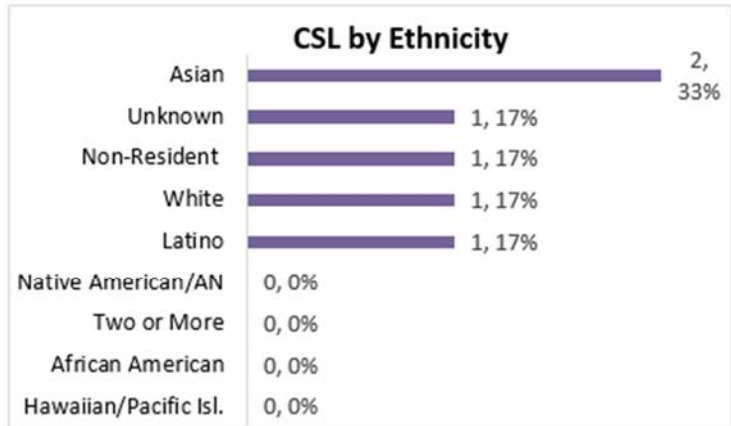
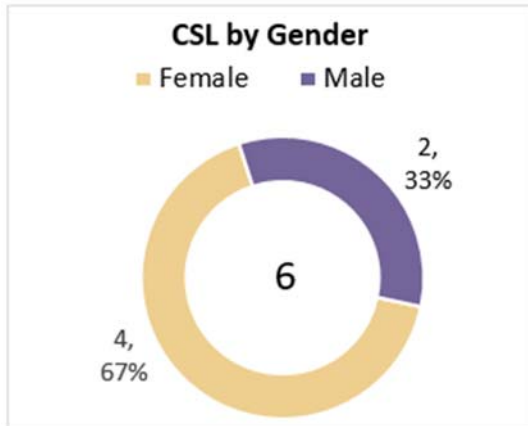
842
 Total Community
 Service Hours
 (Across 7 terms)

56.13
 Average Community
 Service Hours
 min hrs = 10
 max hrs = 320 SD = 78.45

2.58
 Average Cumulative
 GPA
 min gpa = 0.39
 max gpa = 3.54 SD = 0.79

- ✓ 15 students enrolled
- ✓ Average cumulative GPA for CSL students = 2.58
- ✓ Total Community Service Hours reported = 842
- ✓ Average Community Service Hours = 56.13
 - AY2010-AY2016 (*AIR did not include Spring 2010 and Fall 2017 in this data set*)
 - Highest: (Fall 2010) – 320 hours reported
 - Lowest: (Fall 2011, Fall 2014, Fall 2016, Spring 2015) – no hours reported
- ✓ Student Level: Freshmen, sophomores, juniors, and seniors are represented. Only 2 Freshman reported hours between Fall 2010 thru Spring 2017. Only 2 Sophomores reported hours between Fall 2010 thru Spring 2017. Juniors have the highest participation in CSL with 465 total CSL hours. Seniors have the next highest participation with 257 total CSL hours.

D. DEPARTMENT OF EARTH & CLIMATE SCIENCES



160
Total Community
Service Hours
(Across 7 terms)

26.67
Average Community
Service Hours

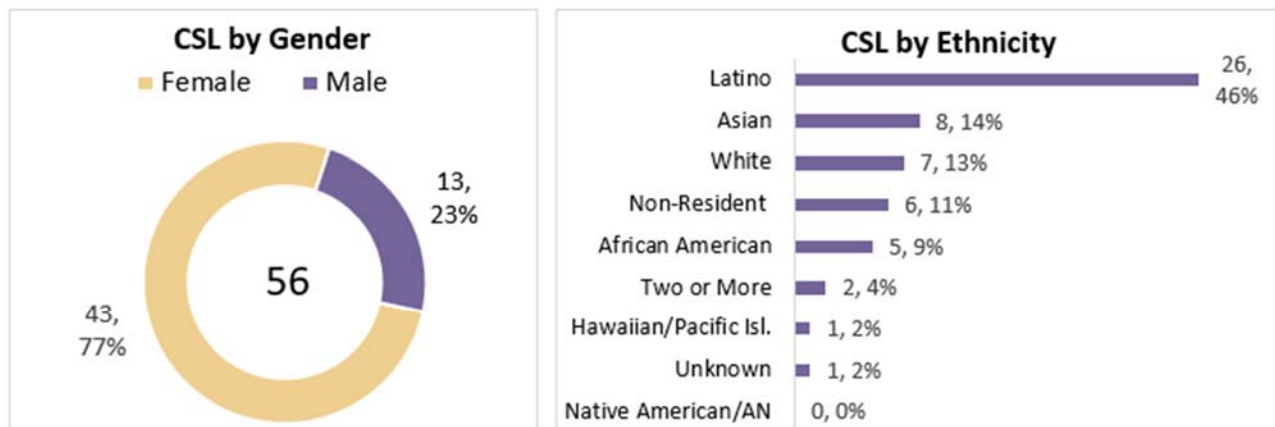
min hrs = 15
max hrs = 47 SD = 10.67

3.44
Average Cumulative
GPA

min gpa = 3.10
max gpa = 3.75 SD = 0.29

- ✓ 6 students enrolled
- ✓ Average cumulative GPA for CSL students = 3.44
- ✓ Total Community Service Hours reported = 160
- ✓ Average Community Service Hours = 26.67
 - AY2010-AY2016 (*AIR did not include Spring 2010 and Fall 2017 in this data set*)
 - Highest: (Spring 2016) – 72 hours reported
 - Lowest: (Fall 2011, Fall 2014, Fall 2015, Fall 2016, Spring 2011, Spring 2012, Spring 2013, Spring 2014, Spring 2015) – no hours reported
- ✓ Student Level: Juniors, seniors, and graduate students are represented. Juniors have the highest participation in CSL with 87 total CSL hours. Seniors have the next highest participation with 49 total CSL hours.

E. SCHOOL OF ENGINEERING



3,083
Total Community
Service Hours
(Across 7 terms)

55.05
Average Community
Service Hours

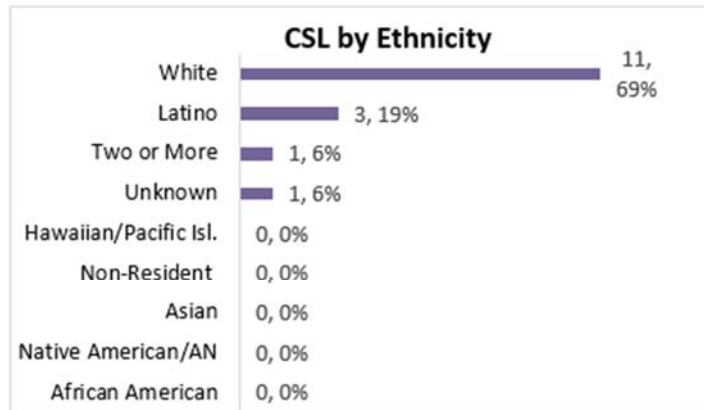
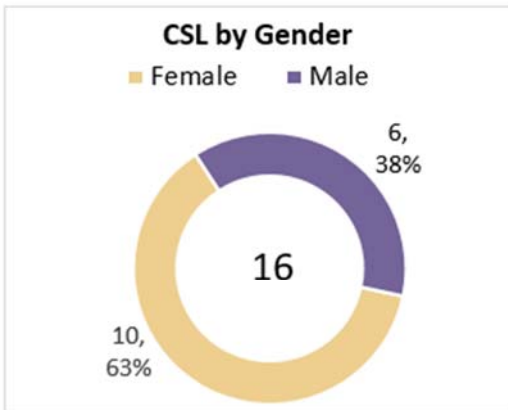
min hrs = 10
max hrs = 350 SD = 72.76

2.77
Average Cumulative
GPA

min gpa = 0.39
max gpa = 3.94 SD = 0.69

- ✓ 56 students enrolled
- ✓ Average cumulative GPA for CSL students = 2.77
- ✓ Total Community Service Hours reported = 3,083
- ✓ Average Community Service Hours = 55.05
 - AY2010-AY2016 (*AIR did not include Spring 2010 and Fall 2017 in this data set*)
 - Highest: (Fall 2011) – 867 hours
 - Lowest: (Fall 2014, Fall 2015, Spring 2015, Spring 2016) – no hours reported
- ✓ Student Level: Freshmen, sophomores, juniors, and seniors are represented. Seniors have the highest participation in CSL with 1360 total CSL hours. Freshmen have the next highest participation with 979 total CSL hours.

F. DEPARTMENT OF GEOGRAPHY & ENVIRONMENT



508
 Total Community
 Service Hours
 (Across 7 terms)

31.75
 Average Community
 Service Hours

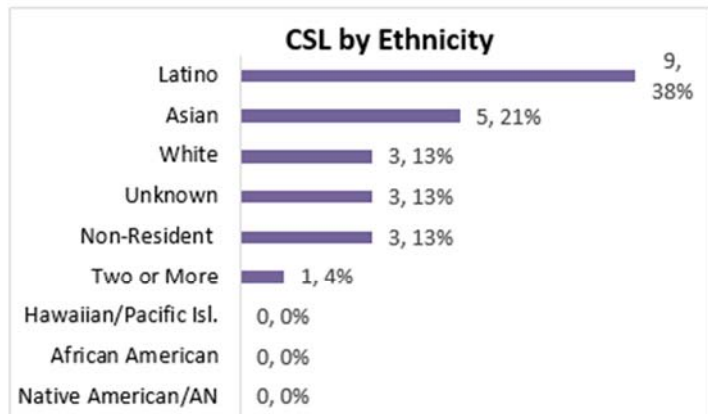
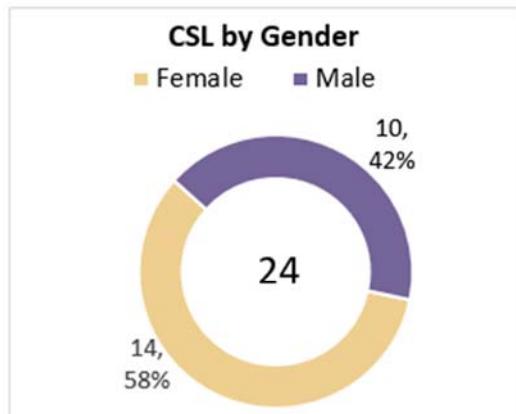
min hrs = 20
 max hrs = 80 SD = 16.20

3.36
 Average Cumulative
 GPA

min gpa = 2.29
 max gpa = 4.00 SD = 0.57

- ✓ 16 students enrolled
- ✓ Average cumulative GPA for CSL students = 3.36
- ✓ Total Community Service Hours reported = 508
- ✓ Average Community Service Hours = 31.75
 - AY2010-AY2016 (*AIR did not include Spring 2010 and Fall 2017 in this data set*)
 - Highest: (Fall 2013) – 236 hours
 - Lowest: (Fall 2012, Fall 2014, Fall 2015, Fall 2016, Spring 2011, Spring 2012, Spring 2015, Spring 2016) – no hours reported
- ✓ Student Level: Freshmen, juniors, seniors, and graduate students are represented. Freshmen and Juniors only have 1 participant each. Seniors have the highest participation in CSL with 260 total CSL hours. Graduate students have the next highest participation with 189 total CSL hours.

G. DEPARTMENT OF MATHEMATICS



1,147
Total Community
Service Hours
(Across 7 terms)

47.79
Average Community
Service Hours

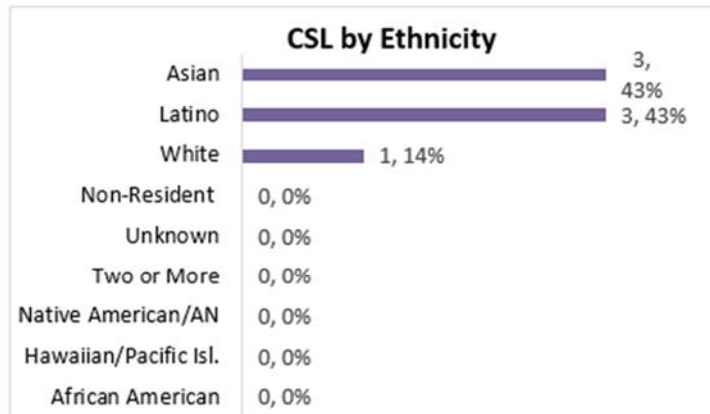
min hrs = 2
max hrs = 204 SD = 42.75

2.99
Average Cumulative
GPA

min gpa = 1.77
max gpa = 4.00 SD = 0.58

- ✓ 24 students enrolled
- ✓ Average cumulative GPA for CSL students = 2.99
- ✓ Total Community Service Hours reported = 1,147
- ✓ Average Community Service Hours = 47.79
 - AY2010-AY2016 (*AIR did not include Spring 2010 and Fall 2017 in this data set*)
 - Highest: (Fall 2010) – 377 reported hours
 - Lowest: (Fall 2014, Fall 2015, Spring 2015, Spring 2016) – no hours reported
- ✓ Student Level: Freshmen, sophomores, juniors, and seniors are represented. Sophomores have the highest participation in CSL with 408 total CSL hours. Juniors have the next highest participation with 314 total CSL hours.

H. DEPARTMENT OF PHYSICS & ASTRONOMY



169
Total Community
Service Hours
(Across 7 terms)

24.14
Average Community
Service Hours

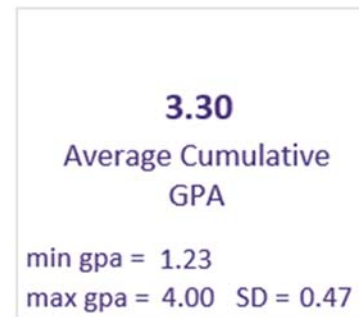
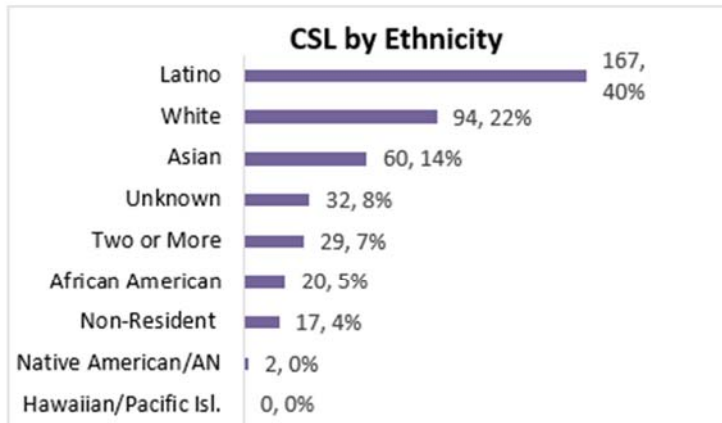
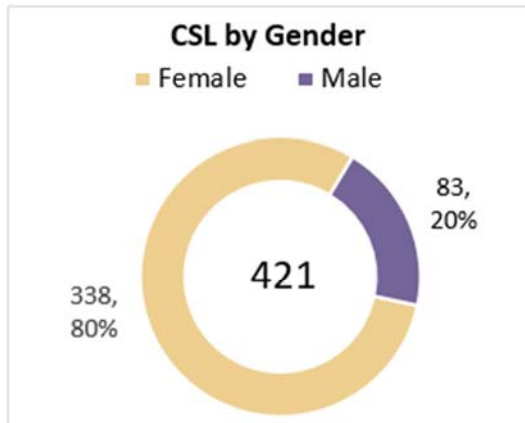
min hrs = 10
max hrs = 40 SD = 9.67

2.89
Average Cumulative
GPA

min gpa = 1.02
max gpa = 3.73 SD = 0.89

- ✓ 7 students enrolled
- ✓ Average cumulative GPA for CSL students = 2.89
- ✓ Total Community Service Hours reported = 169
- ✓ Average Community Service Hours = 24.14
 - AY2010-AY2016 (*AIR did not include Spring 2010 and Fall 2017 in this data set*)
 - Highest: (Spring 2017) – 49 hours reported
 - Lowest: (Fall 2011, Fall 2015, Fall 2016, Spring 2011, Spring 2012, Spring 2014, Spring 2015, Spring 2016) – no hours reported
- ✓ Student Level: Freshmen, juniors, and seniors are represented. Freshmen have the highest participation in CSL with 80 total CSL hours. Juniors have the next highest participation with 69 total CSL hours.

I. PSYCHOLOGY DEPARTMENT



- ✓ 421 students enrolled
- ✓ Average cumulative GPA for CSL students = 3.30
- ✓ Total Community Service Hours reported = 26,516
- ✓ Average Community Service Hours = 62.98
 - AY2010-AY2016 (*AIR did not include Spring 2010 and Fall 2017 in this data set*)
 - Highest: (Spring 2014) – 4,541 reported hours
 - Lowest: (Spring 2016) – 80 reported hours
- ✓ Student Level: Freshman, sophomores, juniors, and seniors are represented. Seniors have the highest participation in CSL with 20,472 total CSL hours. Juniors have the next highest participation with 3,675 total CSL hours.



Findings - what do we learn from this data?

- The Psychology department had the most participation with 421 students. Earth/Climate Sciences had the lowest participation with 6 students.
- Seniors had the highest level of participation in CSL with 415 total students participating in 27,360 hours (56.8% of the total CSL hours).
- Females make up the majority of participants with 72%. (*Note: there were only Male and Females as represented options for student gender in this dashboard data provided by IR*)
- Latino/as make up 45% of CSL participants. White students make up the next highest population with 18%. The racial groups with the lowest participation are Hawaiian/Pacific Islanders and Native Americans with .002% and .004% respectively.

Observations & recommendations for CoSE consideration

- CoSE could create a brief survey for all faculty regarding understanding the barriers and constraints to creating/designating CSL courses.
- Determine how CoSE can dispel any myths that may exist regarding what it takes to teach/manage CSL courses.
- Brainstorm and plan what type of strategy could be created and employed across departments to educate and inform more faculty of the value of CSL to students.
- Establish a platform across the College that can be shared and implemented encouraging faculty to revise and designate their course(s) as CSL using the SF State “Curriculum Inventory Management System”. http://icce.sfsu.edu/csl_course_designation - Such link, for example, could be provided directly on the CoSE page “For Faculty & Staff”.
- It is recommended that the Dean or Assoc. Dean distribute the Keck Study on CSL and STEM students across the CSUs to all faculty across the College and/or post this study to the CoSE website. Keck STEM Service-Learning Study: <https://bit.ly/2XqCAWz>
- Request for ICCE staff to complete this type of report annually to help track and monitor increases, changes, progress, etc. across CoSE.
- Review department internship seminars/courses for Student Learning Outcomes, curriculum field-based goals/objectives, etc. for possible inclusion as a distinctive, designated CSL-type course.

Conclusions

- ✓ CSUs have seen a 114% increase in service-learning (SL) since 1998 (*source: Keck study*).
- ✓ For the 2016-17 academic year, this represents partnerships with 5,000 community organizations, the availability of 3,289 service-learning courses for more than 66,000 engaged students who contribute 1.3 million hours of service to their communities CSU-wide.
- ✓ The Keck STEM Service-Learning study aimed to better understand how service learning is being implemented across the CSU campuses, if there are common underlying elements in implementation, and the overall quality of these elements. With 10 CSU campuses, 47 faculty, and 2,152 students participating, the study found that students who participated in SL courses reported significantly higher civic engagement attitudes at posttest than control students.

- ✓ The study also found that SL students' STEM career attitudes increased from pretest to posttest, while control students' STEM career attitudes decreased from pretest to posttest.
- ✓ Service-learning gives students' direct experience with issues they are studying in the curriculum and with ongoing efforts to analyze and solve problems in the community. A key element in these programs is the opportunity students have to both apply what they are learning in real-world settings and reflect in a classroom setting on their service experiences.
- ✓ Opportunities for improvement are across CoSE yet in particular, departments with smaller numbers of representation (i.e., Dept. of Earth & Climate Sciences and Dept. of Physics & Astronomy) could benefit the most.
- ✓ Educational research suggests that high impact practices, such as service-learning, increase rates of student retention and student engagement among majors and non-majors.
- ✓ Given the research supporting service-learning as a high impact practice for student success, CoSE would benefit from increasing the number of CSL courses across the college.
- ✓ There are a variety of courses across CoSE that do provide service-based experiences that benefit a broad spectrum of community-based organizations and agencies without CSL designation. Finding common language between CoSE and ICCE may be needed to achieve the following: Strengthen understanding of the benefits of CSL designated classes, demystify barriers about processes and class management, and illuminate existing service learning pedagogy across CoSE thereby reinforcing the mission/vision of the College.



(photos courtesy of CoES and SFSU websites)