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Impact of Recruitment, Retention and Enrichment Activities in Preparing Scholars to become Future Faculty

Abstract

An alliance was developed among three Midwestern universities to increase the number of underrepresented minority (URM) students receiving doctoral degrees in the science, technology, engineering, and mathematics (STEM) disciplines. To achieve this goal activities encompass the three areas that include recruitment, retention, and enrichment. Recruitment initiatives focus on strategic partnerships, discipline-based events, student collaborations, summer research programs and visitation programs. Retention objectives are directed at scholars, tutoring, summer transition programs, and a faculty mentoring network. A primary goal of the Scholars enrichment program is to encourage Scholars to pursue careers as faculty members. Graduate students interested in academic careers must be prepared for the diverse faculty opportunities at the various types of institutions. Graduate education plays an important role in the professional development of graduate students. The enrichment activities are based on proven models, including the national Preparing Future Faculty program, that are adapted to align with program goals. To meet programmatic goals and the diverse needs of graduate students, a multi-prong approach was developed that includes: (1) a formal graduate-level course, (2) custom workshops and seminars, (3) engagement and service opportunities, (4) travel awards, and (5) individual career consultations.

The topics covered through the multi-prong approach explore faculty roles and responsibilities as they relate to the missions of an institution of higher education, along with the type of institution including community colleges, liberal arts colleges, research universities, and minority-serving institutions.

The institutional data along with program evaluations reflect the efforts of these programs. Application, enrollment, and degree numbers are steadily increasing. The number of students participating in the program is also on the rise. Continued growth in the number of URM students receiving doctoral degrees will provide a more culturally diverse faculty, thus achieving the AGEP program goals.

Significance of Project and Rationale

It is projected that by 2050 the population that is now considered a minority will surpass the majority with 55% of the population being working age minority members. Ideally the composition of faculty and students within higher education would reflect the composition of the United States population. The number of minority members obtaining a Ph.D. particularly in the STEM fields has not kept pace with the growing population. Overall, only a small percentage of Ph.D. recipients are members of an under-represented minority group, 2.5% Hispanic, 3.6% Black, and .4% American Indian. In addition, faculty members in the U.S. do not represent the changing demographics with only 6.4% being Black, 3.8% Hispanic, and .5% American Indian/Alaska Native.
The National Science Foundation (NSF) recognized the need to increase minority Ph.D. recipients in the STEM fields, therefore funding programs such as the Alliance for Graduate Education and the Professoriate (AGEP) at the graduate level and Louis Stokes Alliance for Minority Participation (LSAMP) at the undergraduate level. AGEP works collaboratively with the LSAMP program to create B.S. to Ph.D. pathways with the STEM disciplines.

**Project Objectives**

The AGEP program has been successful, resulting in 24 alliances across the United States. This alliance is composed of three research universities in the Midwest. One primary goal of the AGEP program is to increase the number of graduate students matriculating with a Ph.D. in the STEM disciplines. Since doctoral students are the source of future faculty members, another primary goal of the AGEP program is to encourage underrepresented minority doctoral students in the STEM disciplines to pursue careers as faculty members. The AGEP program provides opportunities for AGEP students to establish a network of faculty and peer mentors, explore the diverse pathways that lead to academic careers, and develop a portfolio of skills and experiences that facilitate successful careers. Opportunities for faculty and peer mentoring begin during recruitment, continue through retention programs, and are strengthened, deepened, and mature through the enrichment programs. These goals and programs are informed through the literature and align with best practices identified in graduate education. Additionally, the practices enhance mentoring and encourage academic and social integration of doctoral students to careers in academia.

**Recruitment Initiatives**

Several strategies are utilized to increase the pool of students applying to graduate programs in the alliance.

1. **Strategic partnerships.** Establishing strategic partnerships with colleges and universities, particularly Historically Black Colleges and Universities (HBCUs), Hispanic-Serving Institutions (HSIs), and tribal colleges to develop several pathways for URM students to enter doctoral programs at Midwest University is a key recruitment initiative.
2. **Discipline-based events.** A second initiative involves recruitment at national conferences focused on STEM disciplines such as National Society of Black Engineers (NSBE), Advancing Hispanics/Chicanos & Native Americans in Science (SACNAS), American Indian Science & Engineering Society (AISES), Society for Hispanic Engineers (SHPE), and Minorities in Agriculture, Natural Resources, and Related Sciences (MANRRS).
3. **Student collaborations.** A third strategy focuses on key collaborations with minority student organizations such as the Black Graduate Association (BGA) and SACNAS. The BGA hosts the annual GRAD 101, a recruitment initiative that educates and encourages URM undergraduate students to explore graduate education. Topics include funding, GRE preparation, how to prepare graduate school applications, and what it means to be a graduate student. AGEP students recruit at their undergraduate alma mater as well as at national and regional conferences.
4. **Summer research programs.** A fourth initiative involves sponsoring students in summer research programs such as Consortium on Institutional Cooperation’s Summer Research Program.
and Summer Undergraduate Research Fellows (SURF) program. Summer research programs provide undergraduate students an opportunity to explore research, enhance research skills, and develop a mentor network focused on research.

(5) **Visitation programs.** Bringing students to campus to experience the culture, climate, and environment of the campus and department are key benefits of campus visitation programs. Students interact with faculty, staff, and graduate students prior to accepting admission in a graduate program.

**Retention Objectives**

Several strategies are employed to enhance student retention in doctoral programs. The AGEP office, along with other organizations on campus, provides a variety of opportunities for students to enhance the academic and social integration and develop interdisciplinary partnerships, supporting retention and completion goals. Every URM student enrolled in the STEM disciplines are members of the AGEP program. AGEP student members receive communication regarding resources that assist in degree completion, and funding and employment opportunities.

(1) **AGEP scholars.** AGEP scholars are advanced doctoral students who facilitate the recruitment, retention, and enrichment activities. Scholars participate in tutoring and mentoring activities for undergraduate and graduate students. Additionally, scholars develop and conduct workshops focused on undergraduate retention and completion programs. AGEP scholars receive a small stipend for each semester in exchange for their participation.

(2) **Tutoring.** Tutoring is available for any graduate student and is funded by the AGEP program. The faculty advisor identifies both the student and the tutor.

(3) **Summer transition program.** The Bridge program facilitates enculturation into the university for incoming graduate students. Activities focus on faculty and peer mentoring, establishing research programs, and socialization to the campus.

(4) **Faculty mentoring network.** More than two hundred faculty members aligned with the AGEP program, committing to graduating under-represented minorities with Ph.D. degrees in the STEM fields. Additionally faculty members recruit and support URM students through retention programs and enrichment activities. AGEP is currently working with ADVANCE, another NSF funded program, to provide an opportunity for the AGEP scholars to benefit from a formal mentoring program on campus. Through this collaboration students will be matched with faculty members who have volunteered to guide the students through their graduate studies. AGEP is continuously seeking more opportunities to involve faculty in the mentoring process.

**Enrichment Activities**

To meet programmatic goals and the diverse needs of graduate students, a multi-prong approach was developed that includes: (1) a formal graduate-level course, (2) custom workshops and seminars, (3) engagement and service opportunities, (4) travel awards, and (5) individual career consultations.
Graduate course. Preparing Future Faculty (PFF) is a 2 credit hour course which utilizes a Pass/No Pass grading system. Students meet weekly for 2 hours for a mentoring session with vice provosts, deans, and department heads. PFF explores faculty roles and responsibilities as they relate to institutional missions and institutional type (community colleges, liberal arts colleges, research universities, etc.). Faculty roles and responsibilities, the academic job search and hiring process, promotion and tenure, diversity in academia, disciplinary paradigms and assessment, are the topics discussed within the five contexts of teaching, research, service, faculty development, and balancing academic and personal life. GRAD 59000 is posted to the academic transcript and cannot be used to fulfill Plan of Study requirements.

Professional development workshops. Based on a building block framework, each building block is composed of a student learning outcome, content supporting the learning outcome, a group activity to engrain the content, a self-reflection activity to facilitate personalization of the concept, a graduate school success strategy, and an assessment component. Examples include the Speed Networking building block and the CV Peer Review workshop.

Engagement and service opportunities. A variety of opportunities for the AGEP scholars are made available for developing skills that will aid them in the professoriate. The students are presented with numerous activities in which they can volunteer to participate in during the semester. These include working one-on-one with under-represented undergraduate students, in preparation for careers in the professoriate.

Travel awards. AGEP students are encouraged to develop their presentation skills and enhance exposure within the scholarly community. Travel awards are awarded to students who have been accepted to present their research at national conferences.

Book project. Students also have the opportunity to join in a collaborative book writing project put forth through the Alliance. This project provides an opportunity for students to join their peers from other universities and create a product that will aid the retention and completion goals of future graduate students in their quest for a Ph.D.

Individual career consultations. AGEP students meet with professional development staff to review their portfolios and create an individual development plan (IDP) focused on developing experiences and skills necessary for faculty careers. The IDP includes outcomes, timeline, and a mentor.

Assessment and Evaluation

Institutional data is used to examine to what extent the goal of increasing the enrollment and graduation rate of under-represented students in the STEM disciplines are being realized. The data includes number of students who apply, are admitted, advance to candidacy, enroll and graduate. The data reflect a positive trend. For example, applications increased from 244 in 2004-05 to 333 in 2009-10 for an increase of 36% (Table 1). The total Ph.D. enrollees increased from 138 in 2004-05 to 168 in 2009-10 for an increase of 21.7%. The growth in Ph.D. enrollees indicates that the recruitment initiatives implemented are effective. Efforts are underway to assess the effectiveness of the individual recruitment initiatives. The areas considered focus on
which partnerships are most productive, which collaborations are most effective, and which venues yield the highest enrollments.

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Table 1. Number of URM Graduate Students in All STEM Disciplines at Midwest University

Evaluation and assessment of retention programs is ongoing with initial reviews showing an increase in participation of both students and faculty since inception. The number of scholars, frequency of participation, and types of activities attended, are some of the metrics used in the evaluation of retention programs.

To ensure that programmatic goals are met and learning outcomes are achieved, assessment is conducted. Several assessment methods, including formative and summative methods, direct and indirect, and quantitative and qualitative methods, are used. The primary programmatic learning outcomes focus on content, attitude, and, to a lesser degree, behavior. Additional data collected includes registration, attendance, and student demographic data to ensure that programmatic goals and student learning outcomes are met. Lessons learned from this multi-prong approach will inform enrichment activities and refine current models of professional development activities for graduate students.

Student learning outcomes focus on assumptions about academic roles, positions, practices, missions, and institutions, construction of an academic portfolio, construction of an institutional profile that relates career goals and faculty skill sets with institutional missions and departmental goals, and creation of an individual development plan for enhancing and maintaining faculty skill sets and competencies. Additionally, students develop strategies that facilitate the transition from graduate student to faculty member.

The research productivity of the AGEP students is shown through the increase in travel awards. The utilization of the travel award allows students to present their research at national conferences and further build their presentation skills. The number of scholar awards has increased overtime indicating student interest in the program. The scholar awards allow the students opportunities, such as mentoring and tutoring, to practice the skills they will need to become productive faculty members in the future. This is an important component of the overall goal of the AGEP program.

Since the inception of the AGEP program at Midwest University, the number of under-represented minority students enrolling and receiving their doctoral degree has increased. Enrichment activities focused on career development and understanding of faculty career paths encourages doctoral students to join the professoriate. The advancement in these areas increases the number of URM doctoral recipients who can pursue faculty careers, thus creating a more diverse culture in our institutions of higher learning.
Bibliography