

How graduate school bridge programs can help increase diversity in STEM subject admission

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While much attention has been given to the need for ethnic minorities to pursue college education in order to compete in the labor market, there has been less attention given to graduate school enrollment rates among people of color. In new work, [Bridgette Peteet](#) examines the EMERGE graduate school bridge program, finding that it increases the pool of highly qualified, diverse candidates for graduate admissions. Building on the EMERGE case study, she writes that successful bridge programs have six major components: long term commitment from the university, financial support, effective leadership and mentorship, cultural engagement and academic and admissions preparation.



Many indicators suggest that a bachelor's degree is becoming equivalent to a high school diploma and that the need for people to pursue advanced education in order to compete in the labor market is growing more established. Ethnic minorities are the fastest growing segment of the US population and are enrolling in college at high rates; yet ethnic minority enrollment in graduate school lags behind. In light of these trends, it is evident that a great deal of attention has been paid to undergraduate admissions and very little to graduate degree preparation.

Limitations of Existing Bridge Programs

Ethnic minorities are underrepresented in Science, Technology, Engineering, and Math (STEM) graduate school programs nationwide and few programs exist to address this gap. The [Ronald E. McNair Postbaccalaureate Achievement Program](#) is a great example of a long-term, federally funded initiative to provide the training that is specific for graduate admissions preparation. For example, graduate admissions committees are interested in strong academic records, research and scholarly activities, teaching experience, and relevant work/volunteer experience. Uninformed undergraduates tend to spend excessive time on extracurricular activities and jobs that are immaterial to graduate admissions committees, mistakenly thinking that the activities that got them into undergraduate programs are relevant for the next stage of training. This is especially true for ethnic minorities who are overrepresented among first generation college students (i.e., first in their family to attend college) and who may be even more unfamiliar with graduate school enrollment. Programs like McNair are useful, but have several inherent limitations.

In a new study, we examined the effectiveness of the EMERGE, a week-long, summer graduate bridge program in psychology, which was designed to make graduate school applicants of color academically ready, provide professional development, and admission preparation. We found that applicants felt more prepared for the graduate school admissions process as a result of participating in the program, and the admissions rate of participants was also higher than the national average.

The Case for Alternative Bridge Programs

Long-term programs may not be feasible for non-traditional or working students, which is an issue common among racial/ethnic minority students. Students may become aware of long-term bridge programs too late in their academic career by which time they are deemed ineligible. The training in national bridge programs may be broad and not specialized. Lastly, the small enrollment capacity necessitates alternative programming.

Individual Preparation for Graduate School

Diverse undergraduates who desire to go to graduate school should seek out these programs and take advantage of the opportunities provided. If programming is unavailable, students should focus on their academic record, entrance

exams, letters of recommendation from faculty (e.g., serve as a research or teaching assistant), mentorship, career advice from professionals in the field (e.g., gaining clinical experience), and admissions materials. Field-specific preparation is likely the optimal strategy to prepare more racial/ethnic minority students for graduate admissions.

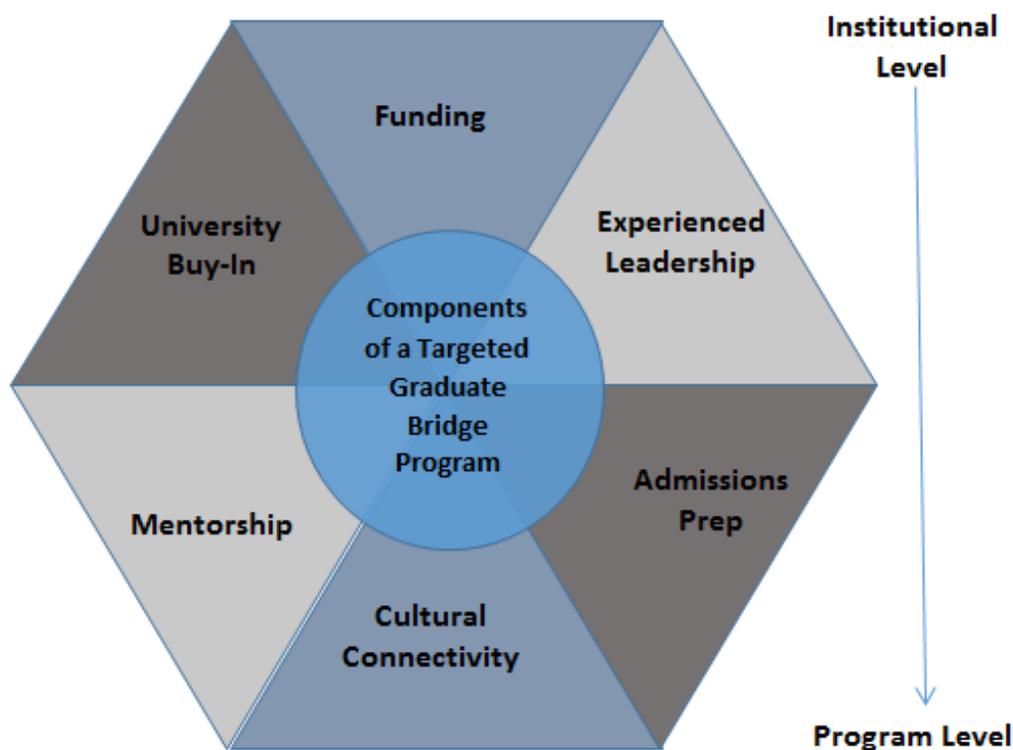
The Benefits of Field-Specific Bridge Programs

Bridge programs such as EMERGE increase the pool of highly qualified, diverse candidates for graduate admissions. If a bridge program recruits externally, it builds long-term connections and essentially “feeder” institutions for future admissions. Lastly, it builds the university’s reputation as an institution that values diversity and diverse students will want to apply. For an institution, long-term and large-scale programs are not always financially practical and alternatives should be considered. Department-level bridge programs are ideal because they can be tailored to a specific field (e.g., biology, education), duration, and content.

Guidelines for Designing a Bridge Program

These following guidelines, also shown in Figure 1, are based on EMERGE:

Figure 1 – Six components for developing a specialized bridge program



1. University Buy-In

The infrastructure within the university should demonstrate a long-term commitment to diversity inclusion and retention. Diverse representation across the board from administrators to students is advantageous, but at minimum, clear plans to prioritize diversity is needed.

2. Financial Support

The program budget should be based on the duration of the program, number of students served, and the necessary accommodations (e.g., housing, food). Diverse avenues for funding should be explored, including in-kind donations, department through university level funding, individual alumni or associations, professional societies, and internal and external grants.

3. Program Leadership

Effective leadership is essential to the success of a bridge program. In diversity initiatives, it is especially necessary to have people with the knowledge and experience with diversity and inclusion. The program team should be representative, having some reflection of the target group. Leadership teams should seek input from undergraduate and graduate students to gain an understanding of their needs.

4. Mentorship

In successful programs, mentorship is both personal and professional. This is often especially necessary among racial/ethnic minorities. A mentor with strong research expertise is useless if they are difficult and discouraging. It is advantageous to have mentors who have demonstrated effectiveness in mentoring students of color. Graduate students are also a useful resource and can serve as excellent role models/junior mentors for a bridge program.

5. Cultural Engagement

Infusing cultural elements into program helps promote engagement. Cultural activities show an appreciation for the values and perspectives of diverse people. Examples of these activities include:

- Service learning, a teaching and learning strategy that integrates appropriate community service with instruction and critical thinking to supplement the learning experience, teaches community responsibility, and strengthens communities.
- Shadowing diverse professionals, which entails observing the work of researchers, professors, or practitioners.
- Professional presentations/panels of diverse researchers and practitioners in the community
- Cultural excursions to venues that promote diversity (e.g., museum, exhibits, performances).

6. Academic/Admissions Preparation

Graduate admissions require a sound academic record and flawless application materials. It is helpful for bridge programs to offer assistance on both. Grades are very important, but a less than stellar performance might be mitigated by excellent performance in a remediation, advanced undergraduate, or basic graduate course. Another program component should be admissions test preparation (e.g., Graduate Record Examination [GRE], Law School Admissions Test [LSAT]) from a qualified professional. Additionally, detailed assistance with application materials such as a curriculum vitae (CV) and personal statement is essential. Programs should train program participants on the process of obtaining strong letters of recommendation from faculty.

The lack of diversity in STEM fields a solvable problem. Strategic interventions such as specialized bridge programs are a viable resolution to this issue. These guidelines offer a concrete strategy to help institutions address this gap in the educational pipeline and increase diverse representation in STEM fields.

This article is based on the paper, 'Beyond a Bachelor's: Implementing a Graduate School Preparation Program', in the Journal of Black Studies.

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