BOARD # 188: WIP Enhancing STEM Degree Completion: Progress of the Civil and Mechanical Engineering (CAM) Scholarship Program

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WIP: Enhancing STEM Degree Completion: Initiation of the Civil and Mechanical Engineering (CAM) Scholarship Program

Abstract

This paper presents the progress of the Civil and Mechanical Engineering Scholarship (CAM) project. This is a multi-year project to enhance the degree completion of students in civil and mechanical engineering as part of a National Science Foundation Scholarships in Science, Technology, Engineering and Mathematics (NSF-S-STEM) grant. The students participating in this project attend a dual-mission university that aims to provide students with the educational opportunities afforded by both a major university and a community college. The students attending this institution are markedly different than those attending a research-focused institution. Specifically, 37% are first generation, 80% work while enrolled, 30% are over 25 years old, and only 48% are full-time students. These circumstances create challenges in degree completion, leading to high attrition rates at the university level. Specific to the Mechanical and Civil Engineering programs, the first-year retention rate for students starting in 2020 was 64%. This paper will discuss the first-year experience in implementing the project framework which includes (i) scholarship awards, (ii) multi-layered mentoring, (iii) social and academic support via active, collaborative, and inclusive cohorts, (iv) professional preparation, and (v) high impact practices. The main research question for this project is; do these interventions improve graduation and retention rates for students in mechanical and civil engineering? Survey results of the current students will be presented, along with reflections from the investigators and planned improvements for the following years' cohorts.

Background

Utah Valley University enrolls 47,000 students and has a dual mission—that of a comprehensive university, offering 91 bachelor's and 11 master's degrees, and that of an open-admissions community college, offering 65 associate degrees and 44 certificates and diplomas. Student demographics are similar to those of a community college. There is no University housing, so all students are commuters. The University has a high percentage of low-income (33%) and first-generation (37%) students. Among degree-seeking students, there is a high number of non-traditional students (30%), students with spouses (37%) and students with children under age 12 (19%). While tuition is low, part-time attendance is high at 36% of students. These factors affect the overall graduation rate, which is low at 35% (nationally standardized IPEDS rate for completions in 150% time) and the overall 1-year retention rate of 68% for baccalaureate-degree seeking students. Institutionally, Utah Valley University receives by far the greatest amount of Pell grants awarded to students at any public institution of higher education in its state (NCES 2020/21).

The Mechanical and Civil Engineering Degree programs were initiated in Fall 2018 with funding from the Utah State Legislature and the state's Engineering and Computer Science Initiative. With an initial enrollment of 220 students (at various academic levels), these two accredited programs now enroll 550 students. Demographics for the ME/CIVE degree programs mirror those of the institution with one noticeable difference – only 11% of students in these programs

are women, compared to 49% of students at the University. Minority student and first-generation student participation are 2–3% lower than the University.

The CAM scholarship project was started in the Spring of 2024 with the award of a National Science Foundation Scholarships in Science, Technology, Engineering and Mathematics (NSF-S-STEM) grant. The goal of the CAM project is to increase the graduation and retention rates for students in ME and CIVE at the University and develop their potential for success in the STEM workforce by providing scholarships to academically talented students with financial need. The project aims to achieve this by providing CAM scholars with evidence-based support and activities. This includes financial support, multi-layered mentoring, social and academic support, professional preparation to meet regional job demand, and implementation of high impact practices. The literature review and support for these program focus areas and interventions has been previously presented [1]. This paper presents the experience and progress of the CAM project in each of these areas during the first year.

Scholarship Awards

The CAM project planned to award scholarships to 12 students for the first year's cohort. The process for awarding the scholarships is outlined in a previous paper [1]. However, there were several challenges which affected the number of scholarships that were awarded. The first challenge was the funding date for the grant. Officially funded in February of 2024, the project team faced an accelerated timeline of posting the scholarship in the University financial aid system as well as being able to advertise the scholarship to new, incoming students. To advertise the scholarship, a website was created as well as flyers, posters and digital signage on campus that directed potential applicants to the website. Locations across campus were identified to place flyers where incoming students could receive the information including the Engineering department office, the College advising office, the Campus Tours office, the Military-Affiliated Student Hub and the Women's Center. Additionally, the college outreach representative took flyers on visits to local high schools during recruiting events.

Another recruitment challenge was the delay of the U.S. Department of Education in releasing the Free Application for Federal Student Aid (FAFSA), which was required for students to complete according to the terms of the grant. According to a September 2024 report by the Government Accountability Office (GAO) [2], the U.S. Department of Education's rollout of the new simplified FAFSA was delayed by three months from the traditional October launch in 2023, and was hampered by a series of technical problems that blocked many students from completing the application. Ultimately, students could not access the FAFSA and complete their scholarship applications at the university until the end of June 2024. Relatedly, the state of Utah has one of the lowest rates for FAFSA completion in the country, leading to a vastly reduced pool of potential scholarship precipitants [3].

Due to these challenges, and other potential, unidentified factors, only 4 of the potential 12 scholarships were awarded for Fall 2024. One of the 4 students was forced to defer the scholarship due to health issues which prevented him from enrolling in classes this year. Additionally, during Fall semester 2024, the scholarship was re-opened for Spring 2025 awards. Marketing and communication were focused on current Freshman students in the ME and CIVE

programs in an attempt to award the remaining scholarships for the first-year cohort. While approximately 15 students applied for the scholarship, only 5 completed the FAFSA. After screening and reviewing the completed applications, only 2 additional awards could be made to bring the total scholarship awards to 5 for the first year.

One early take-away from the first year's awarding experience is an apparent resistance of students to complete the FAFSA to apply for the scholarship. Whether the application process is seen as overly burdensome or if there are other political or personal objections to completing the government forms, potential scholarship applicants are being missed due to low FAFSA completion. This issue will require further inquiry and research to determine a strategy to increase student applications.

Multi-Layered Mentoring

Researchers have found that a multi-layered mentoring approach provides students access to diverse avenues of support, where tier of mentoring plays a vital role in helping mentees navigate their undergraduate education and future career spaces [4]. Discipline experts (including faculty and industry mentors) provide field-specific details, student peers (such as upper division students in the program) help to provide a supportive environment via formal and informal settings, and dedicated staff provide a framework that ensures efficient flow of the program and adequate support. Reference to past studies by others that led to the adoption of this approach in this scholarship project has also been provided in our previous paper [1].

The CAM program uses a comprehensive mentoring approach to support students' academic success, persistence, and career goals. The program includes distinct roles for faculty, peer, and industry mentors. Faculty mentors will work with students to: develop Individual Education and Development Plans (IEDPs), advise on coursework, and connect students with resources. Faculty meet regularly with their mentees to guide growth and foster outcomes like persistence and completion. Peer mentors, who are upper-division students, will provide insights on navigating academic and social life, offering first-year students relatable guidance and support. Gender-matched pairings aim to enhance belonging and motivation. Additionally, Industry mentors who are selected from local engineering professionals, will guide small student groups, offering career advice, networking opportunities, and insights into industry-relevant skills.
The multi-layered mentoring program began in the first semester with the assignment of a faculty mentor to each student. The mentors met each month with their assigned student as part of the monthly cohort activities. These activities were generally informal events allowing for more personal interactions between students and mentors. Peer mentoring will begin in the following program year. The current cohort of students will serve as the first peer mentors. The students have already shown a willingness to mentor new students by participating in recruitment activities. Industry mentors have been identified and met with students during the Spring semester as part of the monthly cohort activities.

The program monitors participants' engagement in mentoring and tutoring, as well as their academic performance and degree progress. Scholars are surveyed annually on their mentoring experiences, and faculty mentors submit regular reports. This multi-layered mentoring strategy is

designed to maintain students' momentum toward degree completion and prepare them for successful engineering careers.

Social and Academic Support

In addition to the mentoring support, the students in the cohort are expected to take the Introduction to Engineering course together. Of the original 4 students who were accepted in the program, one had already taken this course the previous semester with one of the faculty mentors as their instructor, a second had taken a similar course at another institution and transferred the credit, leaving just two students to take the Introduction to Engineering course. Through communication and arrangements of the students' schedules, both registered for the same course. Unfortunately, one of those registered for the course had significant medical issues that forced them withdraw from classes on a medical leave of absence. Overall, from this first cohort of students, only 1 remained in the Introduction to Engineering course but did take the section led by one of the faculty mentors.

As discussed, additional students were recruited to the program receiving Spring scholarship awards. The recruitment of these two students was due in large part to efforts of the current scholarship students who visited the Introduction to Engineering courses to encourage current students to apply for the scholarship. As such, these additional students have already taken the Introduction to Engineering course section with our faculty mentors.

During the first semester, the first cohort members showed a high level of participation in some extracurricular engineering activities such as participating in designing and testing an autonomous airplane tug vehicle, constructing a pumpkin-tossing trebuchet and competing regionally, and attending an engineering tour of the new Engineering Building being constructed on campus. Additionally, one student has received and begun working as an intern at an engineering firm.

The tutoring centers on campus have been able to provide tutors for many of the math and science courses that our cohort students are taking. In future years, as the cohort students enter more engineering core courses, there will be an increased need to recruit and hire tutors to cover them.

Professional Preparation via ePortfolios

As previously stated in the preliminary project paper, ePortfolios will be introduced as one of the High Impact Practices to be introduced to the scholars [1]. Researchers have stated that "*e-Portfolios* have the potential to facilitate deeper understanding of course content, make the curriculum more relevant for students, and to help build connections between classroom and professional learning competencies"[5]. Researchers have also found that e-Portfolios are beneficial to students in enhancing the acquisition of knowledge, managing their learning, eliminating test anxiety, and reflecting on newly acquired knowledge [6].

The final meeting of Fall semester between the faculty mentors and scholarship students was used to introduce ePortfolios to the students. None of the scholarship students had ever created

an ePortfolio before, so the faculty focused on the general concept of ePortfolios, what resources are available to the students to create one, and why they should strongly consider creating an ePortfolio during their studies. As ePortfolios are not a required element at the university nor for the mechanical or civil engineering programs, and thus an extracurricular activity, the mentors could only encourage the students to create one rather than requiring ePortfolios as part of the scholarship.

The students were shown examples of ePortfolios created by engineering and non-engineering students to help illustrate what they could consider including in an ePortfolio, including projects they work on in and outside of their classes. One benefit of the ePortfolio model is the ability to vividly showcase projects in much more detail through pictures and videos, as well as not being constrained by a single page such as a resume.

Due to ePortfolios limited use on campus, the university does not have any formal tools or software packages for students to utilize. Despite this limitation, several free and limited cost tools exist for the creation and hosting of the ePortfolio. After consultation with the university's Office of Teaching and Learning, several options were recommended to the students for creating their ePortfolio including Weebly and WordPress. The mentors also mentioned Google Docs, however, the university no longer uses Google accounts and therefore the students would have a difficult time using their university contact information if they chose to use Google Docs. Additionally, two website links were provided to the students, as helpful guides for the creation of their Portfolio [7], [8].

The mentors ended the meeting by discussing some of their personal reasons for how the students could benefit from creating and maintaining an ePortfolio. These reasons tended to focus on assisting with internship and career opportunities, developing soft skills through effective written communication, and aiding in the retention of the skills and knowledge they acquired during their courses. This rationale will be revisited in later semesters when the students are interacting with their industry mentors, which was discussed above.

High Impact Practices

The CAM program integrates high-impact practices (HIPs) to enhance student retention, learning, and academic momentum. The preliminary paper on this project offers a detailed explanation and foundational framework for implementing these HIPs [1]. Designed to provide significant learning experiences, these practices include collaborative projects, capstone projects, internships, ePortfolios, and mentored undergraduate research. Participants will collaborate with faculty mentors to plan their annual participation in HIPs, ensuring steady progress toward degree completion. Collaborative projects will foster cohort formation through team-based activities in courses and design competitions. Capstone projects will provide senior students with opportunities to apply their knowledge through meaningful industry-linked initiatives, supported by faculty mentorship and funding for materials.

During the first year of the program, students have engaged in several HIPs. Some of these include participation in collaborative design projects, specifically the design and building of an autonomous airplane tug and constructing and competing with a pumpkin-tossing trebuchet.

Although it wasn't expected that students at this stage of their education would work as interns, it was encouraging to see one student's initiative in getting hired and beginning work as an intern at an engineering firm. More emphasis will be placed on helping students participate in HIPs as they progress through the program.

Annual Survey Results

A survey was administered to the Fall and Spring cohort of 5 students during March 2025. This survey was fully approved by the University's formal IRB review process prior to the awarding of the scholarship grant. All scholarship recipients are asked to complete a written informed consent form if they are willing to participate in this and other surveys throughout the scholarship duration. The full informed consent form and survey are included in the Appendix with all identifiable information having been removed.

The survey results are summarized below. Table 1 shows answers to yes/no and Likert scale questions and Table 2 presents student answers to open response questions. For this initial survey collection, the authors were focused on questions 3-12 and 14-18, as they pertain to scholarship activities that would be available to the students during their first year.
Data from the first survey offers some valuable insights into the efficacy of the CAM program during its first year. There was a 100% response rate for the first survey. All the students answered in the affirmative to Q3 and Q5 showing that the scholarship has helped them progress more quickly through the program and maintain high academic standards. This is also shown in the open responses to Q4 and Q6. Despite the financial assistance, three students indicated that they still had jobs during the school year with two students working more than 30 hours a week. Despite still working, all three students responded to Q9 saying they were working fewer hours than they would have without the scholarship. Another important finding of the survey is the positive impression students have had interacting with faculty both as peer mentors and through the CAM cohort events. The open responses indicate the students found a lot of value not only in the formal mentoring presentations, but especially through informal conversations with the CAM faculty. Only two students indicated that they took advantage of academic tutoring. Additionally, two students indicated ePortfolios were highly valuable, although no students reported that they had created an ePortfolio.

Most of the student responses match the authors' expectations and at least initially align with the design of the CAM scholarship program. With additional scholars joining next year and another round of surveys, the authors will be looking to see how responses change as the students' progress through the program.

Table 1: Summary of Numerical CAM Scholar Survey Questions

Question								
Q3: Has receiving an NSF CAM scholarship helped you progress toward a degree more quickly?	Yes	No						
	5	0						
Q5: Has receiving an NSF CAM scholarship helped you maintain high academic standards?	Yes	No						
	5	0						
Q7: Have you held a job, either on or off campus, while going to school under the NSF CAM scholar program?	Yes	No						
	3	2						
Q8: How many hours do you work in a typical week?	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41+
	1	0	0	0	0	1	1	0
Q9: Since you received the NSF CAM scholarship, did you work fewer hours, either on or off campus, than you would have otherwise?	Yes	No						
	3	2						
Q11: Please rate the following CAM Scholarship activities on a scale of 1 to 3, with 1 being very valuable to 3 being least valuable	1	2	3	N/A				
Q11a: Faculty Mentoring	5	0	0	0				
Q11b: Peer Mentoring	1	1	0	3				
Q11c: Industry Mentoring	1	2	0	2				
Q11d: CAM Participation Meetings	4	1	0	0				
Q11e: Academic Tutoring	1	1	0	3				
Q11f: Internship(s)	2	0	0	3				
Q11g: Common Coursework/Projects	3	0	0	2				
Q11h: ePortfolio	2	1	0	2				
Q14: Did you create an ePortfolio?	Yes	No						
	0	5						
Q15: What was the most beneficial outcome from creating your ePortfolio?	N/A							
Q16: Did you seek tutoring?	Yes	No						
	1	4						
Q17: Were you able to obtain the tutoring you needed?	Yes	No	N/A					
	1	0	4					
Q22: Do you plan to attend graduate school?	Yes	No	N/A					
	1	3	1					
Q23: Are you currently employed?	Yes	No						
	4	1						
Q24: What is the name of your employer or company name?	Omitted for students privacy							
Q25: Is your job in a Science, Technology, Engineering, or Mathematics field, including the computer science field?	Yes	No	N/A					
	1	2	2					
Q26: How long have you been working for this employer?	< 6 months		6 - 12 months		1-3 Years		3-5 years	5+ years
	0		0		2		0	1

Table 2: Summary of Open Response CAM Scholar Survey Questions

Question	
Q4: How has receiving the scholarship helped you progress toward a degree more quickly?	- "It has helped me be able to take more classes because I don't have to work as much or worry about money as much, so I feel like I have a much better GPA and I'm passing all my classes."
	- "It has significantly reduced the amount of financial burden on myself, I actually have to work a full time job so not having to work as many hours allows me to focus more on school and take more credits."
	- "Taking financial burden off of my chest so I don't have to take semesters off to make sure I can pay for school."
	- "I've been able to focus more on my school than before, so I'm able to take a couple more credits and not work as much."
Q6: How has receiving the scholarship helped you maintain high academic standards?	- "It has just freed up more time for me to spend studying."
	- "It gives me more focus and time to work on specifically my coursework and not so much have to worry about the financial burdens of being an adult."
	- "More motivation to keep my grades up so I don't lose the scholarship."
	- "I've pushed myself a lot more to meet the requirements I've needed to, and I've tried to go above and beyond and be a good example."
	- "By having to keep my grades up to keep it."
Q10: Aside from the financial benefits of the scholarship, what do you feel was the most valuable aspect of the NSF CAM scholarship program?	- "I would say it enables you to make more connections with mentors and people who have connections in the industry."
	- "I've made a lot of friends with fellow engineers, and personally getting to know the professors has helped me a lot too with questions about my career and stuff."
	- "Having a faculty mentor."
	- "It's been really nice to get to know the professors who are a part of the program and see their point of view. They help me figure out what classes I want to take and learn a little bit more about what they expect."
	- "The mentors."
Q12: Which mentoring did you find most valuable and why?	- "I would say just being able to have conversations with some of the professors about different areas they went into and kind of showing me the spectrum of paths you can go down."
	- "The professors, I found it really helpful to sit down and talk with them about my career, its really helped me get ready for the future and know what I need."
	- "I found the internship mentoring most valuable as it helped me get a better feel for what I want to do in the engineering field."
	- "Just talking to my actual professors who are in chage and getting their point of view, I've been taking advantage of talking to all my professors and mentors."
	- "Being able to talk to someone who has done the program is a big help with understanding it."
Q13: Which common coursework or project did you find most valuable?	- "Resume"
	- "Being part of the capstone project was a really fun thing to do. This semester I haven't been super involved with it, but it's been a really cool experience to be a part of."
Q15: What was the most beneficial outcome from creating your ePortfolio?	N/A
Q18: What course or courses were you unable to receive tutoring for?	No responses
Q27: Was there anything missing from your program at UVU that you feel would have been valuable in your current job?	- "I wouldn't say that's applicable because I'm still going through school to get a job in that career path."
	- "Well my current job isn't related to the program or what I'm studying at school, so I wouldn't know."
	- "From what I've seen a lot of the stuff I've been involved with has been really helpful for what I do right now, so I wouldn't say anything is missing."
	- "No"

Conclusion

The CAM scholarship program began in the Spring of 2024 with the first students entering the program in Fall 2024. The goal of the CAM project is to increase the graduation and retention rates for students in ME and CIVE at Utah Valley University and develop their potential for success in the STEM workforce by providing scholarships to academically talented students with financial need. Due to challenges in recruiting and the application process, a total of 5 students were awarded scholarships instead of the 12 hoped for. The progress of the first year's efforts in the major program areas of financial support, multi-layered mentoring, social and academic support, professional preparation to meet regional job demand, and implementation of high impact practices were presented. Student participants in the program were surveyed in March 2025 and the results of the survey were presented.

A major emphasis for future work on this project will be to better understand reasons for the low numbers of completed scholarship applications and employing strategies to increase the number of completed applications to maximize the cohort awards. Work will continue with implementation of the program areas, especially those intended for students further along in the program such as peer mentoring, collaborative project involvement, and internships.

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Appendix

Informed Consent Form:

National Science Foundation Scholarships in STEM Grant number XXXXXXX

Civil and Mechanical Engineering (CAM) Scholarship Program

Letter of Informed Consent to Scholarship Winners

Congratulations, you have been awarded a scholarship as part of the CAM Scholarship Program at {Removed} University (XXU)! As part of the CAM Scholarship program, you will be asked to participate in several different survey's, focus groups, interviews, and collection of academic records to help the investigators evaluate the effectiveness of the scholarship program and identify opportunities to improve the overall program. Most of these activities will be administered by an external evaluator that was hired as part of the NSF grant and any personally identifying information will be removed by the evaluator to ensure confidentiality.

By accepting the CAM scholarship and signing this letter, you are agreeing to participate in an annual 5-15 minute survey, a post-graduation 5-15 minute survey, and 1-2 interviews and focus groups per year each lasting less than 30 minutes. You may choose not to answer a question or are free to withdraw consent and discontinue participation in the activity at any time for any reason. Participation in this study is voluntary and declining will not impact your scholarship. The survey's, focus groups and interviews will be used to better understand your experience as a participant in the CAM Scholarship program including what was most and least valuable. No audio or video recording will occur during any of the activities associated with this study.

There are no known risks associated with participating in this program. The individual benefits for participating in this program include the scholarship and all associated evidence-based activities that have been designed to provide individualized support throughout your studies.

The surveys will take place either online, through Qualtrics or via phone or video chat. The data will be stored on a password protected computer. All activities will remove any personally identifying information and you will not be identified in any publications. The information collected in this research may be used for future research studies or grant proposals after all personally identifiable information has been removed. Your contact information will be collected as part of the CAM Scholarship program in order to reach out each semester that you are an active participant, so by accepting this agreement you agree to be contacted in the future as necessary.

If you have any questions complaints or if you feel you have been harmed by this research please contact the Principle Investigator Dr. {Removed}, {Removed} University, at {Removed email address}.

Contact the Institutional Review Board (IRB) if you have questions regarding your rights as a research participant. Also, contact the IRB if you have questions, complaints, or concerns which you do not feel you can discuss with the investigator. The {Removed} University IRB may be reached by e-mail at {Removed email address}.

By participating in the CAM Scholarship Program, you are giving your consent to participate in this research. Thank you for your willingness to participate!

Name:_____   Date:_____

Annual Student Survey:

Annual NSF CAM Scholarship Recipient Survey

Q.1 Hello, this is_____ from {Removed} University's Office of Institutional Research. May I speak with [ANSWER TO Q. 36]?

Q.2 We are calling students who have participated in XXU's CAM Scholarship program which was funded by the National Science Foundation's Scholarships in STEM program. As a reminder of the Informed Consent Letter you have previously signed, your responses will help us improve the program and report on its successes as we apply for future scholarship opportunities. Your participation is completely voluntary. You may choose not to answer a question or are free to withdraw consent and discontinue participation in the survey at any time for any reason. Contact the Institutional Review Board (IRB) if you have questions regarding your rights as a research participant. Also, contact the IRB if you have questions, complaints, or concerns which you do not feel you can discuss with the investigator. The {Removed} University IRB may be reached by e-mail at {Removed email address}. Would you have a few minutes now?

Q 3 Has receiving an NSF CAM scholarship helped you progress toward a degree more quickly?

❑$_1$ Yes
❑$_2$ No

❑$_3$ Don't Know / Not Sure

[IF THE ANSWER TO QUESTION 3 is 2 or 3, THEN SKIP TO QUESTION 5]

Q.4 How has receiving the scholarship helped you progress toward a degree more quickly?
_____
_____

Q.5 Has receiving an NSF CAM scholarship helped you maintain high academic standards?

❑$_1$ Yes
❑$_2$ No
❑$_3$ Don't Know / Not Sure

[IF THE ANSWER TO QUESTION 5 is 2 or 3, THEN SKIP TO QUESTION 7]

Q.6 How has receiving the scholarship helped you maintain high academic standards?
_____
_____

Q.7 Have you held a job, either on or off campus, while going to school under the NSF CAM scholar   program?
❑₁ Yes
❑₂ No

[IF THE ANSWER TO QUESTION 7 is 2, THEN SKIP TO QUESTION 10]

Q.8 How many hours do you work in a typical week?

❑₀₁ 0-5 hours
❑₀₂ 6-10
❑₀₃ 11-15
❑₀₄ 16-20
❑₀₅ 21-25
❑₀₆ 26-30
❑₀₇ 31-35
❑₀₈ 36-40
❑₀₉ 41-45
❑₁₀ 46-50
❑₁₁ Over 50 hours
❑₁₂ Refused

Q.9 Since you received the NSF CAM scholarship, did you work fewer hours, either on or off campus, than you would have otherwise?
❑₁ Yes
❑₂ No
❑₃ Not Sure / Refused

Q.10 Aside from the financial benefits of the scholarship, what do you feel was the most valuable aspect of the NSF CAM scholarship program?
_____

Q.11 Please rate the following XXU CAM Scholarship activities on a scale of 1 to 3, with:
  1: indicating the activity was very valuable,
  2: indicating the activity was of some value, and
  3: indicating the activity was less valuable.
  6: Did not attend or Not relevant.

	1: activity was very valuable	2: activity was of some value	3: activity was less valuable	6: Did not Attend or Not relevant
Faculty Mentoring	❑₁	❑₂	❑₃	❑₆
Peer Mentoring	❑₁	❑₂	❑₃	❑₆

Industry Mentoring	❏1	❏2	❏3	❏6
CAM Participation Meetings	❏1	❏2	❏3	❏6
Academic Tutoring	❏1	❏2	❏3	❏6
Internship(s)	❏1	❏2	❏3	❏6
Common Coursework/Projects	❏1	❏2	❏3	❏6
ePortfolio	❏1	❏2	❏3	❏6

Q.12 Which mentoring did you find most valuable and why?

_____

_____

[IF THE ANSWER TO SUB-QUESTION 7 OF QUESTION 11 IS NOT 1, THEN SKIP TO QUESTION 14]

Q.13 Which common coursework or project did you find most valuable?

_____

_

Q.14 Did you create an ePortfolio?

❏1 Yes
❏2 No

[IF THE ANSWER TO QUESTION 14 is 2, THEN SKIP TO QUESTION 16]

Q.15 What was the most beneficial outcome from creating your ePortfolio?

_____

_____

Q 16 Did you seek tutoring?   ❏1 Yes
❏2 No

[IF THE ANSWER TO QUESTION 16 is 2, THEN SKIP TO QUESTION 19]
Q.17 Were you able to obtain the tutoring you needed?

❏1 Yes
❏2 No

Q.18 What course or courses were you unable to receive tutoring for?

_____

_____

Q.19 Did you conduct a capstone or senior design project?
❏1 Yes
❏2 No

[IF THE ANSWER TO QUESTION 19 IS 2, THEN SKIP TO QUESTION 21]

Q.20 How was your capstone or senior design project experience of value to you?

_____
_____

Q.21 Are you currently enrolled in graduate school?

❑₁ Yes
❑₂ No

[IF THE ANSWER TO QUESTION 21 IS 1, THEN SKIP TO QUESTION 23]

Q.22 Do you plan to attend graduate school?

❑₁ Yes
❑₂ No

Q.23 Are you currently employed?
       ❑₁ Yes
       ❑₂ No

[IF THE ANSWER TO QUESTION 23 IS 2, THEN SKIP TO QUESTION 29]

Q.24 What is the name of your employer or company name?
_____

Q.25 Is your job in a Science, Technology, Engineering, or Mathematics field, including the computer science field?
❑₁ Yes
  ❑₂ No

Q.26 How long have you been working for this employer?

                                          ❑₁ Less than six months
❑₂ Six months to one year
❑₃ One to three years
❑₄ Three to five years
❑₅ More than five years

[IF THE ANSWER TO QUESTION 23 IS 2, THEN SKIP TO QUESTION 29]

Q.27 Was there anything missing from your program at XXU that you feel would have been valuable in your current job?
❑₁ Yes
❑₂ No

Q.28 [Interviewer: *Enter response:* "Was there anything missing from your program at XXU that you feel would have been valuable in your current job?]

_____

Q.29 [ANSWER TO Q. 36] That concludes our survey. Thank you for your time. Have a nice day.

Q.30 Interviewer	Q.37 Imported Variable 2 Student Last Name 30 Characters
Q.31 Date	Q.38 Imported Variable 3 Gender 4 Characters
Q.32 Time	Q.39 Imported Variable 4 Phone 2 16 Characters
Q.33 Duration	Q.40 Imported Variable 5 Phone 3 16 Characters
Q.34 Call Result	
Q.35 Telephone Number	Q.41 Imported Variable 6 Student UVID 10 Characters
Q.36 Imported Variable 1 Student First Name 25 Characters	Q.42 Imported Variable 7 Flag = 1
	Short version