

VPD Mini-Grant Summary Report

Project Title: Student Engagement in the Walter Scott, Jr. College of Engineering at Colorado State University: Impact and Influence on Student Success

Purpose: The aim of this proposal is to gain insight into the unique challenges that face students in the Walter Scott, Jr. College of Engineering (WSCOEE) and the factors that positively affect their college success. In particular, this proposal centers on student involvement in co-curricular activities across WSCOEE as student engagement has been shown to have a significant impact on student success and focuses on the experiences of students of color, women, and first generation, transgender, and non-binary students.

Online survey: After submitting the request to IRB, we created and distributed (October-November 2019) an online survey to all WSCOEE undergraduate engineering students. The survey posed questions pertaining to 1) student awareness of organizations, 2) student involvement in organizations, 3) reasons for being or not being involved, 4) student interaction with engineering faculty (including comfortability attending office hours), and 5) general suggestions for activities for success. A preliminary report of a subset of findings can be found in Appendix A.

Next steps: We will continue to analyze the online survey data and look more closely at how a student's year in school and other demographics compare in student responses. During Spring 2020, we will interview 40 students to understand their experiences as WSCOEE undergraduate students and to specifically gauge student engagement and interactions or their lack thereof with WSCOEE programming. Semi-structured interviews will be about 30 minutes long. We will focus mostly on sophomore and junior level students. We are targeting these years as informal conversations with students have indicated that there is a substantial amount of programming and support available for first-year students, and a sharp decrease in activities and support during the sophomore year and on. The funding for this mini grant will be used to cover student participation in interviews, transcription services, and data analysis.

Impacts and Outcomes: The findings from the interviews will be shared with the WSCOEE Executive Committee and published as peer-reviewed literature. In particular we hope to identify college level issues that can be addressed through the ASA office under the direction of the Associate Dean for Academic Affairs, Dr. Anthony Marchese and inform initiatives led by the Assistant Dean for Diversity and Inclusion, Dr. Melissa Burt.

APPENDIX A

Preliminary report of Student Engagement Survey

Total number of valid responses: n=158

Student awareness involvement:

While about 95% of students were aware of student organizations on campus, only 74% of them reported participating in these types of organizations. In a similar pattern, even though 91% of students said they were familiar with on-campus resources and programs, only 40% of them participated or used these resources and programs.

Table 1: Student participation in or use of on-campus student programming and resources (n=154 for both questions).

	Do you participate in or use?	
	Student organizations or activities on campus but outside of the classroom	On-campus resources or programs
Yes	74.19	40.26
I'm not sure	0.00	0.00
No	25.81	59.74

Reasons for being or not being involved: (n=81)

Reason	Percent
Connect with others/Community	44.44
Enjoyable/meaningful activities	24.69
Not enough time	20.99
Gain experience/be more successful	18.52
Not interested	9.88
Resume	8.64
Work conflicts	4.94
Non-traditionally aged	2.47
Free food	2.47
Make voice heard	1.23
Programs not helpful for their level of classes	1.23
Need services they use	1.23
Trouble getting involved	1.23

Student interaction with engineering faculty:

Students’ comfort level talking with engineering faculty varied, but only 29% of students indicated that they were “always or almost always” comfortable talking with engineering faculty in the college of engineering. While only 5% of students indicated that they were “rarely” or “never or almost never” comfortable, 19% indicated that they were only “sometimes” comfortable. *These responses indicate that about one-quarter of students do not usually feel comfortable talking with engineering faculty, likely a notable barrier to these students engaging and succeeding as engineering students.*

Table 2: Students’ comfort in talking with engineering faculty (n=145)

	Do you feel comfortable talking with engineering faculty in the college of engineering?
Always or Almost Always	28.97
Usually	46.21
Sometimes	19.31
Rarely	4.83
Never or Almost Never	0.69

Attending office hours

While the majority (86%) of students reporting having attended faculty office hours at least once, it is of potential concern that 14% indicated that they had never attended office hours. In combination with the above question, it is clear that a notable portion of students could potentially benefit from additional strategies that help break down barriers that make students feel uncomfortable interacting with faculty and attending office hours.

Table 3: Students’ attendance of office hours (n=145)

	Have you ever attended faculty office hours?
yes	86.21
no	13.79

Reasons why students attend or don’t attend office hours (n=138).

Half the students discussed time, location, and scheduling conflicts. This included both class and work conflicts. Some students also included the privilege around having the time to go to office hours, *“a barrier to this is the fact that I have to work 20+ hours per*

week while accumulating massive debt. Maybe I could attend office hours if I wasn't a proletarian."

Faculty approachability was the second most common answer (24%). Students discussed this both from a positive angle, *"When professors make it clear they are here to help you be successful. Also going with a group of friends. Office hrs are always fun for me because my class makes it that way,"* and from a negative angle, *"I feel that a majority of the male engineering professors are sometimes unapproachable due to their discriminatory behaviors."* Some students also found it difficult to approach faculty because they saw the faculty as very smart or superstars, *"I also sometimes prevent myself from going to office hours because, to be honest, I think all of the professors in the CBE department are REALLY COOL people and I get a bit starstruck. It sound silly, but we have some really intelligent professors with equally cool research in our department."* Students also discussed how some faculty were helpful, while others were not very helpful in explaining the material, *"Professor's ability to explain is a big factor. Some profs are not much help in office hours, but some are life-savers."*

Factor	Percent
Time/location/scheduling	50.00
Faculty approachability	23.91
Go as needed	11.59
Others going helps	5.80
Too crowded	2.17
No questions	2.17
Not helpful	2.17
Fear of looking dumb	2.90
Unsure how/what to ask	1.45
Interest in material	1.45
Ask TA instead	1.45

Of the 36 students who reported being sometimes, rarely, or never/almost never comfortable talking with engineering faculty (low comfort students):

- 80% had attended office hours at least once, 20% had not. Fewer of these students attend office hours.

Have you ever attended faculty office hours?	
yes	80.56
no	19.44

Year	Number of participants
First year/Freshman	8.33
Second year/ Sophomore	19.44
Third year/ Junior	25.00
Fourth year/ Senior	33.33
Fifth year/ Senior	8.33
Second Bachelors Senior	2.78

Demographics:

Student year (n=143)

Year	Percent
First year/Freshman	16.78
Second year/ Sophomore	19.58
Third year/ Junior	25.17
Fourth year/ Senior	25.17
Fifth year/ Senior	12.59
Second Bachelors Senior	0.70

Percent of transfer students (n=143)

Transfer Student	Percent
Yes	15.49
No	84.51

Race/Ethnicity of students (n=143). Students could pick as many choices as they wanted. Students who picked multiple are recorded both in the categories they picked.

Race/Ethnicity	Percent
American Indian or Alaska Native	0.70
Asian	6.34
Black or African American	2.10
Hispanic, Latinx, or Spanish	8.39
Middle Eastern or North African	0.70
White	87.41

More than one (also included in individual categories)	7.69
Prefer not to respond	1.40

Gender identity of students (n=143). Students could pick as many choices as they wanted. No students chose the options intersex, transgender, or two-spirit, therefore these options are not listed in the table. Students who picked multiple are recorded both in the categories they picked (n=3)

Gender	Percent
Female/Feminine	55.24
Genderqueer/Genderfluid	0.70
Male/Masculine	41.26
Nonbinary/Third Gender	0.70
Prefer not to respond	1.40
I don't understand the question	2.10
Total participants	143

Sexual orientation of students (n=143). Students could pick as many choices as they wanted. Students who picked multiple are recorded both in the categories they picked (n=2)

Sexual Orientation	Percent
Asexual	6.29
Bisexual	6.29
Gay	2.10
Lesbian	0.70
Pansexual/Omnisexual	2.10
Straight or heterosexual	76.92
Queer	2.10
Prefer not to respond	2.10
I don't understand the question	2.10
No F* clue, also I don't care	0.70