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Evaluation of three consecutive NSF S-STEM Awards (2008 – 2021) at a Predominantly Undergraduate Institution

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Abstract

From 2008 to 2021, Gannon University was awarded three National Science Foundation S-STEM awards (0806735, 1153250, and 1643869) amounting to $2.2 million. These awards provided a total of 300 one-year scholarships to engineering and computer science academically talented students having financial need. The program developed at Gannon University provided an educational experience emphasizing technical mastery, personal and professional development, and community engagement through partnerships with nonprofit organizations in the local community. At its inception, the program was one-of-a-kind, providing a unique tool to intentionally connect technical education with the community-service mission of the university. The program developed and lessons learned through the eight years of the first and the second awards were previously detailed in another publication. 2021 marked the completion of the third award with 63 scholars graduating with a STEM degree who completed the program and with $1.76 million dispersed directly to scholarships. To-date, without NSF funding, the program continues to exist with university funds to support the scholarships.

In the current paper, the authors summarize the implementation of new activities, lessons learned, and the evolvement of these three grants. Emphasis will be given to describe responsive changes made after the second grant activity incorporated in the third iteration of the grant, and lessons taken from the third award activity. Topics of this paper include additional features implemented in order to foster better diversity in the program and career readiness, observations about student motivation as a result of grant activities, experiences with students working on interdisciplinary community engagement projects, guidelines on how to better and more effectively interact with stakeholders, lessons on assessment of student progress (along with warning signs of imminent trouble), and planned actions to improve student success outcomes.

Tags: S-STEM, retention, scholarships, diversity, student success, broadening participation in engineering

Section I: Overview of the SEECS Program

Gannon University is a private, four-year Catholic university, dedicated to providing a liberal arts education integrated with professional skills and faith-based learning. Gannon offers 6 associate's, 67 bachelor’s, 29 master's, and 6 doctoral degrees, with approximately 4,700 students (3,200 undergraduate) [1]. The “Scholars of Excellence in Engineering and Computer Sciences” (SEECS) program was established in 2008 at Gannon University, funded by the National Science Foundation (NSF) Scholarships in Sciences, Technology, Engineering and Mathematics (S-STEM) program [2]. This program was funded through three separate awards: 0806735,

1153250, 1643869. Scholarships were awarded to students within the identified engineering and computer and information science majors of the College of Engineering and Business [3]. The first two grant periods, herein known as SEECS1 and SEECS2, were each funded for $600K, and SEECS3 was funded for $999,985M. Between 2008-2021, SEECS granted 300 one-year scholarship funding and has seen 63 students graduate from the program.

The SEECS program structure and activities are realized through a mandatory zero-credit weekly one-hour seminar which all students must enroll each semester. Previous publications provide details of the seminar activities which focus on professional and personal development, student success, career readiness, and the impact of engineering in the community [4], [5].

Through formative and summative evaluations, the goals and objectives of the program evolved as the essence of the effort was maintained: to support students choosing a STEM discipline through degree completion via scholarships, mentoring, support services and professional development [6], [7]. Annually, scholars are surveyed to help assess the effectiveness of the seminars at increasing appreciation for the aspects of engineering design, and awareness of interdisciplinary interactions within the engineering field. SEECS1 surveys indicated a weakness in marketing and recruitment efforts, remedied in SEECS2 as recruitment practices were added as an objective. Consequently, the number of women applicants has been enhanced and the objective achieved. SEECS3 identified academic struggles as a limiting factor for scholars and, thus, for the achievement of the SEECS Objectives 2 and 3 and NSF's overall goals for the funding. SEECS3 initiated processes for supporting those who were challenged by attrition courses, affecting the freshman-to-sophomore retention rate.

At the completion of SEECS3, the four objectives were met:

1. Provided 25 scholarships per year for low-income, academically talented, Engineering and Computer Science majors, especially women, with demonstrated financial need
2. Provided a program of academic and student service support that achieved an average 80% freshman to sophomore retention rate in STEM majors for students brought in as SEECS scholars
3. Provided scholars with academic and professional development that prepared them for employment in a STEM field and/or graduate school
4. Implemented recruitment strategies to achieve a 24% rate of women applicants

Section II: SEECS Outcomes

At the inception of this program, data points and metrics were defined to assess the effectiveness of the program and provide the National Science Foundation and the University with results. These metrics were correlated to recruitment, financial support, retention, and graduation. Table 1-3, summarize the characteristics of the applicants, recipients, and graduates relative to the

SEECS program's objectives. The past cycles of funding were successful in achieving the objectives' benchmarks (averages given) and activities: female freshmen applications (40%), freshmen retention (80%), and average overall retention (87%), providing scholarships to targeted students, establishing a robust program to support, mentor, advise, and encourage the students through to graduation.

Recruitment and Financial Support

As presented in Table 1, on average 24 students per year received scholarships. With support from the admissions and financial aid office, students were identified and invited to apply for the scholarship. Parameters employed to define the eligible pool of students were financial need, academics, and majors. 12 to 13 scholarships were offered every year to build a freshman cohort of 9 students.

During the 2021-22 academic year, Gannon awarded over $51 million dollars in financial aid. Each year the average unmet need increased with an average of 76% of the majors having unmet need. In Fall 2019, on average, 77% of eligible students had an average $33,832.89 of unmet need, requiring financial aid to offset 61% of the cost of attendance (COA). As the cost of an education is a significant factor for these students, the NSF funds through the SEECS program was able to partially bridge this gap.

TABLE 1. DATA OF RECRUITMENT AND FINANCIAL SUPPORT FOR SEECS 1 TO 3

	SEECS 1	**SEECS 2**	**SEECS 3**				
	Averages (2009-2013)	**Averages (2013-2017)**	**Year 1 (2017-2018)**	**Year 2 (2018-2019)**	**Year 3 (2019-2020)**	**Year 4 (2020-2021)**	**Averages (2017-2021)**
# SEECS-eligible applicants	32	105	96	91	96	80	91
# applications, freshman cohort	17	25	18	21	34	22	24
# accepted, freshman cohort	8	9	7	8	10	9	9
# of accepted awards, all cohorts	23	25	25	22	24	26	24
Female applications, freshmen *(Objective 4 sought 24% applicant rate)*	9%	26%	38% (7/18)	33% (7/21)	50% (17/34)	27% (6/22)	37%
Females, across all cohorts	10%	26%	44% (11/25)	41% (9/22)	54% (6/24)	58% (15/26)	50%
Average award (rounded)	$5,565	$5,367	$6,067	$6,402	$6,325	$8,460	$6,813
Average financial need, freshman cohort • Before financial aid • After non-SEECS financial aid	$31,114 $13,129	(3-year average) $33,711 $13,245	$32,708 $12,144	$38,166 $15,027	$37,640 $15,379	$14,236	$14,263

- 2020-2021: 26 scholarships were awarded. 58% of the scholars were female students. The average award was $8,460. One upper classman continued to participate in the seminar without receiving scholarship
- 2019-2020: 24 scholarships were awarded. 54% of the scholars are female students. The average award was $6,325. Three upperclassmen continued to participate in the seminar without receiving scholarships.
- 2018-2019: 22 scholarships were awarded. 41% of the scholars are female students. The average award was $6,402. Four upperclassmen continued to participate in the seminar without receiving scholarships.
- 2017-18 academic year: 25 scholarships were awarded. 44% of the scholars were female students. The average award was $6,067.

The continued participation of students who were not receiving financial support is a clear indicator of the value added and benefits of the activities the scholars were engaged in. They participated and were expected to contribute as funded scholars.

Retention and Support Services

After the first two NSF awards, the overall 90% year-to-year retention was modified to focus on achieving an 80% freshman-to-sophomore retention and to increase academic interventions. The university retention in STEM majors from freshmen-to-sophomore was 72%. Apart from changing majors, maintaining the 3.0 GPA requirement was the main reason why students lost the scholarship.

After the PIs and collaborators completed studies that evaluated grades obtained in critical path courses, STEM-PASS, a support program instituted at the University, was adopted in SEECS3 to support the freshmen-to-sophomore retention [8], [9].

Through SEECS1, 33 freshmen entered with six (18%) being lost due to SEECS-ineligible academic performance (i.e., GPA below 3.0). From those six, four graduated with a SEECS-eligible degree. Through SEECS2, 35 freshmen were admitted, six (17%) were not retained due to academics with five of those continuing to graduation at the university in STEM. Through SEECS 3 and its tutoring interventions, with 34 freshmen to date, only five (15%) lost eligibility due to academics.

Overall, during SEECS3, the 80% freshman-to-sophomore retention was achieved. Retention data is provided in Table 2. For three out-of-the four years, the retention was above 80%.

TABLE 2. SEECS RETENTION DATA

	SEECS1	SEECS2	SEECS3				
	Averages (2009-2013)	**Averages (2013-2017)**	**Year 1 (2017-2018)**	**Year 2 (2018-2019)**	**Year 3 (2019-2020)**	**Year 4 (2020-2021)**	**Averages (2017-2021)**
Year-to-year retention freshman to sophomore	NA	89%	86% (6/7)	88% (7/8)	80% (8/10)	88% (8/9)	86%
Year-to-year retention in program, across all cohorts	85%	93%	92% (23/25)	86% (19/22)	88% (21/24)	96% (25/26)	91%

Preparation for employment in a STEM field and/or graduate school

All activities in SEECS1 and SEECS2 proved effective to prepare students to the next step in their professional careers; therefore, they were maintained. The community-based projects continued to be a major aspect of the seminar as students engaged in design experiences early in their college careers. The community-based projects realized during SEECS3 are outlined in a later section of this paper.

SEECS3 expanded tutoring funds by providing both academic support (supporting retention) for underclassmen and work experience for upperclassmen with comparable market salaries. In the 2020-2021 academic year, there were five SEECS tutors at the STEM Center; in 2019-2020, there were three SEECS tutors; in 2018-19, there were four SEECS tutors; and in 2017-18, there were three. Shadowing upperclassmen engaged in internships was formalized in SEECS3 to raise early awareness and provide networking opportunities to the freshmen cohort.

TABLE 3. SEECS GRADUATE AND EMPLOYMENT DATA

	SEECS1	SEECS2	SEECS3				
	Totals (2009-2013)	**Totals (2013-2017)**	**Year 1 (2017-2018)**	**Year 2 (2018-2019)**	**Year 3 (2019-2020)**	**Year 4 (2020-2021)**	**Totals (2017-2021)**
SEECS graduates	18	21	9	5	5	5	24
SEECS employed in STEM field or in graduate studies	16	20	8	6	5	5	24

Diversity in SEECS

During SEECS1 and SEECS2, the goal associated with the recruitment of minorities and disabled participants was not achieved. The pool of eligible applications with these characteristics was very low which was consistent with the overall demographics at the institution. SEECS3 focused on enhancing recruitment strategies to attract female applicants [7].

Table 1 provides a summary of these efforts:

- 22 applications were received for the fall 2020 freshman class; 27% were female.
- 34 applications were received for fall 2019; 50% were female
- 21 applications were received for fall 2018; 33% were female.
- 18 applications were received for fall 2017; 38% were female.

Section III: Features of SEECS3

Features to Foster Diversity

- Gender diversity (speaking of the traditional male/female cisgenders, only) has been successfully pursued throughout the SEECS activity lifetime. Targeted recruitment efforts have been used to encourage female applicants in particular, which has paid off by producing cohorts in which the number of women offered scholarships tends towards a slim majority. Recruitment of nontraditionally-gendered students has not yet been incorporated into the effort, though the Principal Investigators have no aversion to the idea of expanding the gender diversity of the program by including transgendered or nonbinary students.

- Diversity of majors represented in the cohorts: From SEECS1 to SEECS3 all the cohorts had representation from multiple disciplines (Table 5). The student composition and majors represented in the cohorts kept shifting from SEECS1 to SEECS3. In the earlier years, although there were students from multiple disciplines, one or two majors were overrepresented. The increase in applicants from other programs and the consideration of a student's major of choice in the decision-making process by co-PIs helped create a more diverse group. During SEECS3 there is student representation from at least four majors out of the seven majors in the school of engineering and computing that are supported by the grant.

- As the SEECS effort has continued from grant period to grant period, it has been inevitable that faculty turnover would occur. For SEECS1, the Principal Investigator group included two faculty members from the Mechanical Engineering (ME) department, and two from the Computer and Information Sciences (CIS) department. Retirements have led to the eventual departure of both of the original CIS faculty members, and one of the ME members has moved into an administrative position at the university, and is thus not as available for SEECS efforts. This attrition of faculty members has allowed for improved diversity of faculty members. SEECS3 had faculty members drawn from ME, Electrical and Computer Engineering, Environmental Engineering and Biomedical Engineering. No data is available to determine the effect of this greater diversity upon student outcomes or perceptions, but it is presumed that having faculty that better mimic the student population would have a positive impact on student perceptions of the relevance and value of the program provided.

- Projects continue to be initiated with an eye towards the university mission of service to the community, and with an eye also towards inclusion of as many majors as possible,

relative to the student majors of the cohort. Table 5 indicates the level of success that has been achieved with this grant cycle. Some improvement is required, but significant diversity of student interests has been achieved in the project selections. It might be noted that the projects are undertaken by freshman and sophomore students, so that in-major knowledge is not something the students have had opportunity to gain extensively. Thus, while we seek to incorporate as many majors as possible, the goal is a desire, not a hard requirement.

Features to Foster Career Readiness

Job shadowing is proved to have a very positive impact on the excitement of engineering students about the engineering profession and increase students' confidence to succeed in engineering [10]. Job shadowing was an element added to the professional development activities of the SEECS program starting in the third grant. To foster career readiness, freshmen and sophomore students from the program were paired for a job shadowing with the same major upperclassmen who were doing an internship. This activity included a one-day commitment during which upperclassmen showed lowerclassmen the day-to-day tasks that they perform at work and answered questions. Based on the post-visit reflections collected from the SEECS lowerclassmen who had a job shadowing, this activity provided an ideal opportunity for them to obtain a quick but efficient overview of what it is like to work in the fields of engineering and computer science.

TABLE 4: SUMMARY OF SEECS 3 COMMUNITY SERVICE PROJECTS (APPERAR SHADED) WITH ORGANIZATIONS AND PROJECT STATUS (*FOR A COMPLETE LIST OF PROJECTS REALIZED DURING THE PROGRAM GO TO [7], [8], [11]*)

Project title	**Organization (Stakeholder)**	**Project duration**	**Status**
Green Gym	Gannon University	**2017-2019**	Completed
Hydroponics Indoor Garden	L'Arche Erie	**2018-2020**	Implementing
Lake Erie Buoy Timeline Extension Project	Regional Science Consortium	**2019-2021**	Implementing
Raised Garden Bed	Pennsylvania Soldiers' and Sailors' Home	**2020-2022**	Designing
Rainwater Collection Project	Because You Care Animal Shelter	2021-2023	Collecting data/brain storming

Community-based learning to meet grant goals and objectives

The community-based design projects continued to serve as a platform to exercise engineering skills, build community within the program, showcase the impact of engineering in our day-to-day lives, service our community and engage the scholars. The details of the projects and peer-to peer mentoring aspects can be found in previous publications [7], [8], [11]. By engaging in this real-world problem, the scholars share the problem-solving aspects of design for a stakeholder that values their contribution

Multi-year-cycle design projects have been completed for regional non-profit organizations. These projects have had significant regional impact, or university benefits, addressing both environmental and human needs. During SEECS3, four community-based projects were active (refer to Table 4) and two new non-profits were engaged as partners: L'Arche Erie and the Regional Science Consortium. Although structurally different, all projects incorporate the aims of the SEECS program. Tables 4 and 5 summarize the projects and disciplinary content of the design projects.

TABLE 5: DATA ON SELECTED PROJECTS, ENGINEERING AND COMPUTER SCIENCE DISCIPLINES REQUIRED (√) AND STUDENTS REPRESENTATION. SEECS3 PROJECTS ARE SHADED.

	BME	**CIS**	**ECE**	**ENV**	**IS**	**ME**	**SE**
Redesign boat ramp			(3)	√ (2)		√ (13)	√ (2)
Go green bicycle-powered electrical generator			√ (3)	(2)		√ (13)	√ (2)
Cascade creek flow diagnosis				√ (4)		√ (5)	√ (1)
Kit assembly assist	√	√ (2)	√ (3)	(1)	√ (2)	√ (3)	√ (2)
Improving Airflow in a 3-Bedroom House Design				√ (1)		√ (7)	
CHOSEN steam generator		√	√	(3)	√	√ (5)	√ (2)
CHOSEN medical sterilizer	√ (2)	√ (1)	√ (1)	(3)	√	√ (3)	√ (1)
Uniform display case	(2)	√ (3)	√ (1)		√	√ (1)	
Renewable power station	(4)	(2)	√	(1)		√ (2)	
Green Gym	(2)		√ (1)	(2)		√ (2)	
Hydroponics Indoor Garden	(2)	(1)	√ (2)	√ (3)		√	
Lake Erie Buoy Timeline Extension Project	(2)		√ (3)	√ (2)		√ (1)	(2)
Raised Garden Bed	(1)	(1)	√ (2)	√ (2)		√ (3)	
Rainwater Collection Project	(1)		√ (2)	√ (1)		√ (2)	

√ the discipline skillset required for the project and in parenthesis are the number of students representing the discipline

Section IV: Lessons Learned

Observations about motivation

One of the activities done by the PIs during the third grant was to study the effect of evolving design requirements on students' motivation [10]. The evolution of different parameters such as students' enthusiasm, motivation, perception of values and group dynamics at different stages of their projects among four cohorts (2015 to 2018 start year) was observed in the study. The data was collected through student satisfaction surveys, which were administered to all the participating students each semester. The results indicated that for the projects with no or minimal design requirements change, almost each of the above-mentioned parameters showed increasing behavior until the completion of the project. On the other hand, for the two projects with significant change of requirements, all parameters showed decreasing behavior during the time that the project was proceeding. In addition, the program alumni were surveyed as to their

perception of the change of requirements and how those changes mirror their working experiences. All the program alumni who responded to the survey agreed that the change of scope and requirement is part of professional work. The program alumni were also asked about their recommendation on how to introduce the change of scope and design requirements to students and how to improve their experience despite change of scope. One of the popular responses was adding "surprise requirements" mid-way through the project and allowing the students collaborate on how to change their plan moving forward.

Experiences with students working on interdisciplinary community engagement projects

Though the goals and objectives of the program evolved from SEECS1 through SEECS3, a common aspect throughout is the interdisciplinary community-based projects the students worked on. The community related projects expanded student's world view, extended their commitment from themselves to broader community while gaining and applying engineering skills to develop solutions for real-world problems. In addition, working on community engagement projects and regular interactions with stake holders aided in improving communication skills, gaining professional identity and confidence through the development of the project. All 14 projects required skills and knowledge from multiple disciplines and had students representing various disciplines (Table 5). Any lack of representation from a discipline that was needed had no impact on successful completion of the project as most of the project design and construction happened during freshman and sophomore years in which students took very few or no courses related to their major. Moreover, working on a project requiring multidisciplinary skills helped students gain various skills and good understanding of other majors compared to students outside SEECS program. The presence of students from multiple disciplines in the upper classmen and their mentoring of freshman and sophomore during design and construction was valuable and beneficial for all. Overall, the message that the goal of the project is to undergo the of engineering design experience while enhancing professional and personal development is communicated and widely accepted. There were few instances' where the enthusiasm and motivation levels of some of the students in a cohort was not as high as the rest due to the reason that the project had little to do with their major of study.

Guidelines on how to better and more effectively interact with stakeholders

The community service design projects provide service to the local community -- nominally within a 15-mile radius of campus. They are non-profit and community organizations in need of engineering assistance. The SEECS program engages the stakeholders with a mechanism and process including surveys, presentations, emails, and onsite visits. The goal is to have the stakeholders to be informed, to participate in design and development, to offer feedback, to confirm the project had values to the students, and to value the SEECS program [12]. In recent years, sometimes stakeholders' needs have changed during the duration of the project. In other cases, due to their own organization internal priority, the project become unneeded. The change of scope of the project caused by these uncertainties and external changes has a negative impact on students' motivation [10]. To communicate more effectively with the stakeholders, the following guidelines are recommended throughout the duration of the design project:

- During each semester, invite stakeholders to (zoom) design meeting for Q&A, one or two times.
- Frequent email communication between the scholars and the stakeholders. One or two dedicated scholars will be responsible to send biweekly emails to stakeholders to ask questions and get inputs to make design decisions. The emails are saved in a shared folder.
- Provide the shared link of the design documents with stakeholders to keep them informed of the progress of the design.
- Invite stakeholders to end-of-semester presentations. Send stakeholders the presentation files ahead of time. During the event, scholars present the progress of the project and get feedbacks and inputs from related and other stakeholders.
- Each semester stakeholder survey to evaluate the value of the expertise and professionalism delivered by students and faculty, and the perception of professionalism of the process, students, and faculty.

Assessment of student progress

During implementation of the first iteration SEECS grant, a trend was noticed with regard to student retention in the scholarship program which has formed the basis of enhanced assessment of student academic progress. Specifically, as reported in [5], it was seen that "poor" performance in Calculus I or the first-level physics course was strongly correlated to eventual loss of eligibility due to GPA. This has been anecdotally known for a long time, of course, but specific analysis demonstrated that there was a 50% chance of less-than-3.0 cumulative GPA within 1 year for students receiving less than a straight B in either of these two courses, and 100% loss due to GPA among students receiving less than "B" in both courses. Inasmuch as these courses are necessary background for the complicated analyses required in upper division courses, it was determined that sufficient mastery of the concepts of calculus and physics would be a major student outcome goal for SEECS activities moving forward.

The assessment of student learning in these courses presented some difficulty, as the SEECS faculty members are not tasked with teaching calculus or physics, and thus not privy to student work for direct assessment. Clearly the assessment must be done early and often; it is too late to alter student success once final grades are recorded for the course. Assessment in place beginning in the second grant cycle and continuing to-date relies on review of student grades at the four week and midterm timepoints, along with direct communication with instructors when appropriate. Each SEECS scholarship recipient is assigned a SEECS faculty member as a secondary academic advisor, thus giving direct access to student grades. It is of course up to the course instructor to determine what level of information to provide upon query, but it has been observed that if questions are limited to such items as attendance or otherwise kept to generalities, instructors have been willing to respond. Lack of specificity about real-time performance in class is, however, a disadvantage in assessing student progress during the semester.

In addition to monitoring student progress through calculus and physics, SEECS faculty members also monitor the progress of all students in the program at midterm and after final grades are issued to ensure that satisfactory progress towards graduation is being achieved. This assessment includes watching to make sure students are not withdrawing inappropriately from courses and are achieving satisfactory grades in all courses – both major requirements and Liberal Studies requirements. Noted potential problems with respect to course completion are dealt with by SEECS faculty members acting in their roles as secondary academic advisors on a case-by-case basis.

Planned actions to improve student success outcomes

In response to the difficulty of obtaining real-time data sufficient to head off academic trouble due to the physics and calculus issue noted, a plan is being developed to incorporate instructors of the Mathematics and Physics departments as auxiliary members of the SEECS team. The mechanics of this are not yet well formulated, but the idea is to somehow bring instructors of SEECS students in these courses onboard, so that information related to student performance on quizzes, tests and homework can be used to more closely monitor student performance without violating student confidentiality.

Data is gathered to assess the impact of the Peer Assisted Study Scheme (STEM-PASS) in place at the university as it supports the university-wide retention plan. The plan as of now is to continue directing SEECS freshman and sophomore students into sections with the STEM-PASS feature.

In addition, SEECS provides funding for hourly wages of SEECS upperclass students employed as tutors in the STEM center. Note that these tutors work for the STEM center and are not exclusively available to SEECS students, but SEECS students are given priority for tutoring assistance. The plan is to continue to offer this service and to make it better known among freshman and sophomore students that the tutoring is available free of charge. Putting a familiar face upon the tutor, it is hoped, will encourage struggling students to seek the help they might need.

Conclusions

The impact of the program's structure has met the intellectual merit criteria of SEECS1, SEECS2, and SEECS3 by having: (1) enhanced the disposition of the scholars towards engineering, service, and professionalism, (2) achieved retention objectives, increasing the rate through each cycle, (3) enabled collaborative scholarly activities between the PI, Co-PIs, and students, and (4) defined protocols to resolve performance issues in challenging roadblock courses. Item 4 has provided positive results, but further development could result in evidence-based practices.

Additional impacts have been: (1) a dissemination of the program structure and successes through professional outlets, thereby providing a model for implementation; (2) an increase in the involvement of women in STEM professions by continuing with successful recruitment practices and by providing enrichment and professional development activities, (3) a greater understanding about roadblock courses and successful mediations, and (4) demonstrated, tangible service to the community outside the university.

Since the conclusion of NSF Grant No. 1643869 in March 2021, the program has continued through the 2021-222 academic year. The university has assumed the scholarships for a new freshmen class and maintained the scholarships for all upperclassmen. The leadership of the college supports the program and its activities. The advisory board will continued to be engaged to discuss activities, effectiveness and to provide recommendations to the leadership.

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