

Science Learning Center Fall 2019 Report

The Fall 2019 semester is the fourth academic year of implementation of the Science Learning Center student fee, which was implemented to pay for peer tutoring in the Science Learning Center (SLC), as well as partially fund the Supplemental Instructor (SI) program for high-need science courses. Paired with student support funding via the Communities to Provide Active STEM Engagement (CBASE) Grant, the SLC continues to be a robust hub of science student support at Colorado State University Pueblo. In Fall 2019, the SLC logged 3666 visits, with an average of 244 visits per week.

The SLC provides tutoring support for both lower and upper level courses in Biology, Chemistry, and Physics. The following table (Table 1) summarizes student performance from Fall 2019 in Biology, Chemistry, and Physics courses in which the students logged visits. In the following courses, students were broken into two cohorts: those that utilized the SLC for support, and those that did not use the SLC for support. For General Chemistry courses which require students to visit the center for pre-lab quizzes, the number of quizzes were added up by course, and used as a baseline for counting visits (visits by student logged above what would be expected for prelab quizzes were counted towards visitation). In the following table, passing is considered ABC, and failing is considered DFW.

Table 1: Science Learning Center Fall 2019 Course Report						
Courses Reporting SLC Visits						
	Did not utilize SLC			Utilized the SLC		
Course	# Passing	Total #	%	# Passing	Total #	%
BIO 100	52	90	58%	5	6	83%
BIO 181	26	43	60%	51	52	98%
BIO 182	8	18	44%	10	13	77%
BIO 202	33	38	87%	7	7	100%
BIO 206	30	38	79%	11	14	79%
BIO 223	71	101	70%	35	39	90%
BIO 224	42	51	82%	10	10	100%
BIO 301	12	18	67%	7	7	100%
BIO 350	22	24	92%	13	13	100%
BIO 351	9	14	64%	7	7	100%
CHEM 111	9	17	53%	45	53	85%
CHEM 121	9	22	41%	24	39	62%
CHEM 122	8	8	100%	23	23	100%
CHEM 211	4	7	57%	8	8	100%
CHEM 221	5	7	71%	3	3	100%
CHEM 301	10	12	83%	19	24	79%
CHEM 302	8	21	38%	8	10	80%

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CHEM 311	8	9	89%	1	1	100%
CHEM 317	3	6	50%	5	6	83%
CHEM 322	2	3	67%	9	9	100%
CHEM 411	7	9	78%	15	16	94%
PHYS 201	16	24	67%	4	6	67%
PHYS 202	17	17	100%	6	6	100%
PHYS 221	9	17	53%	3	3	100%
PHYS 222	14	16	88%	2	2	100%
Total:	434	630	69%	331	377	88%

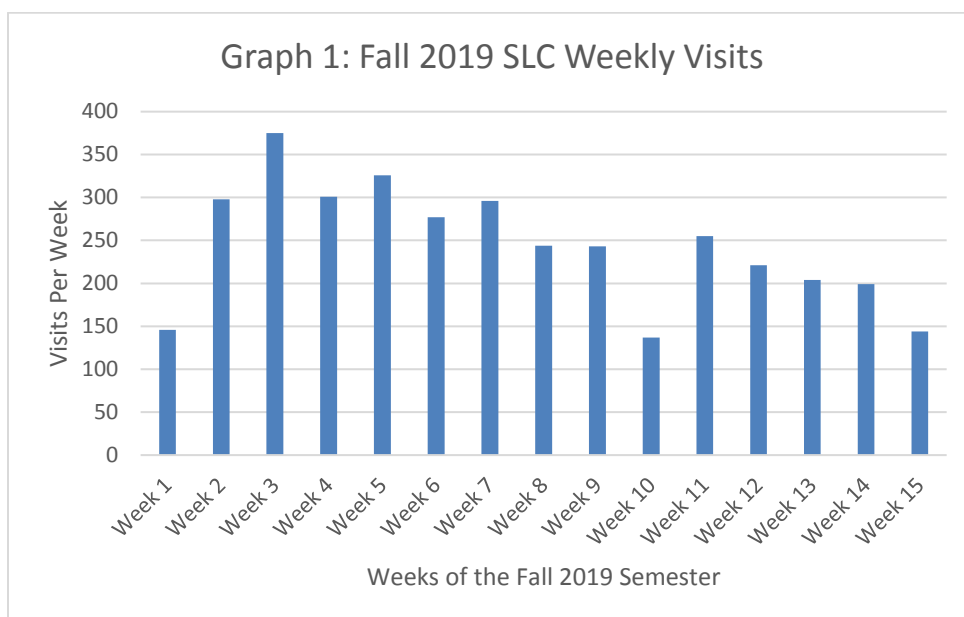
Students who utilize the SLC for support in their science courses are statistically more likely to succeed in their courses. There was a statistically significant difference in passing rates found between students who utilized the SLC for support verses those that did not in the courses noted in Table 1. A breakdown of visits by course is noted in Table 2. The SLC continues to see highest course usage from Chemistry (2996 visits). However, compared to previous semesters, BIO 181 usage has increased notably (350 visits).

The continued usage of the SLC for Organic Chemistry demonstrates the importance of providing tutoring support to upper level courses. While most first year students become introduced to the SLC via compulsory pre lab quiz visits, it is apparent that students continue to seek help and find value in the tutoring support provided as they advance in their coursework beyond their first year. The trend in visits continues to demonstrate that the benefits of utilizing the SLC stretch beyond first year courses, and the SLC continues to support student success as they progress in their courses (Table 2).

Biology		Chemistry		Physics	
BIO 100	29	CHEM 111	899	PHYS 201	33
BIO 181	350	CHEM 121	781	PHYS 202	69
BIO 182	54	CHEM 122	410	PHYS 221	20
BIO 202	20	CHEM 211	98	PHYS 222	16
BIO 206	25	CHEM 221	31	Total:	138
BIO 223	166	CHEM 301	435		
BIO 224	50	CHEM 302	76		
BIO 301	21	CHEM 311	10		
BIO 350	48	CHEM 317	43		
BIO 351	17	CHEM 322	63		
Total:	780	CHEM 411	120		
		Total:	2966		

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The SLC opened on day one of the Fall 2019 semester (Monday, August 26th), and remained open until Friday of Finals Week (Friday, December 13th), and was closed the week of Thanksgiving Break (Monday, November 25th to Friday, November 29th). The SLC logged a total of 3666 visits, with an average of 244 visits per week. Continuing in the trend of the last few semesters, the SLC has seen a decline in student visits. The continued dip in student enrollment has impacted the total number of students that would utilize the SLC. However, it is anticipated that the actual number of student visits is several hundred more than what is demonstrated though the log in system, as reliable student log in is a persistent issue. The SLC experienced a quick climb in visits during the first few weeks, with an easing back to consistent weekly numbers for most of the semester. A particularly slow week was encountered in Week 10 due to weather-related school closures (Graph 1). Visits declined slightly as the semester progressed, and slowed considerably around Thanksgiving Break.



To solicit student feedback, the SLC continued the successful usage of the paper feedback stations located near both exits of the SLC. Students were encouraged throughout the semester to leave feedback for the SLC, and the feedback was regularly collected from the locked boxes by the SLC director. The paper feedback form is simple, consisting of a 5-point Likert satisfaction scale (1 not satisfied to 5 very satisfied), as well as the following two prompts: “Please describe your usage of the Science Learning Center”, and “Please provide feedback you'd like to share with the Science Learning Center Director and tutor staff”. Students who completed the feedback form were not identified, and deposited their feedback forms in the locked mailboxes at each feedback station. The SLC received an average satisfaction rating of 4.88 (out of 5), and ample written student feedback. Below is a summary

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(Table 3) that demonstrates some of the feedback received, broken down by positive feedback and constructive feedback.

Table 3: Fall 2019 Student Feedback
Average student satisfaction rating (out of 5) 4.88
Examples of positive feedback: Everyone is so helpful and welcoming and friendly Love this place Homework and exam help Great productive environment Awesome job
Examples of constructive feedback: Would like more professor time to help the students in SLC More physics tutor help Not all tutors able to help with all courses Longer hours for tutoring Noise is an issue Incorporate an easier system to determine when students need help – similar to what MLC does with hand raisers

In Fall 2019, the SLC employed 17 tutors in three student support areas: SLC walk in tutoring, SI Program, and PASSChem Project (part of the CBASE Grant). The SLC Director met regularly with all three groups, and provided weekly training for the walk in tutoring staff. In the weekly SLC meetings (Mondays 4-5pm), the first half hour was spend on SLC-related topics or tutor training content, and the second half focused on prelab quiz preparation for the week for CHEM 111, CHEM 121, and CHEM 122. Tutor confidence and competence has increased precipitously in supporting the General Chemistry courses since implementing weekly tutor meeting.

A major component of tutor training is focused upon the College Reading and Learning Association (CRLA) certification. The SLC is accredited through the College Reading and Learning Association (CRLA) and our tutors are certified at three different levels: Level 1 (Certified Tutor),

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Level 2 (Advanced Certified Tutor), and Level 3 (Master Certified Tutor). The tutors in the SLC are trained in various tutoring and/or learning strategies and must meet the requirements of CRLA to be certified. During the Fall 2019 semester, the tutors continued worked towards such certifications. By the end of the Fall 2019 semester, 12 out of the 17 tutors had achieved the following certification levels (Table 4).

Level 1:	4
Level 2:	6
Level 3:	2
(Out of 17)	12

In addition to providing opportunities for tutors, the SLC has continued to provide an alternative space for faculty to offer their office hours. In total, four faculty (Dr. Farrer, Dr. Cranswick, Dr. Velasco, and Dr. Erickson) offered a portion of their office hours in the SLC throughout the semester, devoting in total approximately 170 hours of their cumulative time. The regular presence of faculty in the SLC is viewed very favorably by the students and tutors alike, and contributes to a robustly supportive center.