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WIP: investigate recruitment strategies used by engineering bridge and success programs to recruit underserved students

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Abstract

Engineering bridge and success programs have been used to support the transition and retention of students in engineering and computing majors at 4-year institutions in the U.S. Many bridge and success programs also aim to broaden participation in engineering and computing by recruiting underserved students such as underrepresented minorities (URMs), women, first-generation students, and low socio-economic status (SES) students. However, their program leaders frequently report difficulties recruiting students from these groups. There is little literature focusing on the recruitment of bridge and success programs. Understanding effective recruitment strategies to reach and convince underserved students to participate in those programs can increase the use of effective practices by program leaders and disseminate best recruitment practices.

Our research aims to identify which recruitment strategies are in use, which are most effective, and barriers to communicating with prospective underserved students of the engineering bridge and success programs. The research project includes several stages, investigating perspectives from both program leaders and students. This stage of the study will explore the effectiveness of different communication channels and change agents to reach and persuade underserved students to participate in engineering bridge and success programs from program leaders' perspectives. This is an explanatory sequential mixed method study based on the Diffusion of Innovations (DOI) theory framework. This work-in-progress (WIP) paper will report on instrument development, sampling procedure, planned data analysis, and current progress. This research will also broaden knowledge on applying DOI theory to increase recruitment effectiveness.

Keywords: recruitment challenges, diffusion of innovations theory, underserved students, bridge programs, communication channels

Introduction

There has been increased national attention on the recruitment and retention of underserved students such as underrepresented minorities (URMs), women, first-generation students, low socio-economic status (SES) students, rural students, LGBTQIA+, veterans, and disabled students. To broaden participation and increase diversity in engineering and computing majors in 4-year universities and colleges, bridge and success programs (also called intervention programs in some literature) such as summer bridge, engineering scholar, and bootcamp have been used to support students' college transition and retention [1-8]. Some were initially created with federal funding support from U.S. National Science Foundation (NSF) Scholarships in Science, Engineering, Technology, and Mathematics Program (S-STEM) and Louis Stokes Alliances for Minority Participation Program (LSAMP) [9] and institutionalized later. Both S-STEM Scholars program and LSAMP Scholars program not only provide financial support to student participants but also cohort-based activities. Based on findings from them, more bridge and success programs were created across the U.S. with the support from federal, state, institutional, or industry partners [10]. While bridge and success programs are important and many are successful in retaining underserved

students, program leaders reported challenges in recruiting underserved students and difficulties in determining the most effective strategies [7, 11]. Few studies have focused on recruitment practice effectiveness, resource allocations, and partnerships [1, 6, 11-15], providing limited knowledge on how to tackle recruitment challenges. For example, communications with subject-matter experts (SME) on recruitment strategies suggested the use of churches and influential figures in communities to recruit URM and rural students in West Virginia, but such knowledge is not well documented in peer-reviewed publications to our knowledge. Although there is much literature on college and job recruitment of underserved populations [16], it is very important to recognize that bridge and success programs cannot simply duplicate university recruitment practices. For example, while some universities have used pipeline and targeted recruitment to reach underserved students [17-19], bridge and success programs may not be able to use these strategies [7, 10]. Some bridge program leaders have reported anecdotally that they are not allowed to contact the parents of target students even though this can be an effective strategy [6, 20, 21]. The current political environment in some states that canceled diversity, equity, and inclusion (DEI) offices [22] has also complicated practices allowed by bridge and success programs to recruit underserved students, limiting their ability to recruit target populations. A study of an S-STEM scholar program illustrated the importance of intra- and inter-institutional partnerships for effective recruitment [6], which may be challenging for a new bridge program that lack such partnerships. Researchers also recognize dilemmas in co-curricular support in funding, time commitment, visibility, perception, equity, etc. [23, 24] and acknowledge that unintended disadvantages exist (e.g., time commitment, cliquish community, always engineering) [25]. Additional challenges in recruitment were reported during and after COVID [3, 26, 27].

Effective recruitment strategies should consider factors critical to both students' awareness and decision making. Practical recruitment methods (e.g., language, personalization, communication methods, parental involvement, etc.) can impact the effectiveness of recruiting underrepresented students [28, 29]. For example, it has been suggested that the use of gender-fair language can reduce male bias during job recruitment [30]. Woods et al. increased their female engineering undergraduate enrollment by changing their recruitment materials and website to reflect factors important to both men and women and they added information about helping others, the environment, working on important global problems, size of their campus, and opportunities for graduate education to their materials [31]. Castro recommended anti-deficit language in recruitment and retention programing [32]. Other studies suggest the importance of family SES and parental involvement in the recruitment of students [20, 21], thus recruitment efforts of bridge programs should include family members like parents [27]. It is important to compare effectiveness of different communication methods including both digital-based (emails, websites, social media, etc.) and traditional methods (campus open house, campus visit days for high school students, mailed flyers, high school counsellors and teachers, etc.) [14, 33]. Although those recruitment practices are for college and job recruitment, it may help recruitment of bridge and success programs.

Among limited literature on recruitment for engineering bridge and success programs, difficulties in identifying the most effective strategies and inconclusive effectiveness for the same recruitment methods in different studies were reported [8, 11, 14]. An effective recruitment strategy may need

to factor in when, where, how, and through whom to approach the prospective students (timing, communication channels, change agents, etc.). A communication channel is "the means by which messages get from one individual to another" and a change agent is "an individual who influences clients' innovation-decisions in a direction deemed desirable by a change agency" [34]. For example, personalized invitations reportedly captured student interest based on studies of an engineering S-STEM scholar and a geoscience success program [6, 29]. Mouth played an important role in reaching underserved students [6]. Physical media (e.g., flyers and postcards), phone calls, and in-person events/discussions were reported to be important for students' awareness of their programs [7, 8]. There are contradictory results for the effectiveness of email [6, 8, 14, 27, 29].

Theoretical Framework

Although many engineering bridge and success programs in universities and colleges have existed for decades, they can still be viewed as an innovation in higher education in that they are new to many prospective underserved students and their families. It is difficult to get an innovation adopted even if it is advantageous. Many engineering bridge and success programs clearly face similar adoption challenges as other innovations.

The research is based on the Diffusion of Innovations (DOI) theory [34] that has been used in marketing, public health, education, etc. [35-37]. Diffusion, as a special type of communication, "is the process in which an innovation is communicated through certain channels over time among the members of a social system" [34]. DOI theory proposed five stages of the adoption process for new innovations: awareness, interest, evaluation, trial, and adoption, which are renamed as knowledge, persuasion, decision, implementation, and confirmation in later editions of the book. It illustrated four main elements (the innovation, communication channels, time, and a social system) are important elements in the diffusion, indicating that even a well-designed bridge and success program (the innovation) can lack participation (low adoption rate) due to the lack of other diffusion elements. DOI also describes variables influencing the adoption rate: perceived attributes of the innovation, type of innovation-decision, communication channels, nature of the social system, and extent of change agents' promotion efforts. Communication channels and change agents can play a critical role in students' awareness and adoption of bridge and success programs and DOI theory provides insights into them. For example, the cosmopolite channels (connecting members outside of a social system) and mass media channels are important for the awareness stage while localite channels (connecting members within a social system) and interpersonal channels are important for the interest stage. Therefore, it is important to include communication channels and change agents both outside and within the social system of underserved students and implement interpersonal communications in recruitment. This explained why word of mouth was reported to be an important method to reach underserved students [6]. In addition, different types of interaction and information may be needed at each stage to encourage adoption (students' participation in engineering bridge and success programs). When and how to apply the channels and agents differs at each stage according to DOI theory, which may explain why bridge and success programs reported difficulties in identifying the most effective recruitment methods and contradictory effectiveness of some recruitment methods [8, 11, 14, 33, 38] .

Examining decision processes and diffusion elements using DOI can help to identify obstacles and aids affecting underserved students' awareness, decision, and adoption of engineering bridge and success programs. For example, a pilot study in a public R1 institution in the Appalachian region with a considerable number of first-generation, low SES, and rural students showed low student awareness of their summer bridge program, indicating that gaps exist even in the first stage of the adoption process [8]. Another study showed that lack of exposure to college resources hindered the awareness of reliable recruitment information and lowered the number of applications from first generation and low-income students [39]. The DOI framework was used to examine the awareness and adoption rates of summer bridge programs (one type of engineering bridge and success program) in the U.S. from the department chairs' perspective [40]. But the perspectives of the program leaders and students are missing. Therefore, it is also important to investigate the awareness and adoption of engineering bridge and success programs from the perspectives of program leaders and students of engineering bridge and success programs.

Research Questions

As discussed above, there is a knowledge gap in systematic documenting of recruitment methods currently used by engineering bridge and success programs in 4-year universities in the U.S. and understanding their effectiveness in recruiting underserved students. Our mixed-method research project aims to fill the knowledge gap. The study includes three stages to examine: (1) perspectives from program leaders, (2) perspectives from students, and (3) a comparison of students and program leaders' perspectives and analyzing the alignments and differences. Perspectives from program leaders are important because students' responses in our previous pilot study showed misalignment between students' perceived effective communication methods and their actual effectiveness on recruiting underserved students [8]. The key research questions discussed in this paper for the first stage of the study are: (1) what recruitment methods (communication channels, change agents, and timing) do engineering bridge and success program leaders use to distribute recruitment information to prospective students? (2) what methods do engineering bridge and success program leaders believe to be effective to recruit underserved students? (3) what do engineering bridge and success program leaders believe to be the factors that drive prospective students' decision-making about enrolling in their program? (4) what are constraints on recruitment strategies that are out of engineering bridge and success program leaders' control if any?

Research Methodology

Design

An explanatory sequential mixed methods study is being used to address the research questions [41]. The study is currently in stage 1. A survey and a 45-min follow-up interview were designed for the engineering bridge and success program leaders at 4-year institutions in the U.S. and approved by the Institutional Review Board (IRB). The survey was distributed via Qualtrics. The follow-up interviews will allow participants to expand on their survey responses and will be conducted in Zoom with survey participants who choose to be interviewed. The survey items and

interview protocol addressed existing recruitment practices, recruitment resource allocation, recruitment challenges faced, program targeted student populations, program leaders' belief of factors that should drive prospective students' decision-making, program leaders' own assessment of the effectiveness of their different recruitment strategies.

Sampling Procedures

The survey participants were engineering bridge and success program leaders at various 4-year universities across the U.S. (sample sites) and were recruited using multiple methods. (1) A list of engineering bridge and success programs and contact information was compiled based on the information found via internet and professional connections. Three email requests containing the survey link were sent to these contacts. (2) Flyers and in person verbal invitations were distributed at conferences such as the American Society for Engineering Education (ASEE) annual conference and WE24: Together We Rise (Society of Women Engineers annual conference) to encourage potential participants to reach out to the researcher to get the survey link. (3) Qualtrics survey links were distributed via professional organizations such as ASEE and National Association of Multicultural Engineering Program Advocates (NAMEPA) to potential participants. Survey link recipients and survey participants were encouraged to share the survey link with other engineering bridge and success program leaders. Those who supervise multiple bridge and success programs were encouraged to ask their leader team members to fill the survey for each program. Since it is difficult to identify all engineering bridge and success programs and their leaders, snowball sampling was used as a cost-effective way to reach participants but may introduce sample bias.

When compiling the list of bridge and success programs, it was challenging to find all engineering and success programs and accurate contact information of their leaders. Many bridge and success programs either lack a dedicated webpage, or only provide an online application form without contact information or only list a general email address without mentioning the leader's name. In addition, some programs ceased existence or changed (not a bridge or success program anymore) while their online information was not updated. Finally, there is no known nationwide platform/affinity group for the bridge and success program leaders. One leader replied to the PI's email request and ask the PI to initiate engineering bridge program leader meetings to share ideas and foster potential collaboration. Although the survey was also distributed via professional associations like ASEE and NAMEPA, most current responses were from direct email invitations and communications in the ASEE conference. This phenomenon aligned with findings from literature [40].

The list of engineering bridge and success program includes programs from different institution sizes and types such as public/private, doctoral research universities/liberal arts colleges/religions affiliated colleges, Predominantly White Institutions (PWI)/Minority Serving Institutions (MSI) from all 50 states with different funding sources such as federal, state, cooperation, and institutional. Diverse engineering bridge and success program types such as summer bridge, bootcamp, and LSAMP and S-STEM scholars were included. The intent was to have at least two programs per state and diverse representations from different types of institutions in the sample. However, only one engineering bridge and success program could be identified in some states and it was difficult to find such program in private and/or small baccalaureate institutions. The final

list includes 122 bridge and success programs from 107 institutions, including 4 Historically Black Colleges and Universities (HBCUs), 16 Hispanic-Serving Institutions (HSIs), 10 Asian American and Native American Pacific Islander Institutions (AANAPISI), 1 Tribal Colleges and Universities (TCU), 1 Alaska Native and Native Hawaiian-Serving Institutions (ANNH), 17 private institutions including 8 religious affiliated, and 7 primarily undergraduate institutions.

Participants

There were 25 valid survey responses and 10 potential interview participants by mid-October 2024. The interview interests were higher than expected (8%) while the current survey response rate is about 20%. Demographics information of the participants (program leaders) was not collected in the survey as the research does not intend to analyze whether demographics of program leaders affect how they report recruitment practices and barriers of their programs. Most respondents are from PWI, public institutions, and/or doctorial research universities. There are a few respondents from private, MSI or non-doctorial institutions, including one private, one HSI, one HSI and AANAPISI, two undergraduate institutions, and two institutions primarily offering undergraduate and master's degrees.

Survey Instrument

Ten subject-matter experts in the field of survey developments, engineering bridge and success program recruitment, qualitative research, and mixed-method research provided inputs and evaluation of the survey instrument. The survey instrument was developed based on items from the literature on recruitment, communication, and cocurricular programs [23, 33, 38, 42]. For example, it include items that assessed effectiveness of student recruitment practices used by Agriculture colleges in the U.S. and validated through content and face validity [33] as well as items of student decision-making factors for cocurricular programs [23]. A few additional items on communication channels and change agents were added according to findings from a pilot study on summer bridge program recruitment [8, 14], the PI's recruitment experience as an engineering bridge and success program leader, and suggestions from SMEs. For example, "influential figures in faith-based organizations" was included in the survey as a change agent as a result of the SME's suggestions, although the literature does not mention this method of recruitment for engineering bridge and success programs. The survey instrument was then piloted by several engineering bridge and success program leaders using the think-aloud protocol. During the review and pilot, it was determined that the initial survey was too long (20-30 minutes to complete). Considering the small sample, a decreased completion rate due to survey fatigue may have hindered response quantity and quality. Therefore, the survey items were consolidated, and some questions were moved to the interview protocol to shorten the survey so that it was possible to complete within 10 min. Jargon was removed and terms were better defined based on the feedback. For example, the terminology "communication channels" and "change agent" were found by SMEs and pilot to be very confusing to participants unfamiliar with communication studies. Therefore, those terms were changed to "communication tools" and "people involved in recruitment" respectively. In addition, wording was carefully chosen to reduce political environment concerns.

The final survey included 13 questions in the following five sections: program basic information, current recruitment practices (frequency and types of communication channels and change agents

as well as the timing to distribute the recruitment information), effectiveness in recruiting underserved students and barriers, student decision-making factors, and follow-up questions where survey participants can opt into the interview and provide additional information. The survey items included 6 Likert-scale, 2 multiple choices, and 5 open-ended items. The communication channels included in the survey are mail/flyers, text messaging, email communications, phone calls, websites, campus tours/visits (bringing students to your institution), booths at regional/national conventions, college fairs, visit high schools (via STEM programs, career events/programs, booths, etc.), social media (Facebook, Instagram, Twitter, etc.), and other (please fill in the blank). The change agents included in the survey are engineering bridge and success program team members, college admissions advisors, institutional inclusive offices/initiatives, high school guidance counselors, high school STEM teachers, community partners, professional or student organizations, students/program alumni (ambassadors), influential figures in faith based organizations, social media influencers, faculty, instructors, mentors, parents or other family members of prospective students, and other (please fill in the blank). The final item of the survey requested name and email from those who were interested in being contacted for interview scheduling or further communication but was otherwise anonymous. Interview participants will be entered in a drawing for a $50 Amazon gift card after completing data collection; five winners will be selected.

Survey Distribution Procedures

The SMEs suggested that mid-semester (e.g., March-April, September-October) would be the best time frame to distribute the survey to program leaders. Due to the PI's changing of institution and the long process of grant transfer, the survey was distributed via email in early July 2024, mid-September, and mid-October; via NAMEPA newsletter in August and newsletters of ASEE Women in Engineering Division (WIED) and ASEE First-Year Programs Division (FPD) in September.

Data Analysis

All data will be de-identified for analysis. A quantitative analysis of the Likert-scale and multiple response items survey data will be conducted using Excel and SPSS. Analyses may include *t*-tests, analysis of variance (ANOVA), correlation, and non-parametric statistics. Confidence intervals, effect size, and power will also be computed. Qualitative analysis will be conducted for open-ended questions in the survey. Quantitative data will be analyzed along with qualitative data to provide a more complete answer to the research questions.

Preliminary Results and Discussions

Preliminary results of the reported barriers were analyzed. Out of the current 25 valid survey responses, 23 reported that they had encountered barriers to identify and communicate with prospective underserved students about their programs. Most of them reported multiple barriers. The results are illustrated in Figure 1. Lacking time, resources, and funding were the top barriers. Other barriers mentioned by program leaders include "lack of interest from community", "lack of institutional support", "understaffed", "gatekeeping of other organizations on campus", "lack of

engagement with feeder institutions and organizations", "students thinking the communication is spam (whether email or text) despite using university branding; there is so much junk/noise out there, students (people in general) have a hard time figuring out what is real". Another mentioned that they "do not have information on students who identify as having two or more races (which races) for sending information. Students can find the information on the website but do not receive targeted information". Among these responses, "lack of institutional support" and "gatekeeping of other organizations on campus" can be categorized as "lack of institutional support" or in some cases can result in "lack of resources (personnel or inter-institutional partnership resources [6] or intangible assets/connections [7]). "Understaffed" is a type of "lack of resources". In the open comment area of the survey, one participant reported an upcoming concern due to the recent regulation changes on DEI: "Our DEI recruiter has been fantastic. Unfortunately, this type of recruiting is no longer legal in my state (state name is redacted to protect the participant)."

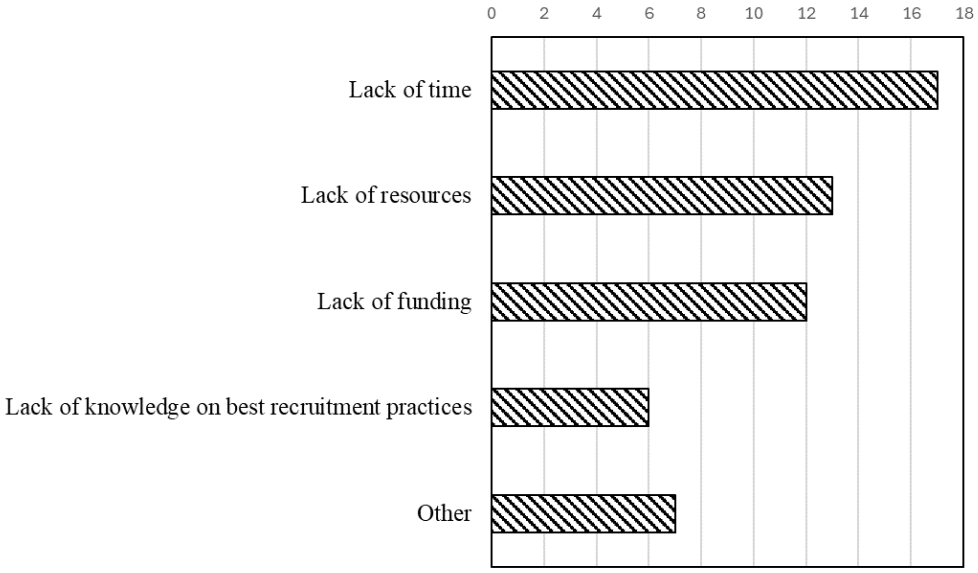

Figure 1 Barriers that bridge and success program leaders encountered to identify and communicate with prospective underserved students about their programs

The top barriers reported by program leaders (lacking time, funding, resources/institutional supports) can be interrelated, so it is not unusual that 9 out of 23 leaders reported barriers in all of them (time, funding, and resources). Based on DOI theory, different communication channels and change agents are needed for different stages of the diffusion. Implementing effective recruitment strategies that include various communication channels and change agents (two main elements for diffusion) at different stages and decent extent of change agents' promotion efforts (a variable for diffusion) will need time, funding, and resources. Programs lacking those supports may not be able to use all necessary communication channels and change agents at the adequate frequency to reach the adoption stage (convincing students to participate in the bridge/success program). In addition, lack of support also indicates lack of a social system (a main element for diffusion) to support the program leader to recruit underserved students.

"Lack of knowledge on best recruitment practices" was mentioned 6 times out of 23 responses, showing the needs and importance to understand effective recruitment practices. "Lack of interest",

"lack of engagement", and "junk/noise to students" can be related to recruiting practices, particularly how to use communication channels and change agents, but also indicated issues in some stages of the diffusion process (awareness, interest, evaluation, and adoption). The lack of accurate information for potential students of mixed race or ethnicity is a growing challenge for programs doing targeted recruitment. All those responses showed connections to the DOI theory.

Finally, it is important to mention that the survey instrument did not include a question explicitly probing legal DEI regulation barriers. With the increase in state regulations on DEI, there may be growing regulation barriers, which could be investigated in the interview. Legal DEI regulation barriers can contribute to the "social system" element and the "nature of the social system" variable in the diffusion based on the DOI theory.

Conclusion and Future Work

An explanatory sequential mixed methods study was designed using DOI theory to address the knowledge gap on the recruitment of engineering bridge and success programs. The survey and interview protocols for the first stage of the project (perspectives from bridge and success program leaders) were developed based on modified items from the literature. Preliminary results from the current survey responses confirmed that there are several barriers to the recruitment of underserved students for engineering bridge and success programs. Those barriers are related to the lack of support (time, funding, resources/institutional support) and knowledge on necessary communication channels, change agent, and a social system to recruit underserved students.

For future work, the survey and interview of the engineering bridge and success program leaders will complete the first stage of the research project. The second stage will include the administration of surveys and interviews with students (prospective students of the engineering bridge and success programs) and analyzing their responses. The third stage will compare perspectives of students and program leaders and analyze the alignments and differences.
Specifically, we will examine the following in the first stage:

(1) current recruitment practices of the engineering bridge and success programs: for example, the frequency and types of communication channels and change agent as well as the timing to distribute the recruitment information,
(2) the effectiveness of those communication channels and change agents on recruiting underserved students, which is reported by program leaders,
(3) current recruitment barriers that are reported by program leaders,
(4) student decision-making factors that are reported by program leaders, and
(5) mapping results above to the DOI theory.

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Appendix A Survey Instrument

Baccalaureate Engineering Success and Transition Programs (BEST programs) refers to summer bridge programs or student success programs for college engineering students in four-year institutions (bachelor's degree) in the United States to support their transition and success in engineering. For example, summer bridge programs, programs associated with S-STEM scholarships, math remediation programs, co-curricular programs, etc. BEST programs as defined here do not include programming that is solely tutoring, advising, or mentoring programs, or programs solely in two-year institutions (associate degree) or for K12 students. Underserved students may refer to women, underrepresented minorities (URMs), first-generation students, low-income, rural, disabled, and veteran students.

Recruitment means the entire process of searching for prospective students, distributing information to prospective students and/or their support system, and encouraging prospective participants to enroll. The cycle starts as soon as you begin advertising the program until students decide to join the program, including but not limited to marketing and communication actions, people, and channels to help raise students' awareness of your program.

Program Basic Information Section

1. The full name of your institution (please do not use abbreviation or informal name): ___
2. The name of your BEST program (If you manage multiple programs, please choose the one closest to our BEST program description. You are encouraged to fill this survey multiple times for different BEST programs under your supervision and ask your team members to fill the survey for multiple programs): _____

Your Current Recruitment Practices Section

3. Rate how frequently the following communication tools were used to recruit all prospective students for your program.

Communication tools	1 = Never	2 = Rarely	3 = Sometimes	4 = Often	5 = Always
Mail/flyers					
Text messaging					
Email communications					
Phone calls					
Websites					
Campus tours/visits (bringing students to your institution)					
Booths at regional/national conventions, college fairs					
Visit high schools (via STEM programs, career events/programs, booths, etc.)					
Social media (Facebook, Instagram, Twitter, etc.)					
Other (please fill in the blank)					

4. Rate how frequently the following people were involved in recruiting all prospective students for your program.

People	1 = Never	2 = Rarely	3 = Sometimes	4 = Often	5 = Always
BEST program team members					
College admissions advisors					
Institutional DEI offices/initiatives					
High school guidance counselors					
High school STEM teachers					
Community partners					
Professional or student organizations					
Students/program alumni (ambassadors)					
Influential figures in faith based organizations					
Social media influencers					
Faculty, instructors, mentors					
Parents or other family members of prospective students					
Other (please fill in the blank)					

5. When do you start to distribute the program information to all prospective students (baseline is the start date of the program)?
    a. <3 months
    b. 4-6 months
    c. 7-9 months
    d. 10-12 months
    e. >1 year

Effectiveness on Recruiting Underserved Students Section

6. Rate the effectiveness of using those communication tools to recruit underserved students.

Communication Tools	1 = Very Ineffective	2 = Ineffective	3 = Neither Ineffective nor Effective	4 = Effective	5 = Very Effective	6 = Not in Use	7 = I do not know
Mail/flyers							
Text messaging							
Email communications							
Phone calls							
Websites							
Campus tours/visits (bringing students to your institution)							

Booths at regional or national conventions, college fairs							
Visit high schools (via STEM programs, career events/programs, booths, etc.)							
Social media (Facebook, Instagram, Twitter, etc.)							
Other (please fill in the blank)							

7. Rate the effectiveness of involving those people to recruit underserved students.

Communication Sources or Agents	1 = Very ineffective	2 = Ineffective	3 = Neither Ineffective nor effective	4 = Effective	5 = Very effective	6 = Not in Use	7 = I do not know
BEST program team members							
College admissions advisors							
Institutional DEI offices/initiatives							
High school guidance counselors							
High school STEM teachers							
Community partners							
Professional or student organizations							
Students/program alumni (ambassadors)							
Influential figures in faith based organizations							
Social media influencers							
Faculty, instructors, mentors							
Parents or other family members of prospective students							
Other (please fill in the blank)							

8. What barriers, if any, do you encounter to identify and communicate with prospective underserved students about your program (check all applies)?
    a. Lack of time
    b. Lack of resources

c. Lack of funding
d. Lack of knowledge on best recruitment practices
e. Others
f. None

Student Decision-making Factors Section

9. Rate the degree to which you agree or disagree that the following factors led underserved students to enroll in your program.

	1 = Strongly disagree	2 = Disagree	3 = Neither disagree nor agree	4 = Agree	5 = Strongly agree	6 = Not applicable	7 = I do not know
Financial support (scholarship or stipend)							
Early move-in							
Social benefits (making friends and community building)							
Academic benefits (catch up on math, science, engineering courses or projects or be more successful college courses)							
Professional benefits (networking with faculty, staff, upper-class students, alumni, professionals, etc.)							
Become familiar with institutional and academic resources							
Parent/family told them to							
Other (please fill in the blank)							

10. Rate the degree to which you agree or disagree that the following factors prevent prospective underserved students from enrolling in your program.

	1 = Strongly disagree	2 = Disagree	3 = Neither disagree nor agree	4 = Agree	5 = Strongly agree	6 = Not applicable	7 = I do not know
Lack of access to program recruitment materials							
Lack of knowledge of where to find or identify program recruitment materials							
Unaware of the long-term benefits of the program							

Funding (affordability of a program and what help exists to meet funding needs)							
Time commitment (time required to participate and the timing of the event as it relates to eligibility)							
Structure (availability, eligibility, or activities and/or services that are physically and reasonably accessible by students)							
Not feeling like one would fit in							
Believing the program has a deficit-based orientation							
Do not think they need the program							
Concerns on culture, equity, and inclusion							
Not interested in the content							
Political concerns							
Other (please fill in the blank)							

Follow-up Section

11. If there is anything else you want to share about your program and recruitment of underserved students, or any necessary clarification to the previous questions in this section, please fill the space below. If not, please fill NA.
12. The purpose of this research is to explore, document, and understand effective recruitment practices to reach and recruit underserved students into BEST programs. Would you be interested in a follow-up interview (approximately 30-45 min via Zoom)? You could win one of five $50 Amazon gift cards after data collection. The odds of winning will depend on the number of participants and the estimated number of interview participants will be 5-30 people. If so, please provide your contact information (name & email) to schedule the Zoom interview. If not, please fill NA.
13. If you are interested in receiving early research findings and collaborations, please provide your contact information (name & email). If not, please fill NA.