Scholarship Program Initiative via Recruitment, Innovation, and Transformation (SPIRIT): SSTEM Program Initiatives and Early Results

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Scholarship Program Initiative via Recruitment, Innovation, and Transformation (SPIRIT): S-STEM Program Initiatives and Early Results

This paper describes the structure, project initiatives, and early results of the NSF S-STEM funded SPIRIT: Scholarship Program Initiative via Recruitment, Innovation, and Transformation program at Western Carolina University (WCU). SPIRIT is a scholarship program focused on building an interdisciplinary engineering learning community involved in extensive peer and faculty mentoring, vertically-integrated Project Based Learning (PBL), and undergraduate research experiences. The program has provided twenty-six scholarships and academic resources to a diverse group of engineering and engineering technology students.

Results from several project initiatives have been promising. Recruitment efforts have resulted in a demographically diverse group of participants whose retention rates within the program have held at 82%. A vibrant learning community has organically developed where participants are provided both academic and non-academic support across several majors and grade classes. Since May 2014, SPIRIT undergraduate research projects have resulted in forty-five presentations at seven different undergraduate and professional conferences. Twenty-seven PBL and five integrated open-ended design challenges have been completed, involving several corporate sponsors and encompassing a wide-range of engineering topics.

Results from a ninety-question participant survey revealed several perceived program strengths and areas of possible improvement. Overall, the participants agreed or strongly agreed that the program had been a positive experience (4.0/4.0) and had helped them to prepare for a career in engineering (3.8/4.0). Undergraduate research activities conducted through the program have helped the participants to understand the steps involved in research processes (3.8/4.0), to appreciate the need for a combination of analysis and hands-on skills (4.0/4.0), and to become more resilient toward academic challenges and obstacles (3.8/4.0). The program's learning community helped participants build relationships with other students outside of their major (3.1/4.0) as compared to normal course communities. Several participants believed that they were more comfortable with seeking advice from upper class students within the program (3.7/4.0) as compared to upper class students outside the program (2.7/4.0). Vertically-integrated PBL activities helped participants in understanding project management techniques (3.8/4.0), teaming techniques (3.7/4.0), and to assume a leadership role on projects (3.6/4.0).

Indicated areas of program improvement included the desire and need for a system of peer-review for the students' undergraduate research papers; a perceived hindrance to benefit from "journaling" about their program experiences (3.6/4.0); and a need for continued strengthening of activities associated with graduate school application processes as well as preparations for job interviews and applications. This paper presents details of the program initiatives, a compilation of survey results with necessary discussion, and areas of possible improvement going forward.

Introduction

Preparing and maintaining a well-educated STEM workforce is essential to increase the global competitiveness of U.S. based industries. Engineering and Technology programs at Institutions of Higher Learning are well suited for supporting national workforce initiatives and may focus these efforts through scholarship-based programs aimed at increasing student engagement, retention, and the workforce readiness of the students in these majors. Specifically, the National Science Foundation (NSF) Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM) program provides funding for projects framed around increasing the graduation success and workforce readiness of low-income academically talented STEM students [1]. With this, financial aid alone is not enough to increase the graduation rate of these low-income, and usually diverse, population of students. S-STEM projects must incorporate student support and engagement activities that affect the success, retention, and academic/career pathways of these students.

In 2014, Western Carolina University (WCU) proposed and received a $625,179 S-STEM grant for the SPIRIT: Scholarship Program Initiative via Recruitment, Innovation, and Transformation (SPIRIT) project. SPIRIT encompasses four major program activities that seek to engage low-income engineering and technology students in a learning/support community, vertically-integrated project based learning, undergraduate research, and academic/career readiness [2] - [9]. Specific SPIRIT program objectives are as follows:

- Offer focused program and institutional support services.
- Develop a scholar learning community through peer-to-peer mentorship, faculty-student mentorship, and focused team building program activities.
- Increase professional skills and technical competency through vertically and horizontally integrated interdisciplinary project-based learning.
- Increase undergraduate research skills through targeted activities and published works.

In this paper, three years of SPIRIT program activities will be summarized and presented with several survey results, participant observations, and lessons learned.

Program Recruitment and Demographics

S-STEM notification of award was received in early June 2014, leaving six weeks to recruit, review, and select program participants just prior to the start of Fall semester. Of the 72 applications received, 27 participants were recruited. Participant selection was based on several factors including: financial need (FAFSA); high school academic performance; standardized test scores; and an application letter addressing several suggested prompts related to their background experiences and interest in the program.

The selection process yielded a diverse pool of participants with a wide range of backgrounds and experiences. The Office of Financial Aid at WCU reported the average unmet financial need of the participants at $2561 (SD $4591), post loans and grants. The initial group of 27 scholars was comprised of 10 Freshmen, 9 Sophomores, and 8 Juniors majoring in one of the four programs in the School of Engineering and Technology at WCU, which included: B.S. Engineering – Mechanical (BSE-M); B.S. Electrical Engineering (BSEE), B.S. Electrical and Computer Engineering Technology (BSECET); and B.S. Engineering Technology (BSET). Figures 1, 2, and Table 1 depict the initial distribution of majors, gender/ethnicity demographics, and standardized test scores for the selected group of 27 SPIRIT scholars [10].
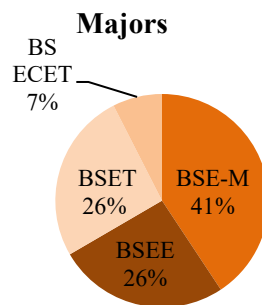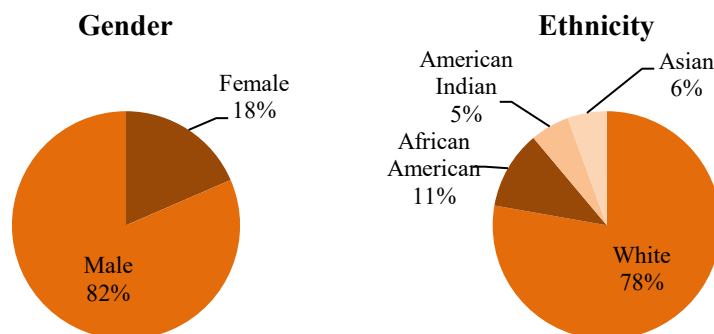

Figure 1: Initial SPIRIT Scholar Group by Major.

Figure 2: Initial SPIRIT Scholar Group by Gender and Ethnicity.

Table 1: Initial Scholar Group Average SAT and ACT Scores.

SPIRIT Scholar SAT and ACT Scores					
SAT		**Avg. (SD)**	**ACT**		**Avg. (SD)**
	Math	593 (74)		Math	26 (4)
	Verbal	517 (74)		English	21 (6)
	Writing	490 (68)		NA	
	Total	1600 (177)		Total	24 (5)

Participant Support Activities and Services

The 27 SPIRIT participants were supported through financial scholarships and SPIRIT project support, academic support services, and the development and fostering of a devoted learning community. Yearly scholarship amounts for each participant averaged to $5300 per year; however, some scholars showing significant need or experiencing extenuating circumstances received additional funds for several semesters [11]. Participant project and travel support was issued based on the nature of the activity (travel and presentation, project materials, career fair, etc.) and approved using a case-by-case review and approval process.

Attendance at the one-hour weekly group meetings was required of all participants. The weekly meetings served to develop a strong and supportive learning community, which helped to provide peer-peer mentorship, social and academic support, and motivation. Year-one group meetings were dedicated to introducing the program, establishing a peer-peer mentorship relationship between the different participant groups, and assessing the students' attitudes (anxiety) and potential academic support needs. During the weekly meetings, the participants were divided into groups of 4-5 where each group was issued several discussion prompts. The initial peer grouping of participants was more methodical with freshmen being equally paired with sophomores and juniors, or purely homogenous groups, while the later groupings of peers were more organic in their formations, containing a mix of demographics. The individual groups would report to the larger group at the mid-point of the sessions, where larger group discussions would follow. The four program directors and graduate assistants also participated in the discussions by sharing their viewpoints and knowledge.

Outside-group journaling was used to encourage the participants to reflect on group discussions. A series of weekly journaling assignments (4) focused on several topics, including: the participants' fears and anxieties about the new program and major; current and future academic expectations; future academic and career related activities; and mentorship. Participants wrote about their goals for the academic year; obstacles to accomplishing these goals; strategies for overcoming potential obstacles; and their professional goals, both immediately and five years after graduation [12]. The participants' journal entries were used to plan and deliver a series of workshops.

A total of twelve workshops were conducted by WCU's Student Support Services, including: Career Service, Writing and Learning Tutoring Center, Math Tutoring Center, and the Library's Research Liaison. The first in a series of workshops offered to the participants was conducted by the Office of Career Services at WCU. The workshop presented topics such as student employment opportunities; internships and CO-OP opportunities; resume building; interviewing skills and training; business attire; and professional etiquette [13]. The director also invited the SPIRIT participants to the various career fairs and shadowing opportunities available through their office. Two separate workshops were conducted by the Writing and Learning Commons (WaLC) at WCU and focused on study skills; academic writing and writing support; grammar tips; effective group work and teaming; and associated WaLC tutoring services. The director of the Mathematics Tutoring Center conducted a workshop on Mathematics study skills/methods and the various academic tutoring services offered at their Center. The final workshop was conducted by WCU's STEM research liaison and included resources, techniques, and methods for conducting and organizing literature searches.

Because the program's focus is on career readiness, which could include graduate school or immediate entry into an engineering career field, program activities focused on two possible pathways. Year-two and year-three meetings were structured to focus on career/graduate school readiness, Undergraduate Research (UgR) activities and mentorship, and vertically integrated project-based learning activities and mentorship [14] - [15]. Summer REU experiences and internships were also addressed in year-two. Additionally, year-four meetings heavily focused on career readiness by providing several focused sessions on resume and cover letter development and review, "elevator pitch" preparation and practice sessions, and engaging in job shadowing experiences, which will occur during the Spring 2018 semester.

Undergraduate Research Activities

SPIRIT program activities involving undergraduate research included: faculty mentor research and information sessions; oral presentations of the participants' research work during group meetings; peer-peer blind and informal review of abstracts, papers, and posters; and submission and presentation of the scholars' work at several conferences [15]. While the group meetings were used to present the framework and methodology for conducting research, most of the actual work took place outside of the weekly scheduled SPIRIT meetings. Summer REU opportunities and the relationship between UgR and future graduate work were also discussed with the group.

Including the four program directors, fourteen engineering and technology faculty members served as UgR mentors for the SPIRIT participants. During year-one of the program, the UgR mentors presented their current research and potential for continued study to the group. Participants were encouraged to select topics related to those presented but could pick topics of their choice as long as one of the UgR mentors agreed to sponsor the area of research. For most of the participants, year-one focused on developing research questions, the literature review, and developing a preliminary experimentation plan for their project, while year-two focused on

experimentation, analysis, and results. A few of the participants were able to complete their UgR work by the third semester, but most participants required two years of effort.

At the end of year-two and the beginning of year-three, the SPIRIT participants conducted two blind peer reviews of each other's UgR abstracts and papers. The blind peer review was followed by two group meetings where the participants conducted face-face peer reviews of their UgR artifacts. Additionally, several times during the semester the participants were required to report-out their UgR progress and to conduct oral presentations of their work. The faculty mentors and directors continually worked with the participants during each stage of the UgR process.

Vertically Integrated Project-Based Learning

The SPIRIT program used a two-pronged approach in implementing the vertically integrated PBL activities.[14] Short-duration open-ended design projects were used during the weekly group meetings, while longer duration projects were employed outside of the regular meeting times and within PBL courses that are normally taken by all students. This method allowed for the groups to experience both direct and indirect interactions with their SPIRIT peers during the projects.

Seven short-duration projects were conducted during year-two and year-three. Two projects involved design challenges proposed by the scholars. Five different project teams were structured to include at least one student from each program year (e.g., 1 Sophomore, 1 Junior, etc.) and different disciplines (e.g., mechanical, electrical and computer, engineering tech.). Project topic themes included designs constrained by sequence, time, project scope, project details, creativity, and function. Scholars were directed to rely on previously discussed methods and concepts. Project themes built upon each subsequent project and were varied across several learning concepts, including professional skills development.

The semester-long PBL course related projects included design challenges focused on new products, industry projects, system integration of both high-tech and low-tech automated control systems, and PBL small group discussions during the weekly group meetings. There are five such courses at our institution – ENGR 199 (freshman level), ENGR 200 (sophomore level), ENGR 350 (junior level), and ENGR 400/450 (senior level capstone). In the SPIRIT meetings, ENGR 199 participants were paired with ENGR 350 participants, while ENGR 200 participants were paired with ENGR 400/450 participants. However, group work and project management discussions involved participants from each grade level. Groups were asked to record the minutes of their discussions and respond to several pre-prepared discussion prompts.

During the semester-long projects, ENGR 350 participants were required to deliver an alpha prototype and to interact and share their project planning and milestones with the sophomore participants. The nature of the integration between the sophomore and senior participants was slightly distinct, and was not as interactive as the one discussed above. The sophomore participants were required to attend some of the presentation sessions of the senior capstone

participants. The main rationale behind this interaction was to introduce the sophomores to the open-ended, and often vague, project objectives of the Capstone projects.

Additionally, several of the participants' projects were associated with student organization and related competition teams. Faculty coordinators for two professional student organizations, Institute of Electronic and Electrical Engineers (IEEE) and the Society of Automotive Engineers (SAE), mentored the participants through several leadership/professional development opportunities related to designing, building, and testing of competition vehicles.

SPIRIT Program Participant Retention and Tracking

As of December, 2017, participant retention rates in the program have held at 82%. Several of the initial participants left the program at various times and for various reasons, and were replaced by new participants during the immediate or following semester, as indicated in Table 2.

Table 2: SPIRIT Program Retention Tracking and Scholar Replacement Status.

Scholar ID	Program Exit	Reason Provided	Fall 2017 Position Status
1044	Fall 2014	University medical withdrawal	Replaced with 2017, change of major
1059	Fall 2014	Program requires too much work	Replaced with 2023, current in program
1027	Spring 2015	Military orders & officer training	Replaced with 2019, current in program
1040	Spring 2015	Change of major - Business Admin.	Replaced with 2015, current in program
2015	Fall 2015	Change of major - Mathematics	Replaced with 2021, current in program

Five of the initial Junior-level participants graduated in 2016 and subsequently attained jobs with engineering job titles in related industries. Third year participation included the 22 remaining scholars, 9 of them graduated in 2017 and subsequently attained work in engineering related fields (7) or were accepted to graduate schools (2) for further study of engineering.

As depicted in Figure 3, the running cumulative average GPA for the 27 participants was 3.59 with a standard deviation (SD) of 0.31. Cumulative GPAs were grouped into 4 categories with 41.0% of the participants earning 4.00-3.75; 30.0% at 3.74-3.50; 26.0% at 3.49-3.00; and 4.0% at 2.99-2.50. During the Fall 2016 semester, 6 participants were placed on *At Risk* status (less than 3.25 GPA and/or missing 30% of the required activities) with each participant receiving one-on-one consultations and mentorship. Four *At Risk* participants were removed from *At Risk* status during Spring 2017. The two remaining *At Risk* participants continued to receive one-on-one consultations in Spring 2017. However, these two participants remained on *At Risk* status for the Fall 2017 semester. Only one participant remains on *At Risk* status for Spring 2018.

SPIRIT Cumulative GPA
n = 27; AVG. = 3.59; SD = 0.31

30.0%

26.0%

41.0%

4.0%
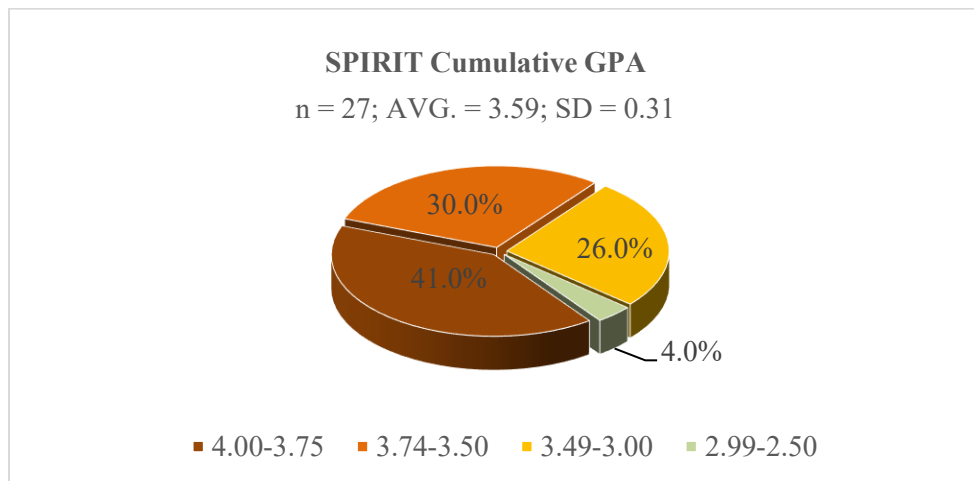
■ 4.00-3.75   ■ 3.74-3.50   ■ 3.49-3.00   ■ 2.99-2.50

Figure 3: SPIRIT Participant Cumulative GPA, 2017.

Outcomes and Discussions

Over the past three years of observations, surveys, and external evaluations, we have determined where we believe the program has been successful and produced positive outcomes. The directors also made several revisions and improvements to the program when indirect/direct participant feedback indicated that changes were needed.

Overall participant perceptions about the program's benefits were strong. When the 27 participants were asked if the SPIRIT program had benefited them financially, 96% strongly agreed. Three participants held part-time jobs at the institution citing additional financial need as the primary reason. Additionally, two other participants who had previously met FAFSA program requirements for scholarships during the first four semesters lost scholarship funding due to reported family income. Two participants lost their primary sources of support through the death of immediate family members; the directors worked closely with the students to ensure both emotional and financial support was adequate and forthcoming. At least one of these participants indicated that they would not have continued their education if it were not for the support of the directors and the program. All four high-financial need participants successfully remained in the program. While financial need was evident, interestingly, 67% of the participants agreed or strongly agreed that they would participate in the SPIRIT program if there were no financial scholarships available, but only academic recognition and continued program activities. Overall, the participants indicated that the average $5300/year (approx. WCU ETC = $18,500) scholarships they received were greatly appreciated and adequate for their continued enrollment in our engineering and engineering technology programs.

The directors witnessed the growth of a strong learning community, where both academic and social support was evident on a weekly basis. On a yearly average, the participants engaged in 28 group meetings with 4 peer-to-peer mentoring sessions, 5 faculty-student mentorship sessions, and 4 team building sessions. While the directors believed the frequency of meetings to be adequate, a few participants journaled and/or informally indicated a desire for less frequent group meetings. However, 97% of the participants disagreed or strongly disagreed that the program takes too much time and effort for the benefits gained. When asked to journal about the balance between the time and effort requirements of the program, two participants stated, "We are already under the stress and time commitment of research as well as the SPIRIT meetings" and "I would have liked to have more meetings off so that I could dedicate more time to research." With no consensus attained from review of the participants' journals, a survey was conducted to determine if changes in the program were needed. Eighty-five percent of the participants were comfortable with the program activities as a whole and did not comment on the frequency of group meetings. The responding participants made several comments about strengthening and increased focus on activities in certain areas, such as: career preparedness; graduate school and summer REU applications; UgR review and discussions; PBL group challenge work; and small discussion groups.

Using the participants' feedback, the directors ensured that several year-three sessions were explicitly dedicated to career preparedness, graduate school and REU applications, and peer review of UgR. Overall, the directors firmly believe the weekly group meetings and associated activities were crucial to building strong relationships between the participants and between the participants and directors. However, less frequent meetings after the program matures, year-four, may help to achieve a balance between the benefits gained and the needs of participants who desire less frequent group meetings. With this, frequent meetings during the first two years would be important for developing strong relationships and academic/social support structures.

Participant engagement of UgR and PBL projects surpassed our expectations and provided several tangible benefits to the participants. During years one through three, the participants produced 45 UgR artifacts that were subsequently presented at: National Council on Undergraduate Research (NCUR); Appalachian Energy Summit (AES); WCU's Research and Scholarship Celebration and Exposition (EXPO); Institute of Electrical and Electronic Engineers (IEEE) SoutheastCon; American Society for Engineering Education (ASEE); American Society of Biomechanics (ASB); and/or the Bioengineering and Biotransport (BB) Conferences. Figure 4 depicts the conference presentation frequency by year for all participants.
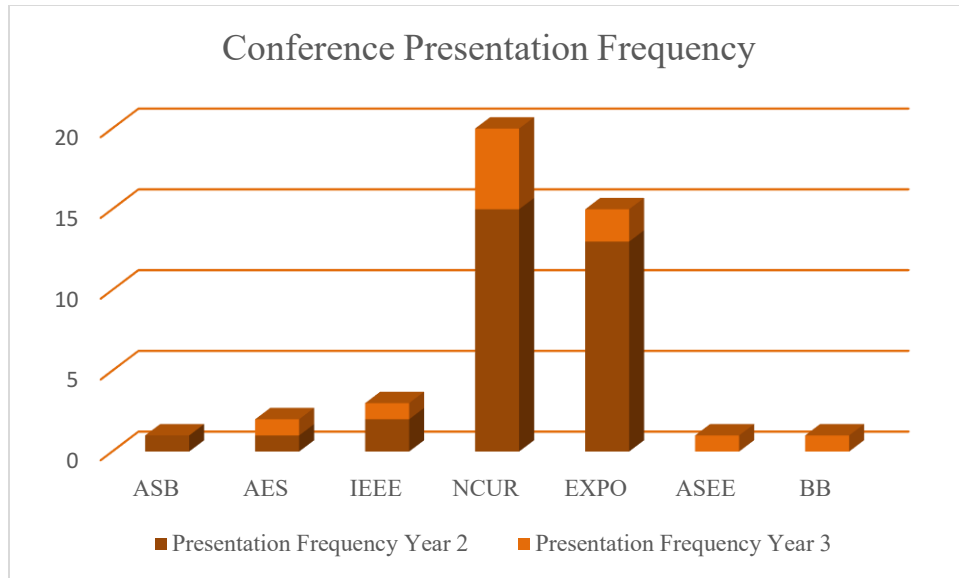
Figure 4: SPIRIT Participant UgR Conference Presentations, 2016-2017.

Participant feedback on UgR activities were generally positive with an indication of several perceived benefits. Ninety-six to one-hundred percent of the participants agreed or strongly agreed that UgR activities were rewarding and had helped them to understand the steps involved in the research process; understand the research skills needed in engineering; understand the data analysis and interpretation steps of research; and that UgR introduced them to a methodological means of investigating a new topic of study. While 100% of the participants indicated they understood the steps involved in UgR, 89% agreed or strongly agreed that UgR was difficult and only 48% agreed or strongly agreed that UgR was "fun." Paralleling this sentiment, only 67% and 63% of the participants indicated that they enjoyed writing and conducting oral presentations of their UgR, respectively. However, the perceived benefit was fairly strong with eighty-one percent agreeing or strongly agreeing that the program's UgR activities had helped them improve their writing skills and oral communication skills (96%).

To offer peer feedback and to simulate a more professional review process, two UgR activities involving peer review sessions were conducted during year-three. The first peer review session was conducted in the blind, with participants submitting their abstract and rough paper drafts to the directors, who then removed all identifying entries and redistributed the works back out to the participants for review and comment. The participant then conducted their blind reviews and returned their comments and suggested edits for redistribution back to the authors. The second peer review session was conducted informally, with participants paring up and rotating through several groups to review their work and receive feedback. While the blind peer review emulated similar processes found at more professional publication venues, the process was not well received. Several journal comments reflect the sentiment below:

I really enjoyed the informal abstract review session that we participated in. The feedback that I got from this was very helpful, reviewing was simple, and I could easily communicate my revisions to the other scholars. On the other hand, the anonymous revisions that we participated in earlier this semester were less helpful. These took significantly longer, and I found it difficult to quickly and effectively give written constructive criticism.

The directors observed that the peer review sessions were beneficial as they provided the participants a vehicle for multiple focused reviews of draft UgR work prior to submitting it to their UgR mentors and related conferences. Additionally, reviewing other participant's UgR work allowed them to gage their work against several others with common goals and gave them experience with a blind review process. However, the blind peer-review process was very labor and time intensive for both the directors and participants as compared to the perceived benefits.

UgR program activities helped several participants determine their career pathway. With 78% of the participants indicating that UgR was important for their career development, 67% also indicated that UgR activities had caused them to consider the possibility of going to graduate school. With graduate school as a targeted pathway, four of the program's participants engaged in REU experiences at different institutions during the summer of year-two and/or year-three. Two of the REU participants applied, and were accepted, for graduate study at two different institutions. One REU participant entered the engineering workforce and the remaining REU participant plans on applying to several graduate schools in early 2018.

Overall, the directors strongly believe UgR activities have helped the participants hone their research ability, professional writing skills, and oral presentation skills. Additionally, our UgR program activities helped several participants in determining their career path, which included pursuing a graduate degree prior to entering the workforce. We have established that a comprehensive UgR experience with good results can be conducted in three program years. The participants clearly saw a connection between UgR experiences and increasing the strength of their applications to either REU or graduate programs. Several participants in our group desired to produce more in-depth work and at least one participant's work holds a strong likelihood of publication in a professional journal. She has already been accepted to the graduate program of her choice.

In addressing both the graduate school or immediate employment pathways to an engineering career, PBL activities sought to expose the participants to several professional skills and career readiness related activities. Twelve in-session vertically integrated PBL group discussions were followed by 7 PBL project activities. The 27 participants also conducted multiple Junior-level and Senior-level industry sponsored PBL group design projects within the department's various programs. Project topics ranged across the engineering disciplines, including: Borg-Warner Turbo High Speed Motor Drive Power Train; Optical Cable Cooperation FPGA System Development; General Electric CNC Lockout System; Hydro-Charger; General Electric 2-Piece

Assembly System; etc. Prior in-session group projects sought to encourage development of professional skills, such as leadership, group work, project management, project documentation, and an appreciation for quality.

Ninety-six percent (96%) of the participants strongly agreed or agreed that the program's PBL activities had helped them to better understand project management and leadership techniques. An equal number of participants gained a better appreciation for documenting their design work on projects. While 93% of the participants indicated that the PBL activities had helped them to understand teaming techniques, and that they enjoyed working with others to achieve a shared goal, 33% of the participants indicated that they could complete more work when working alone as opposed to working with a team.

Eight-nine percent (89%) of the participants felt they had assumed a leadership role during the projects; however, only 41% felt responsible for project failures. While 100% of the participants indicated that quality was everyone's job and 93% indicated they worked diligently to correct issues of quality once discovered by the team, only 60% indicated that product quality was more important than profit gained. Reported group dynamics were generally stable, with 89% of the participants indicating that their team members encouraged diverse points of view, openly negotiated design changes, and accepted feedback to improve team processes and project outcomes.

Participant perceptions of the vertically integrated PBL group discussion were generally positive with some mixed reviews. One participant stated, "I really enjoyed the PBL project(s), they really drive home some points about engineering design such as trying to keep designs simple and keeping excellent documentation." Another participant stated, "it has been very beneficial to reflect on some of the successes and failures experienced throughout the Capstone process as a reminder of what to focus on in the coming semester," and others stated, "I would like to see more PBL team exercises within the meetings." As expected, several participants felt the effectiveness of PBL group meetings diminished as they matured in the program and learned about the PBL project processes, expectations, and challenges. One scholar stated. "these discussions were very useful in terms of letting me know that when the time came for me to take them I would already know everything that I needed to know…I have already heard a lot about the course (PBL) from fellow classmates as well as in each semester of the program… I felt that this was more than enough preparation for the course (PBL)."

Others felt the PBL activities were less valuable. One participant stated, "Personally, I do not see the time that we spent in this area as valuable. Suggestions going forward would be to dedicate more time to helping students find internships and jobs," and another participant stated, "While there were certain activities, such as the informal peer review and practice presentations, which I found very helpful, many of the other evenings I simply felt that my time was being wasted. The group design challenges were quite stressful for me, especially the project that spanned more than two weeks."

Overall the directors believe that the vertically integrated PBL activities and PBL projects were an integral part of preparing the participants for future PBL courses and career entry. PBL activities were effective at both building relationships between the participants (teaming and competition between groups) and for providing a platform for conveying larger professional project concepts, such as project management and documentation, situational leadership, and basic design concepts. However, the directors do not have a full understanding of the participants' perceptions about their role as a project leader and taking on responsibility for project failures nor why some of the participants felt projects teams were less productive than working as an individual. A future final program survey may provide a deeper level of understanding with regards to the participants' perceptions of the PBL group activities.

Conclusions

In this paper, we presented the experiences and project structure of an NSF funded project that seeks to help financially disadvantaged engineering and engineering technology students in persistence to graduation, entrance into the workforce or a graduate program, and professional skills development. We believe the performance-based scholarships, support services, and learning community offered by the program successfully created an environment that fostered the positive results experienced in both retention and placement rates. The UgR and vertically-integrated PBL activities served to provide personalized attention where the participants experienced both strong peer-peer and director-participant mentorship. Artifact production in both of these areas exceeded our original expectations. Ninety-three percent of the participants strongly agreed or agreed that the SPIRIT program was the most beneficial extracurricular activity that they had participated in during their academic career.

In Spring 2018, we plan to complete the final year of the project. Activities will incorporate past undertakings, but will center on career shadowing, creating the perfect pitch for job interviews, graduate school preparation, and conducting a final project survey. A focus group meeting will be conducted to further identify program strengths and weaknesses.

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