

Minority Student Recruitment, Retention and Career Transition Practices: A Review of the Literature

References

Introduction

In the aftermath of anti-affirmative action legislation, with the recognition of the value that diversity brings to higher education and the workforce, and with the looming shortage of workers to meet labor demands, institutions of higher learning, private and public corporations and organizations, and professional associations have a renewed interest in the best recruitment and retention practices and programs to prepare ethnically and racially diverse students to enter professional careers. As pointed out by Lee (1991) in a comprehensive review of the recruitment and retention literature, these issues are not new. Indeed, the majority of the recruitment and retention issues discussed by Lee (1991) are still relevant to the recruitment and retention of minority students today.

This paper reviews the literature and highlights some of the key issues related to the recruitment and retention of minority students and professionals. A concerted effort has been made to describe a wide variety of programs and practices being implemented by multiple disciplines in their attempts to create a larger minority presence in their field.

In this paper, "minority students and professionals," "minorities," and "people of diverse race and ethnicity" all refer to the following racial/ethnic groups: African Americans or people of African descent, Asian Americans and Pacific Islanders and people of Asian descent, Hispanic Americans, Hispanics or Latino/Latina persons, and Native Americans and Alaskan Natives.

Demographics

In 2000, minorities comprised approximately 30% of the population of the United States (US Census Bureau). By 2050, it is projected that the minority population will represent approximately 50% of the total U. S. population, meaning ethnically and racially diverse people may no longer be a numerical minority (US Census Bureau). Between 1988 and 1998, minority student enrollment in colleges increased by 62.2 % (American Council on Education [ACE], 2001; Opp, 2001). ACE's Eighteenth Annual Status Report indicated that there have only been modest gains in minority enrollment in higher education throughout the 1990's. There has been an oscillating pattern of minority enrollment throughout the 1990's and during the past few years, rates have begun to slow considerably, calling attention to the need for college and university officials and professional associations to renew their efforts to recruit and retain minority students in higher education. (Ntiri, 2001; Rudenstine, 2001).

During the 1990s, the number of minority high school graduates increased with 73.4% African American students and 59.8% Hispanics in the 18 to 24-year-old age group completing high school. Over 81% of white 18 to 24-year-old students completed high school. There still remains an eight percentage point difference between 18 to 24-year-old African American and whites and a 21 percentage point difference between Hispanics and whites in terms of high school completion (ACE, 2001). In spite of modest increases in college enrollment and graduation during 1988 to 1998, sizable gaps still exist between the

college enrollment rates of minority and white students (Opp, 2001; Ntiri, 2001).

In 1995, 26.4% of the population consisted of minorities. It is projected that by the year 2010, 32.4% will be minorities and by 2050, 47.2% will be minorities (U.S. Census Bureau). By 2015, undergraduate enrollment is projected to expand by 2.6 million, 80% of these being minority students. White undergraduate enrollment is projected to decrease from 70.6% in 1995 to 62.8% in 2015 (Carnevale & Fry, 2000), with a corresponding increase in the percentage of minority students from 29.4% in 1995 to 37.2% in 2015. As the white, non-Hispanic proportion of the total population decreases from 73.6% in 1995 to a projected 52.8% in 2050, (U.S. Census Bureau). The traditional male white workforce will shrink by an estimated 11% (U.S. Census Bureau) while the minority workforce will expand rapidly. By 2028, it is expected that there will be a shortage of 19 million skilled workers to fill jobs in the U.S.

The Impact of Diversity

Diversity has a positive impact on the workplace, increases competitiveness of corporations in the global market, and improves education in the college classroom (Carnevale & Fry, 2000; Smith, 1991). The minority labor force is an important source of labor in the 21st century. The majority of jobs in today's technologically oriented society need knowledge and skills that require a college education (Carnevale & Fry, 2000; George, Neale, Horne, & Malcolm, 2001; Heller, 2001; Ntiri, 2001).

Predicted labor shortages in corporate America and in many professions make it essential that the corporate world increase the number of minorities and women with the skills necessary to fulfill their labor demand (Bruner, 2000; Carnevale & Fry, 2000; Ntiri, 2001). As the proportion of white males available decreases in the 21st century, the lack of a skilled labor force can curtail America's economic growth significantly (Astone & Nunez-Wormack, 1991; Carnevale & Fry, 2000; George, Neale, Horne, & Malcolm, 2001). Corporate America must seek to increase diversity in the workplace or face a decline in international competitiveness (Bruner, 2000; Carnevale, 1999). America's economic future mandates that issues of access and inequities in the education of minority students become a national concern.

Not only is it necessary to increase minority recruitment and retention in higher education to meet the workforce needs of corporations and industry, diversifying higher education brings its own benefits to the classroom (Carnevale & Fry, 2000, Diversity Digest, 2000; Rudenstine, 2001) and increases the quality of learning (Rudenstine, 2001; Smith, 1991). Diversity in the college classroom fosters intellectual development (Knefelkamp & David-Lang, 2000), reduces students' level of racial prejudice (Chang, 2000; Palmer, 2000; Diversity Digest, 2000), increases their tolerance towards racial and gender differences (Palmer, 2000; Diversity Digest, 2000), and facilitates students' explorations of diverse perspectives (Carnevale & Fry, 2000; Diversity Digest, 2000).

Recruitment Issues and Strategies

One of the realities confronting the United States is that a major proportion of racial and ethnic minority students in this country have unequal access to higher education (Ntiri, 2001). Many experience a variety of personal, environmental, and institutional barriers that result in limited or no access to college and university education (Opp, 2001; Thomason & Thurber, 1999). Some of these barriers include financial difficulty and lack of financial aid, the need to work full-time, lack of family support, lack of information about the college preparation and application process, low scores on traditional college admission tests, and often, an absence of role models who have gone to college (Lee, 1991; Ntiri,

2001).

Financial Difficulty

Lack of financial aid in the form of grants and scholarships is a major deterrent to minority student choice to attend college (Stewart, Russell, & Wright, 1997). As financial aid increases it has a positive effect on minority enrollment in postsecondary education (Lee, 1991). A large proportion of federal grants to minority students have been replaced by loans. Loans are often a disincentive for many minority students who are reluctant to incur large debts (Thomason & Thurber, 1999; Stewart, Russell, & Wright, 1997). The reduction in grant and scholarship-based aid, coupled with rising costs of tuition, room and board and related college costs, makes it extremely difficult for many minorities to attend college. Colleges and universities with a commitment to increasing minority enrollment must find ways to provide financial aid to students when they are making admission decisions (Thomason & Thurber, 1999).

Academic Under-preparedness

Many minority students are also academically under-prepared for college (Simon, 1993; Thomason & Thurber, 1999). A contributing factor is the large number of minority students who are concentrated in high-poverty schools that lack academic and financial resources, and teachers who are adequately prepared (Haycock, 2001). A National Center for Educational Statistics (NCES, 1996) report highlighted the disproportionate levels of poverty and unfavorable school climates experienced by many minority students, especially those living in urban areas.

The situation is exacerbated by a tendency in public schools for minority students to be placed in general tracks where they are less likely to be challenged academically. In doing so, teachers, school counselors and administrators cut off access to college preparation classes and consequently access to college (Simon, 1993). These barriers result in lower educational aspirations and hopes for many racial/ethnic minority children (Ntiri, 2001) as well as lower academic and career self-efficacy (Lent, Hackett, & Brown, 1999).

Students with high self-efficacy beliefs are often likely to develop interests in professional careers and higher education and have aspirations far greater than those being advanced by the individuals (e.g., educators, parents, etc.) around them. If these students perceive little or limited environmental support and sense barriers to desired career paths, they may not pursue those careers despite their interest or ability. Self-efficacy, according to Hackett and Betz (1981) is mediated by a person's beliefs or expectations about his/her capacity to accomplish certain tasks successfully or demonstrate certain behaviors. Bandura postulates that these expectations determine whether or not a certain behavior or performance will be attempted, the amount of effort the individual will contribute to the behavior and how long the behavior will be sustained when obstacles are encountered (ibid.). In the case of minorities, differential socialization experiences, including social and institutional discrimination, may cause children and youth to restrict their career interests and avoid particular career paths (Lent, Hackett, & Brown, 1999).

Recruitment Strategies

Recruitment of minority students must be a comprehensive process with a long-term, institution-wide

commitment to diversity (Astone & Nunez-Wormack, 1991; Dumas-Hines, 2001; Stewart, Russell, & Wright, 1997; Thomason & Thurber, 1999). Commitment to diversity at every level of the institution, on a philosophical as well as a financial basis, must form the base of all admission and recruitment efforts. The same applies to any profession or career field seeking to attract minority professionals to its ranks.

Understanding and Locating Minority Students

Recruitment strategies that work for traditional white students will not always work for racially and ethnically diverse students (Lee, 1991; Thomason & Thurber, 1999). It is important that any institution or profession seeking to attract minorities research what works better for attracting minority students (Chambliss, 2000; Dumas-Hines, 2001; Diversity Pipeline Alliance, 2002). Recruitment must respond to the specific needs and barriers of each group (Astone & Nunez-Wormack, 1991; Thomason & Thurber, 1999).

Admission officers and academic leaders need to be aggressive and innovative in their efforts to recruit minority students (Lee, 1991; Thomason & Thurber, 1999). They must be able to think "outside of the box" (Donnell, Edwards, & Green, 2002). If one is interested in recruiting undergraduate or graduate students of diverse race and ethnicity, outreach and awareness campaign programs must be directed where minority students are located. Examples would include middle and high school classes, career and college fairs and days, graduate school fairs, and in the community and the workplace (Donnell, Edwards, & Green, 2002; Lee, 1991; Thomason & Thurber, 1999; Simon, 1993).

Recruiting from Non-traditional Sources

Minority students can also be recruited through minority, community, professional, and social groups or organizations, churches and other religious groups, minority fraternities and sororities, minority alumni, and minority mailing lists. It is also a sound strategy to encourage other minority students to assist with outreach at any recruitment event (Lowenstein, 1997; Stewart, Russell, & Wright, 1997; Talbert, Larke, & Jones, 1999), since minority students are more attracted to campuses where there is a visible minority cohort.

In seeking to attract minority students to a profession, paraprofessional pools are a viable, but often overlooked, source of minority students and professionals. Paraprofessionals have shown a level of interest and commitment to a career field that can often be extended to full professional status. Examples of this may be found in the nursing and teaching professions (Dower, McRee, Briggance, & O'Neil, 2001; Genzuk, 1997; Villegas & Clewell, 1998).

Transfer students from community, junior and technical colleges are also a valuable source of minority students since a significant number of ethnically and racially diverse students attend two-year colleges. Colleges, universities, professional associations, and corporations should encourage linkages and articulation agreements between two and four-year institutions to encourage promising community college students to pursue further study (Quimbita, 2001; Lowenstein, 1997).

Increasing the Visibility of College and Career Opportunities

Colleges, universities, and professional institutions must make their school or profession more visible through advertising in minority-oriented media and widespread dissemination of materials about the

profession (American Dietetic Association Diversity Committee, 2000). In an extensive review of recruitment and retention strategies geared toward Native Americans, Thomason and Thurber (1999) recommended that recruitment materials be written in the main language of the racial or ethnic group which one is interested in recruiting. Clearly, recruitment materials aimed at minority audiences must depict people of diverse race and ethnicity as both present and achieving success in both school and career.

Racial Climate

Minority students are attracted to schools with a racially diverse climate and an appreciation for their presence (Cabrera, Nora, & Terenzini, 1999). Therefore, colleges that desire to increase minority enrollment will need to honestly evaluate their campus climate to determine the extent to which their campus is culturally inclusive (Dumas-Hines, 2001). The presence of minority faculty at all levels of the institution and the presence of minority students on campus will act as an incentive for minority student to pursue their education in that environment (Smith, 1991). A campus that values diversity also provides a climate that encourages retention and graduation of minority students.

Early Intervention, Family and Community Programs

Effective recruitment efforts begin early by reaching out to students in middle and secondary school (Diversity Pipeline, 2002; Fenske, Geranios, & Keller, 1997; Opp, 2001; Thomason & Thurber, 1999; Simon, 1993). Early intervention programs to increase the number of students enrolling in college consist mainly of programs that work with elementary, middle and secondary school students to increase their access to higher education.

In order to increase minority enrollment in higher education and within professions, it is very important to support and strengthen the education of minority students at the K-12 levels (Haycock, 2001; Ntiri, 2001; Rudenstine, 2001; Simon, 1993). A number of higher education institutions, professional organizations, and public and private corporations and foundations have implemented early intervention programs designed to prepare minority students for college. Some of these programs focus on preparing students academically by providing tutoring, counseling, and mentoring. Others emphasize increasing students' awareness of the mechanics of preparing for and succeeding in college.

Many colleges and universities have partnered with schools, corporations, and career professionals to provide pre-college academic preparation and orientation programs. Students, especially those with parents and family members who did not attend college, often see themselves as having limited options. Early intervention programs provide students with information about college requirements and degree programs, and serve to widen their options. As one example, the Parents and Counselors Together (PACT) program of the National Association for College Admission Counseling (1996) provides a structure for preparing middle-school parents to assist their sons and daughters to pursue appropriate studies in high school and prepare to navigate the transition from school to college.

Higher education institutions and private and public corporations and institutions will enhance minority recruitment by implementing such early intervention programs as summer research and bridge programs, mentoring programs, cadet programs, and career clubs to arouse interest in a specific professional field at an early age. Colleges, schools, and businesses can work together to establish career education programs for elementary, middle, and high school students to enhance their knowledge

about career options, build their career self-efficacy, and provide accurate career information to dispel myths about careers (Dower, McRee, Briggance, & O'Neil, 2001; Greenwald & Davis, 2000).

Summer learning and research activities are effective vehicles for providing K-12 students with practical experiences in the field and serve to intensify students' interest in a career (Carruthers, 1995). This approach has been found to be particularly successful in the fields of nursing (Underwood & Fay, 1996), engineering (Aspray & Bernat, 2000), and journalism (Lowenstein, 1997).

It is also important that colleges, universities, and professional institutions involve families and communities in the recruitment process (Cabrera, Nora, & Terenzini, 1999; Stewart, Russell, & Wright, 1997; Thomason & Thurber, 1999). For many racial and ethnic groups, family and community support are extremely important to successful recruitment, transition into school, and retention.

Alternative Admission Criteria

Traditional admission tests that measure cognitive variables, such as the SAT and GRE, are often inadequate indicators of minority student performance in college or graduate school (Lee, 1991; Thomason & Thurber, 1999; Sampson & Boyer, 2001; Sedlacek, 1996). Researchers have suggested that non-cognitive variables appear to be more reliable measures of minority students' ability to succeed in college (Sedlacek, 1996). These non-cognitive variables are positive self-concept, realistic self-appraisal, ability to understand and deal with racism, long-range goal setting and planning, presence of a strong support person, successful leadership experience, demonstrated community service, and the ability to demonstrate experiential knowledge or the application of learning to real-life experience. All of these variables are things learned outside the formal academic setting, but may be seen at some point in the future, as more viable indicators of student success. (Sedlacek & Brooks, cited in Sedlacek, 1996; Tracey & Sedlacek, cited in Sedlacek, 1996).

Sedlacek and his associates developed the Noncognitive Questionnaire (NCQ), which has been found to be a valid predictor of retention for both traditional and non-traditional students regardless of their race or ethnicity and demonstrated ways in which this instrument can be applied in admissions and planning retention activities for minority students (Sedlacek, 1996).

Colleges and universities, at both the undergraduate and graduate levels, should examine their admissions criteria to determine if they accurately predict the performance of the minority students they are interested in recruiting (Aspray & Bernat, 2000). Other admissions criteria, such as personal interviews, letters of recommendation, and writing samples are suggested as better predictors of the academic success of ethnically and racially diverse students (Lee, 1991; Sampson & Boyer, 2001). Also, assessing students' research experience and research self-efficacy may be criteria to consider in recruiting minority graduate students (Donnell, Edwards, & Green, 2002).

Implement Programs to Reduce the Effects of Anti-Affirmative Action

Anti-affirmative action legislation in California, Texas, and Washington have negatively affected minority enrollment in colleges in those states (Camera, 2000; Ntiri, 2001, Wildavsky, 1999). The court-mandated and voter decisions in these states to eliminate race-based college admissions have had a spill-over effect into other states. Colleges and universities throughout the nation are making decisions to eliminate race as a consideration in admissions (Bennefield, 1999).

The result is that minority enrollment numbers in many colleges and universities have declined (Ready, 2001). Many colleges and universities have had to redouble their efforts to increase the number of minority admissions that plummeted rapidly as a result of anti-affirmative action legislation (Selingo, 1999). As a result, many institutions have created innovative admission strategies to increase the numbers of minority students they admit (*Black Issues In Higher Education*, 1999; Camera, 2000; Smith, 1999; Wildavsky, 1999). Some of these innovations include designing recruitment materials specifically for minority audiences, focusing admission recruitment efforts in schools and school districts with a high concentration of minority students and using enrolled minority students in outreach initiatives to their prospective counterparts.

Retention and Career Transition Issues and Strategies

Enrollment statistics show a high drop-out rate among minority college students, especially among first-year students (Hurd, 2000; Prime, 2001). Low retention and graduation rates among minority students are reported to be the result of academic unpreparedness (Lee, 1991; Priest & McPhee, 2000; Thomason & Thurber, 1999; Simon, 1993), financial difficulty (Lee, 1991; Thomason & Thurber, 1999; Stewart, Russell, & Wright, 1997), an absence of mentors and role models on campus (Smith, 1991; Taylor & Olswang, 1997), lack of adequate social and academic support (Lee, 1991), lack of diverse faculty and students (Dumas-Hines, 2001; Smith, 1991), an absence of culturally inclusive instruction (Taylor & Olswang, 1997), racially hostile campus climate (Cabrera, Nora, & Terenzini, 1999), and lack of professional networking opportunities.

Retention of minorities in professional practice is also a challenge. Low retention of minorities in professions such as law and journalism is reportedly due to lack of mentors and generally unsupportive work environments, including a lack of support from white colleagues and the absence of an appreciation for diversity (Chambliss, 2000).

Strategies that Enhance Retention

If higher education institutions and professions are to successfully attract and retain racially and ethnically diverse students and professionals, they must be able to meet the psychological, safety, sense of belonging, self-esteem, and self-actualization needs that these students and professionals bring with them to their campus and workplace (Donnell, Edwards, & Green, 2002). In seeking to decrease attrition of ethnically and racially diverse students, colleges and universities should implement comprehensive programs that address students' needs for academic and career advising and assist with making the social, intellectual, and geographic transitions to college (Dumas-Hines, 2001). Institutions with comprehensive retention services provide counseling, tutoring, academic support, career planning and placement services, as well as work to improve the social and racial climate on campus and the cultural competency skills of academic advisors and faculty members (Dumas-Hines, 2001).

Culturally Appropriate Academic Advising

Academic advising is integral to student retention (Priest & McPhee, 2000; Stewart, Russell, & Wright, 1997). Academic advisors and student services personnel who are committed to working with minority students and providing them with strong support will increase the likelihood of student persistence (Thomason & Thurber, 1999; Stewart, Russell, & Wright, 1997). Often racially and ethnically diverse students are afraid to seek assistance (Hurd, 2000). Academic and faculty advisors must be committed

to following up with these students by monitoring their progress.

Provision of Financial Aid

Financial aid has a significant impact on student attrition rates (Lee, 1991; Stewart, Russell, & Wright, 1997). Unfortunately, many minority students need to work full-time, and they often attempt to do so while carrying a full academic load. The ever-present financial burden and need to work leads many students to cut back to part-time status or interrupt their studies at some point in their educational experience.

Providing Strong Social Support and Integration

The college retention literature has long stressed the importance of a minority-friendly climate on campus to successful retention (Smith, 1991). The presence of diverse faculty reduces student alienation and isolation.

Successful retention strategies to improve the campus climate include workshops for students and faculty to encourage an appreciation for diversity and to create a racially welcoming campus climate (Dumas-Hines, 2001). Social and cultural activities and organizations, such as the Asian American Student Union, the Hispanic Student Alliance and the Black Caucus, allow students to become more involved in and expressive about their culture. This reduces minority students' experiences of social and cultural isolation and can have a positive effect on their personal persistence to succeed academically.

Provide Strong Academic Preparation and Support Programs

Higher education institutions need to focus on retention before minority students come to college (Hurd, 2000). Pre-college programs need to be implemented to enhance students' academic skills. Summer bridge programs and other academic outreach programs can facilitate the students' ability to make the required academic transitions once on campus.

Strong student-faculty relationships and the presence of minority collegial support increase student retention on campuses (Smith, 1991). Mentoring programs have been especially effective in increasing minority student retention and graduation (Aspray & Bernat, 2000; Holloway, 2002; Marable, 1999; Ralston, 2000; Talbert, Larke, & Walsh, 1999).

Recruitment, Retention, and Career Transition of Minority Students in Higher Education: Effective Programs and Practices

If the demographic projections presented earlier are accurate, minority enrollment and achievement in higher education are inexorably linked to this nation's continued economic productivity and growth (Carnevale & Fry, 2000; Diversity Pipeline Alliance, 2002; Ntiri, 2001). Recent experience has shown that government organizations, higher education institutions, professional associations, and private corporations are becoming more active in implementing practices to increase minority participation in higher education and increasing the number of skilled minority professionals in the labor force. Diversifying higher education and the workforce is no longer a philanthropic act, but a necessity in the United States.

Recruitment and retention cannot effectively take place separately from each other. Effective recruitment strategies should not take place without considering retention (Astone & Nunez-Wormack, 1991; Simon, 1993). Consensus on this is indicated by the numerous articles describing programs across diverse professions and higher education institutions that address both the recruitment and retention of minority students. Many of the programs described in this review share this twofold goal.

Numerous programs exist to recruit minority students into higher education. Among these are early intervention programs, such as summer bridge programs (Santa Rita & Bacote, 1997; Underwood & Fay 1996); education and mentorship programs initiated by professional associations and private or government organizations (Carruthers, 1995); dual or concurrent enrollment programs (Fenske, Geranios, & Keller, 1997; Hugo, 2001); pre-college programs to attract students to specific careers such as Precollege Initiative for Minorities in Engineering ([PRIME], Marable, 1999), school-college collaborative partnerships between community- or four-year colleges and local high schools (Chen, Konantz, & Rosenfield, 2000), as well as many other types of academic outreach programs (Fenske, Geranios, & Keller, 1997).

Fenske, Geranios, and Keller (1997) undertook a comprehensive review of early intervention programs. They provide numerous examples of private initiatives, government programs, school-college partnerships, and academic outreach programs run by higher education institutions. Early intervention programs are aimed at reducing high school attrition rates, increasing the enrollment of underrepresented students in post-secondary education, and facilitating the preparation and transition of high school students to college (Perna, 1995). Other terms for early intervention programs include early awareness, early eligibility programs, and academic outreach programs (Fenske, Geranios, and Keller, 1997). These programs typically include such components as financial assistance, mentoring, tutoring and academic support, counseling, and information about college and financial aid (Fenske, Geranios, and Keller, 1997).

The literature is lacking in references to specific programs that facilitate the career transition of minority college students. It does include, however, many programs aimed at providing internship, mentoring, and networking experiences to help students gain experience in a field and understand a profession from a practitioner's perspective.

Mostly designed to increase retention, these programs are aimed at helping minority students successfully complete college once they gain admission, but at the same time the mentoring, internship, and networking experiences facilitate the transition of students into careers. Students in such programs have a strong record of securing career placement upon graduation. Examples of some programs that ease career transition of minority students include INROADS (Clarke, 1995), Minorities in Agriculture, Natural Resources, and Related Sciences ([MANRRS], Conciatore, 2000; Talbert, Larke, & Jones, 1999), Mentoring Multicultural Students for the Food and Nutritional Sciences (MEMS) Program (Marable, 1999; Ralston, 2002), and the REFORMA (The National Association to Promote Library and Information Service to Latinos and the Spanish Speaking) Mentoring Program (Champlin, 2001).

In recent years, professional associations have spearheaded many attempts to recruit and retain minorities in higher education with the ultimate aim of diversifying their profession. Examples of associations involved in active recruitment and retention efforts include the American Association for the Advancement of Science (AAAS), the American Medical Association (AMA), the American Library

Association (ALA), the American Psychological Association (APA), the American Dietetic Association (ADA), the Association for Computing, and numerous others. Many minority professionals have also established minority associations with the purpose of diversifying their profession. Some of the program and initiatives of these professional bodies will be described in more detail subsequently.

Recruitment, Retention, and Career Transition of Minority Students in Specific Professions: Effective Programs and Practices

This section of the literature review will provide a synopsis of a number of programs and practices implemented by various professional associations, private and public organizations, two-year and four-year colleges, and universities to enhance minority student recruitment and retention in various professional fields. These programs have been created by various professions and professional groups in an attempt to address the diversity needs of a changing nation, a factor that is bringing increased minority participation to membership organizations.

Successful programs to increase minority participation in science, technology, engineering and mathematics, medicine and biomedical research, nursing, dietetics, psychology and counseling, agriculture and natural resources, teaching, librarianship, journalism and communications, business and management, and law are reviewed. Recommendations and results are highlighted from various efforts to evaluate and document their minority recruitment and retention endeavors.

Science, Technology, Engineering, and Mathematics (STEM)

The proportion of white males in the population is projected to decrease from 36% in 1995 to 26% in 2050 (George, Neale, Horne, & Malcolm, 2001; U.S. Census Bureau, 2000). The white male labor force which made up 70% of STEM professionals in 1997 is shrinking. The growing need for technically skilled labor is a major cause of national concern since the economic growth of this nation is connected to its technological productivity and capacity (Ntiri, 2001). Consequently, the engineering profession has turned its attention toward diversifying the STEM workforce to tap into underused sources of talent (George, Neale, Horne, & Malcolm, 2001; National Academy of Sciences [NAS], 2002) and to bring new and creative perspectives and ideas to the field (NAS, 2002).

Despite efforts to increase minority representation, minority professionals are still underrepresented in science-related fields (George, Neale, Horne, & Malcolm, 2001). Minorities make up approximately 6% of the STEM workforce and only 4.6% of minorities in the STEM workforce hold doctoral degrees (US Census Bureau, 2000). Despite significant increases in minority enrollment in engineering from 1994 to 1996, minority enrollment has been on a steady decline since it peaked in 1993. The American Council on Education Eighteenth Annual Status Report indicates that there were decreases in the bachelor and doctoral degrees in engineering awarded to all minority groups from 1998, except in the case of doctoral degrees to Hispanics which increased by 20 % (Harvey, 2000).

Reasons for low-enrollment of black students in engineering programs are the high cost of an engineering education, the students' low self-efficacy related to STEM courses, and poor pre-collegiate preparation in STEM courses (Taylor, 1996; Williams & Harold, 1997). Success in enrolling minority students into STEM college and university departments has been reported for pre-college programs to help students prepare for college (George, Neale, Horne, & Malcolm, 2001; Marable, 1999) and two-year college programs to facilitate the successful transition of transfer students to four-year colleges

(Quimbita, 1991) .

The Pre-collegiate Initiative for Minorities in Engineering (PRIME)

Summer bridge programs are reported to be particularly successful in minority retention in predominantly white institutions (Reichert & Absher, 1997) and prior to the freshman year for minority and low-income students (Santa Rita & Bacote, 1997) . The Pre-collegiate Initiative for Minorities in Engineering (PRIME) at Tennessee Technological University is a six-week summer bridge program to encourage African-American students to pursue a career in engineering and to help students transition from high school to college (Marable, 1999). Undergraduate engineering students are engaged as mentors and role models for the students in the summer bridge program. They also act as peer counselors and tutors during the six-week period. Students also receive seminars and tutorials in math and introductory engineering. Mentors work to build students' confidence and self-esteem and those completing the program receive a stipend. The mentoring and peer counseling has had a positive effect on participating students staying in the engineering field (Marable, 1999).

The Summer Undergraduate Program in Engineering Research at Berkley (SUPERB)

Science, Technology, Engineering, and Math (STEM) undergraduate research experiences and involvement in pre-college bridge programs to introduce them to research have also been found to increase minority student enrollment in STEM graduate programs (George, Neale, Horne, & Malcolm, 2001). The Summer Undergraduate Program in Engineering Research at Berkley (SUPERB) is designed by the University of California-Berkley to provide underrepresented students with eight weeks of research experience and mentoring from engineering and computer science faculty and graduate students. Over 50% of its participants since 1990 have entered graduate school (Aspray & Bernat, 2000).

Mathematics, Engineering and Science Achievement Project

The Mathematics, Engineering, and Science Achievement (MESA) initiative is one of the oldest programs in the nation to provide pre-college support for minority and educationally disadvantaged students in elementary, middle, and high schools (MacKay, 1995) through the MESA Schools Program. It also provides academic support to undergraduates through the MESA California Community College Program and the MESA Engineering Program. Operated by the University of California, MESA seeks to encourage minority students to enter math, science, and engineering fields. MESA provides K-16 students with academic advising, career exploration with STEM professionals, academic enrichment activities such as academic excellence workshops and academic contests, and weekly activities to build their academic success skills (Mackay, 1995). Parents, teachers, faculty members, and STEM industry professionals are actively involved in mentoring, leading workshops, fund-raising, and advising the students. In 1995, MESA California served 12,000 students (MacKay, 1995). Currently, MESA serves 30,000 students. MESA California has become the model for programs in other states. Together, the states involved in this initiative comprise MESA USA. Over 85% of MESA high school students enroll in higher education and over 85% of all new engineers in California, and 12% of new engineers in the nation participated in MESA's Engineering Program.

Computing

According to the Computing Research Association, for all degrees conferred in computer science and engineering in the 1998-1999 academic year, only four percent were bestowed on minority students (Aspray & Bernat, 2000). The Coalition to Diversify Computing, a joint initiative of the Association for Computing, Computing Research Association, and the Institute of Electrical and Electronic Engineers (IEEE) Computer Society, convened a workshop in March 2000 to examine the recruitment and retention of minority graduate students in computer science (Aspray & Bernat, 2000). The resulting report provides 25 recommendations as well as examples of successful programs for improving recruitment and retention of minority computing students into graduate programs.

Recruiting and retaining minority graduate students is a slow process, requiring long-term commitment and consistent effort and patience (Aspray & Bernat, 2000). Some of the practical suggestions to increase minority recruitment into graduate school include: providing undergraduate students with enhanced research experiences; discovering new ways to contact and recruit minority students; examining the skills that are realistically needed for success in graduate school and revising traditional admission requirements to allow more non-traditional students entry to graduate programs; and designing education programs to meet the needs of non-traditional students with multiple life roles.

Recommendations to enhance minority student retention were: creating support networks by building communities of minority students in graduate programs; rewarding diversity and promoting a sense of belonging in the department; providing non-threatening and standard ways to enhance the academic skills of students who need it; providing increased one-on-one advising to students; and encouraging the involvement of students in local and national professional associations.

This report stressed the importance and benefits of strong faculty-student mentoring relationships in retaining students in the graduate program. Mentoring has a significant impact on students in socializing them into the department and profession, providing them with valuable feedback and information, providing emotional and academic support and advising, and providing students with professional network contacts and opportunities (Aspray & Bernat, 2000).

Medicine

Project 3000 by 2000 and Health Professions Partnership Initiative (HPPI)

In the medical professions, school-college partnerships had been very successful in increasing minority recruitment in medical schools until recent anti-affirmative action policies began to take effect in these institutions. (Ready, 2001). In 1991, the Association of American Medical Colleges (AAMC) launched Project 3000 by 2000 with the goal of increasing annual minority student enrollment in medical schools to 3000. In 1998, 11% of all enrollees in medical schools were minority students and there was a 65% increase in the minority applicant pool between 1990 and 1995 (COGME, 1998; Ready, 2001). A major component of the program was partnerships between medical schools, high schools, and community based organizations.

The gains created by this and another initiatives have been depleted by anti-affirmative action policies which were initiated in the late 1990s (AMA, 1999). Nonetheless, Project 3000 by 2000 and related endeavors have not been seen as failures, as their gains pointed interested institutions and organization in the direction of successful minority recruitment practices for the medical profession.

Funded by the Robert Wood Johnson Foundation and W.K. Kellogg Foundation and administered by the AAMC in collaboration with the Association of Schools of Public Health (ASPH), the HPPI provides grants to educational partnerships between academic medical centers and colleges, high schools, especially those with large minority populations, and community groups. The aims of these partnerships are to facilitate the academic preparation of students and broaden students' awareness of the health professions as a possible career.

The Medical College of Georgia's HPPI project has a Saturday Learning Academy (SLA) for 9th to 12th graders who show academic promise and an interest in the health professions. SLA strengthens students' science, math, writing, algebra, critical thinking and problem-solving skills, and engages them in enrichment activities such as mentoring with faculty and health professionals and annual field trips. An undergraduate component identifies students with an interest in and academic potential for the health professions and provides mentoring and preparation workshops for medical admissions tests and other health school tests. Students also engage in research apprenticeships and academic enrichment programs.

Health Professionals for Diversity

A growing number of professional associations in their commitment to diversifying their professions have formed alliances and coalitions to educate their colleagues about the importance of diversity. The AAMC feels so strongly about the importance of diversity in the medical professions that they have established a coalition of over 50 medical, health, and education entities to advocate for the freedom to consider race, ethnicity and gender in recruiting students to the health professions. This national coalition, known as Health Professionals for Diversity, not only advocates for affirmative action but also educates health care providers and the nation about the importance of diversity in the medical workforce (Nickens, 1996).

Health Science and Biomedical Research Initiatives

In an attempt to promote diversity, professional associations, alliances, and coalitions are researching and publishing reports and convening workshops about the issues related to minority recruitment and retention in their particular field. The National Heart, Lung, and Blood Institute (NHLBI) in Bethesda, Maryland convened a workshop in mid 2001 to help participants identify innovative and culturally sensitive minority recruitment and retention strategies to increase the representation of minorities in scientific research (National Heart, Lung, and Blood Institute, 2001).

The minority student perspective added considerably to this workshop as three minority students in graduate and undergraduate medical and health science careers shared their experiences and the barriers they faced in their academic and career pursuits. Some of these barriers included lack of mentors or unsupportive mentors, low academic expectations for minorities, and a lack of collegial and community support and belonging. These students validated the importance of outreach programs in attracting minority students since all three of them were attracted to science research careers by this means. Marketing to minority groups must be culturally specific. This workshop underscored the importance of considering the culture of each minority group in designing programs to recruit and retain them.

Numerous recommendations came from three breakout groups, representing recruitment and retention issues relating to African American, Hispanic or Native American students. It was recommended that NHLBI develop educational and public relations outreach programs to educate minority groups about the benefits of science careers, connect with non-medical minority organizations, and advertise in publications marketed to minority groups. NHLBI was advised to develop outreach programs for K-12 to strengthen science education and develop workshops for science teachers and guidance counselors to promote science careers. It was also recommended that NHLBI develop programs to assist minority students in transitioning from tribal colleges and universities (TCUs) and minority serving institutions to four-year colleges and graduate schools. Once again, mentoring was stressed as the best practice in recruiting and retaining minority students. It was suggested that NHLBI develop a national program to train prospective mentors in effective mentoring, and to improve the mentoring environment for minority students and research scientists.

Nursing

The Health Careers Bridge Program at UWM

The University of Wisconsin-Milwaukee (UWM) School of Nursing implemented a comprehensive program to recruit and increase the college success of minority students interested in nursing or a health-related career. The Health Careers Bridge Program is a pre-collegiate program aimed at providing mentoring, instructional and practicum experiences, and exposure to health care professionals in the field during the summer prior to the participants' senior high school year (Underwood & Fay, 1996). The program also provides college preparation support throughout the senior high school year as well as continued support throughout college for all participants. Participants must have at least a B average in math and science and an interest in a health profession.

The program begins in the summer following the students' junior year of high school with a two-week orientation seminar composed of didactic training and computer and clinical laboratories related to health care topics and college success. Following the orientation, participants take part in a supervised clinical practicum at nearby hospitals which allows them to learn about the health care professions directly and to observe professionals in specialty areas such as the operating and emergency rooms. The final week of the program consists of an introduction to professional activities such as attending a national conference, or visiting congressmen. Throughout their senior year, students take part in a two-semester preparation seminar and in community service programs and activities with health care professionals. Upon completing the college preparation seminar, visits are arranged to colleges and universities both regionally and extra-regionally.

This UWM Bridge program has met with both recruitment and retention success. Students' interest in pursuing their career choice in the health care professions was heightened. Mentors and program faculty reported that students are exemplary and are committed to the program, and that there is a high rate of retention with many of the students graduating successfully (Underwood & Fay, 1996).

Initiatives to Expand the Nursing Pool

Paraprofessionals in the nursing profession, such as allied and auxiliary health care workers, are a viable source of future minority nurses since there is a much larger minority representation among these

workers (Dower, McRee, Briggance, & O'Neil, 2001). However, these allied and auxiliary health care workers face numerous barriers to entry to the nursing profession such as lack of mentoring, lack of financial incentive to pursue nursing, limited information about career options and nursing education, inflexible and incompatible work and class schedules, and lack of synchronization and coordination between nursing education and auxiliary and allied health care training programs.

The California Workforce Initiative, a project to promote the diversification of the nursing workforce in California, recently published its report *Diversifying the Nursing Workforce: A California Imperative* (Dower, McRee, Briggance, & O'Neil, 2001). This report documented research on the barriers faced by minority nursing students and auxiliary and allied professionals in the nursing profession. It also described five case studies of innovative and successful programs to increase the recruitment of minority nurses. Six strategies were recommended for removing the barriers to minorities entering the profession.

Three of the programs studied focused on helping allied and auxiliary nurses transition into nursing. These were Project Ladders in Nursing Careers (Project LINC), the Kaiser Permanente and Health Care Workers SEIU Local 250 Collaborative, and Health Care Integrated Education System. Two programs focused on helping elementary, middle, and high school students explore career options in nursing and other health professions. These were Learn About Unlimited New Careers in Healthcare (LAUNCH) and Health Occupations Students of America (Cal-HOSA).

Project L.I.N.C., started in New York in 1988, involved auxiliary and allied healthcare professionals in a work-study program. They worked part-time with full pay and benefits while becoming full-time students in a nurses training program. Both the Kaiser Permanente and Health Care Workers SEIU Local 250 collaborative and the Health Care Integrated System programs create career ladders or pathways for auxiliary and allied health care workers. In the Kaiser Permanente collaborative, auxiliary healthcare workers receive training to become allied healthcare workers who in turn receive training for more advanced nursing positions. Maricopa Community College District in Arizona developed the Health Care Integrated Education System, a competency-based curriculum which creates multiple entry, exit, and reentry levels to the nursing profession for students and allied health workers with various levels of education and work experience. Students may enter at Level I, which provides basic skills and competencies in health care; at Level II, which provides training in advanced skills and shared competencies for many health care professions; or at Level III, which is very specialized and advanced and providing students with the prerequisites to complete majors in their health care field of study.

K-12 students have inaccurate information and negative perceptions about nursing and other health care professions (Dower, McRee, Briggance, & O'Neil, 2001; Greenwald & Davis, 2000). Early intervention programs in the schools can help to dispel negative views of certain careers and present these careers as attractive options. Learn About Unlimited New Careers in Healthcare (L. A. U. N. C. H.), an initiative of California's Department of Education and Kaiser Permanente, provides information about health care careers using different strategies to capture students' attention, including rap lyrics. Cal-HOSA, a member branch of Health Occupations Students of America, works with elementary through high school students to redesign health education curricula and implement academic programs, develop counseling, and form community partnerships to prepare students for higher education in health careers. HOSA students are also eligible for academic scholarships. Preliminary evaluations indicate that HOSA students have higher standardized achievement test scores (Dower, McRee, Briggance, & O'Neil, 2001).

Dietetics

The American Dietetic Association recognizes the need for the increase of minority dietitians in the profession (American Dietetic Association Diversity Committee, 2000; Greenwald & Davis; 2000; Ralston, 2000). The association has a 9% minority membership (Ralston, 2000). Greenwald and Davis (2000) conducted surveys of 83 recently graduated minority registered dietitians and dietetic technician and 20 program directors of dietitian education programs to ascertain why minorities are underrepresented in the profession and identify contributing factors to success in the education programs. Reasons for the low minority enrollment in food and nutritional science programs and the low number of minority dietitians and dietetic technicians were: low salaries, lack of knowledge about the profession, difficult academic requirements, perceptions by men of the career as a woman's career, the absence of role models, underpreparation in sciences, difficulty with internships, and the cost of training

Dietitians and dietetic technicians stressed lack of visibility such as limited knowledge about the field as contributing to minority underrepresentation in the field, while program directors emphasized lack of adequate academic preparation and a lack of role models (American Dietetic Association Diversity Committee, 2000; Greenwald & Davis, 2000). The dietitians and dietetic technicians stated that factors that contributed to student success in the dietetics education program included the presence of good faculty and mentors, student perseverance and determination, and personal ability. Strategies suggested for increasing recruitment and retention of minorities in the field were visits to schools with large numbers of minority students and attendance at school career fairs, advertising in minority and male oriented media, providing mentors and role models for high school students, and establishing minority organizations. However, program directors perceived faculty and program commitment and encouragement as the most effective method of recruiting and maintaining students in addition to mentoring and tutoring (Greenwald & Davis, 2000).

The Mentoring Multicultural Students for the Food and Nutritional Sciences (MEMS) Program

Mentoring is consistently cited through the recruitment and retention literature as one of the most effective strategies for increasing the recruitment and retention of minority students in higher education as well as having significant positive outcomes for graduation and career placement of minority students (Holloway, 2002; Marable, 1999; Ralston, 2000). The Mentoring Multicultural Students for the Food and Nutritional Sciences (MEMS) Program started initially as a cooperative venture between Florida State University (FSU) and Florida Agricultural and Mechanical University (FAMU) in 1993. It continues to concentrate on successfully graduating and placing minority students in the field (Ralston, 2000). Minority students are recruited into the food and nutrition sciences at FSU and FAMU through transfer students from other academic programs at these schools and distribution of materials at career fairs.

MEMS provides graduate education information, access to faculty and administrators, career counseling, and professional networking to increase student commitment and success. The strong student support provided by these services acts as a "buffer to counter perceived prejudice and discrimination" (Ralston, 2000). Faculty, students, and community practitioners make up an advisory committee who run the program. Students receive social support through mentoring and academic monitoring from the dean of the college, a graduate assistant, and faculty members. Students are also recognized at a Fall Social and Spring Recognition Banquet each year where presentations are made to graduating seniors and scholarship recipients. The professional development component consists of a one-credit seminar for

juniors which exposes them to minority role models and research experiences through speakers, field trips and observations, as well as other experiences to enhance their research skills. In order to provide interaction with a professional, students are required to shadow a professional in the food and nutrition science field. Another component is the mentee-internship program which requires students to work on research project with a faculty member. Students who successfully complete the project receive an award of \$5,000.

Prior to graduation, students receive intensive career advising and career placement in the field or in graduate or professional schools. A total of 34 FSU students completed the MEMS program from 1993 to 1999. Most of these students graduated from FSU and FAMU successfully. Twelve students were successfully placed in graduate or professional schools and 17 were placed in the field. From 1993 to 1999, minority enrollment at FSU in the nutrition and fitness area has grown by 300% from 23 students in 1994 to 79 in 1998 and for students completing the MEMS program, the graduation rate is 91% compared to FSU's overall graduation rate of 65% (Ralston, 2000).

Psychology and Counseling

In 1994, persons from racial/ethnic minority groups comprised only 5% of the membership of the American Psychological Association (APA) (Munoz-Dunbar & Stanton, 1999). Statistics, however, reflect that approximately 12% of clinical psychology doctorates are awarded to minority students (Hammond & Yung, 1993; Munoz-Dunbar & Stanton, 1999). There is a need for the provision of more culturally sensitive mental health services to minority clients. The lack of minority psychologists presents a problem for the profession since research indicates that minority clients are more likely to drop out of therapy after the first visit due to cultural incompetence or insensitivity of the therapist (Hammond & Yung, 1993).

APA's Minority Fellowship Program

Programs that provide financial assistance to minority students meet with substantial success in increasing minority recruitment and retention in higher education (Lowenstein, 1997; Thomason & Thurber, 1999). APA created five doctoral fellowship programs to support the training of researchers and practitioners in the areas of mental health and substance abuse treatment, mental health research, HIV/AIDS research, and in neuroscience. These fellowships are funded by the Substance Abuse and Mental Health Services Administration and the National Institute of Mental Health (NIMH).

Model Strategies Implemented by Psychology Education Departments

Recently APA's Office of Ethnic Minority Affairs (OEMA) compiled a document of Model Strategies for Ethnic Minority Recruitment, Retention, and Training in Higher Education (APA, 2000). This document highlighted 13 model strategies being used by psychology programs to recruit, retain, and graduate successful minority psychology students. Mentoring, skill enhancement, and collegial support are common themes throughout the programs.

Program to Increase Minorities in Biomedical Research in Psychology

Partnerships between professional associations and federal or private organizations and/or higher

education institutions can have a significant impact on diversifying a profession. APA's Office of Ethnic Minority Affairs (OEMA) was successful in its proposal to the National Institute of General Medical Sciences (NIGMS) to develop minority biomedical research talent in psychology (APA, 2001). In 1996, OEMA won a three-year grant for \$750,000 from NIGMS to "demonstrate the effectiveness of a 'systemic approach' for increasing the number of persons in the educational pipeline for biomedical research careers in psychology" (p.1). APA received supplemental grants at the end of the grant period.

The APA/NIGMS Project's objectives were to increase the number of minority students in biomedical research, develop five regional centers of excellence including a research I university, four-year colleges and at least one community college serving mainly minority students, develop strong partnerships among these centers of excellence, disseminate lessons learned from the project to psychology departments and professional associations and bodies nationwide, and evaluate and document this system of collaboration in recruitment and retention of minority students in biomedical research (APA, 2001). The participating schools are divided into five regional centers. Each center is responsible for establishing programs to increase minority student recruitment and retention (Sleek, 1999).

This project has resulted in some innovative programs nationwide, for example, summer research programs for minority undergraduate students, a new course in biopsychology, and a range of programs targeting students from middle school to college and university level (APA, 2001; Sleek, 1999). A number of these programs were highlighted in the APA/NIGMS Project newsletter Pipeline (APA, 2001). Many of the institutions in the regional centers successfully launched programs to strengthen students' research skills, forged partnerships between departments and increased inter-institutional collaboration, improved biomedical curricula, provided academic support services and established collaborative initiatives with the surrounding community and schools.

In the Southern region consisting of Florida International University, Miami Dade Community College, and University of Miami, the participating schools established a mentoring program to help students conduct and present research. The program, Psychology Research Initiatives Mentorship Experience (PRIME), involved 14 students and 29 faculty from the regional center in a 10-week research mentorship experience and a one-credit course. As a result of its success, the provost and dean of the College of Arts and Sciences received a \$60,000 grant to involve undergraduate students in research projects (APA 2001). Seven of the University of Miami's PRIME participants from 1998 to 1999 are now in graduate school and seniors in the program had a 100% graduation rate.

In the Eastern region, comprising University of Maryland at College Park (UMCP), Morgan State University, and Prince George's Community College (PGCC), Enhancing Research Training Opportunities for Ethnic Minority Students in Psychology (ETEP) is a partnership program to engage undergraduate minority students in a one-year project related to biomedical research. Consequently, two of the ETEP 1999-2000 participants are now transfer students from PGCC pursuing graduate studies in psychology at UMCP (APA, 2001).

Agriculture and Natural Resources

Although the field of agriculture is now a high tech science with such specialties as biosystems engineering, plant pathology, and animal science, the problem of recruiting minority students centers around stigma and legacy (Talbert, Larke, & Jones, 1999), as well as students' lack of information

(Morgan, 2000). From the time of slavery and throughout this century, the majority of manual labor on farms has been provided by minority farm workers (Talbert, Larke, & Jones, 1999). Therefore, agriculture carries a negative image among minority students who perceive it as a labor-intensive, low-paying, low-status job. Minority enrollment is even lower in this profession than in other professional disciplines. A meager 4,209 African-American students were pursuing agricultural-related studies in 1999 (Morgan, 2000).

Minorities in Agriculture, Natural Resources, and Related Sciences (MANRRS)

Student organizations play an important role in increasing minority access to professional fields and careers and in allowing students to share their college experiences, socially integrate into the campus and academic environment, and network with professionals in the field (Talbert, Larke, & Walsh, 1999). Therefore, they can have a significant impact on recruitment and retention of minority students as well as on the career placement and transitioning of students into the profession. Minorities in Agriculture, Natural Resources, and Related Sciences (MANRRS), a student organization, was formed in 1986 by faculty and students of Pennsylvania and Michigan State Universities to form student-professional partnerships so that students would have better access to government, business, and academic professions through networking with and mentoring from professionals in the field (Conciatore, 2000).

Mentoring is a major component of the program. MANRRS has been successful in providing the opportunity for students to network with and be mentored by professionals in over 50 government, private, and academic organizations. MANRRS has become a major source of employees for recruiters in these organizations. Students are also placed in paid internships and mentoring relationships in these organizations. These professional networks have made it an easier transition into agriculture related careers for MANRRS student members.

Student members are valuable in recruiting future minority students to agricultural professions at college fairs and at high school recruitment visits (Talbert, Larke, & Walsh, 1999). The MANRRS national conference also promotes minority student recruitment by showcasing careers in the agricultural field. In addition, the national conference activities provide opportunities for students to showcase their potential by making oral research presentations, taking part in discussions, public speaking contests, essay competitions, and research poster sessions. They are also able to network with professionals and develop professionally (Talbert, Larke, & Walsh, 1999).

Teaching

Only 12% -14% of teachers are minorities while over a third of the students in American classrooms are minorities (Duarte, 2000; Gursky, 2002). As the student population in public schools becomes more and more diverse, the teacher workforce continues to be predominantly white (Stokes, 1999). This is one of the major reasons for the drive to recruit minority teachers. However, this effort has been made more difficult by the fact that successful minority high school and college students and the wider public, often regard teaching as a low paying, low prestige job (Rasmussen, 1999), and many minority students drop out of school early (Duarte, 2000), or never make it into college because of academic tracking, substandard teaching, and poor academic preparation (Villegas & Clewell, 1998).

Numerous types of programs have been instituted to recruit and retain minority teachers and teachers in

general. Among these are alternative teacher certification programs, recruitment from among teacher paraprofessionals, teacher cadet programs for middle and high school students, programs to identify potential teachers as early as middle and high school, teacher mentoring programs, loan forgiveness programs for teachers who remain in the district, state and federal financial incentives such as bonuses for entering the field, and recruitment of teachers from those withdrawing from the Peace Corps, U.S. army, and other mid-career professionals (Duarte, 2000; Genzuk, 1997; Gursky, 2002; Holloway, 2002; Rasmussen, 1999; Villegas & Clewell, 1998).

Minority Teacher Identification and Enrichment Program (MTIEP)

One of the main concerns in developing teacher recruitment programs is that if the minority teacher recruitment pool is to be expanded in any significant way, strategies must be found for arousing interest in teaching as early as middle school (Villegas & Clewell, 1998). This is the focus of Minority Teacher Education Association (MTEA), started in 1994 at Eastern Illinois University, to provide academic and social support services to minority students in education. Out of MTEA, emerged the Minority Teacher Identification and Enrichment Program (MTIEP), a program aimed at increasing the number of minority teachers throughout Illinois (Banks, Butt, & Lyles, 1997).

MTIEP resulted in a local network of MTEA chapters in which teaching professionals at all levels work to identify potential teachers among middle and high school students and community college students. The students are recruited in to the MTEA chapter in their region where they are mentored by education professionals, take part in educational intervention programs to improve their academic skills, learn about the teaching profession as a career, and receive educational support from MTEA members who are students, teachers, and community members. MTEA members also volunteer in K-12 schools as mentors, tutors, and student teachers. The students identified as prospective teachers also take part in summer school at Eastern Illinois University to improve their academic achievement and study skills and are involved in an intense mentoring experience with students currently enrolled in the teacher education degree program, professional teachers, advisors, counselors and MTEA members at the university serving as their mentors (Banks, Butt, & Lyles, 1997).

Librarianship

Approximately 90% of all professional librarians are white, and the same percentage of students graduating each year from library and information science (LIS) graduate programs are white. Between 1991 and 1998, the number of white students graduating each year from ALA-accredited master's programs ranged from 88% to 92% (Lippincott, 1997; McCook & Lippincott, 1997). In 1994 and 1995, new LIS graduates consisted of 4.21% African American, 3.37% Asian American, 2.12% Latino/Hispanic and .16% Native American. Since 1988, there has been a thrust in the LIS profession to increase minority recruitment (McCook, 2000). Minority librarians can be role models for children in urban areas, can better understand the needs of minority clients, and can help them feel more comfortable in the library environment (Glick, 1997).

The Spectrum Initiative

Many studies emphasize the significance of financial aid in the form of grants and scholarships to minority students (Aspray & Bernat, 2000; Lee, 1991; Simon, 1993). Financial difficulty is one of the

major barriers to minority student recruitment and retention (Thomason & Thurber, 1999). The American Library Association (ALA) has recognized the importance of committing financial resources as a means to increasing the number of minority librarians (Glick, 1997). In an attempt to diversify the workforce in library and information science (LIS) professions, ALA launched the Spectrum Initiative in 1997 to provide scholarships of \$5,000 to 50 minority students each year (Glick, 1997). ALA's leaders described it as "putting your money where your mouth is" (Glick, p. 13). Since 1998, the Spectrum Initiative also provides funding for a diversity officer within ALA.

From 1998 to 2002, 250 minority students have received scholarships to pursue LIS graduate study. Scholarship recipients take part in an annual leadership development seminar with library leaders and minority librarians, receive mentoring support, and become part of a national recruitment network established by the initiative (McCook, 2000). The campaign launched to provide scholarships has resulted in increased visibility and greater viability of librarian as a career choice for minority students.

Mentoring and Scholarship Program for Spanish Speaking Students

The National Association to Promote Library Services to the Spanish Speaking (REFORMA) has established a scholarship program to encourage the recruitment of Spanish speaking students in LIS careers. Each year, successful recipients receive a minimum of \$2,000 to assist with their graduate studies in an accredited ALA program.

In 2000, REFORMA/ALA established the Spectrum Latino Mentoring Program to support Latino Spectrum scholarship recipients in their graduate studies and job searches (Champlin, 2001). Students and mentors are matched carefully according to their professional goals, interests, and location. Reports from the first year indicated that mentees felt that the mentoring relationship was beneficial to them. Mentees reported that they were empowered and motivated by the sharing of experiences and advice of their mentors; their mentors helped them make significant contacts with professional librarians in the field; they were assisted by their mentors in making wise academic decisions; and they were inspired by meeting other Latinos in the field (Champlin, 2000). In the second year, the program expanded to include both Spectrum and REFORMA scholarship recipients, as well as librarians working with the Latino/Hispanic population.

Journalism and Communications

In 1996, 11.3% of newsroom staff were minorities (Lowenstein, 1997) and from 2000 to 2001, the percentage of minority journalists fell from 11.85% to 11.64% (Roach, 2001). In spite of efforts to increase newsroom diversity by the American Society of Newspaper Editors (ASNE), the number of minority journalists in the field is declining. Minority journalists are leaving the profession far more quickly than white journalists (Roach, 2001). The John S. and James L. Knight Foundation funded programs at six universities from 1986 to 1996: Florida Agricultural and Mechanical University (FAMU), University of Florida, University of Missouri, University of North Dakota (UND), San Francisco State University (SFSU), and Wayne State University. The diversity programs continue at all of these schools. Follow-up grants were given to FAMU, UND, and SFSU. The purposes of the initial and follow-up grants are to attract minority students to journalism and facilitate their academic success and professional development.

Six Experimental Programs to Diversify Journalism

A study of the initial six experimental programs revealed that a commitment of resources by the universities and the journalism profession, as well as collaboration with local and regional communities, were essential to the success of the recruitment, retention, and career placement programs at these schools (Lowenstein, 1997). In addition, strong and consistent recruitment and retention strategies, a placement program for students, and ongoing networking of students with alumni were found to be important in efforts to diversify journalism in these six experimental programs.

Lowenstein (1997) summarized the lessons learned and provided useful suggestions about the most common successful recruitment and retention strategies employed by the six schools of journalism. The most successful recruiting strategy was meeting high school students on an individual basis in their schools' journalism classes, career fairs and days, and outreach meetings followed by personal letters to each student. Involving on-campus minority student organizations in outreach to high school students was a particularly effective tool since the enthusiasm of minority journalism students was found to be contagious.

Other successful recruiting strategies included providing substantial scholarships, obtaining profile lists of successful minority high school students from services such as Student Search Service and Educational Opportunities Service, and mailing out newsletters describing the program with a reply card inserted for student inquiry about the program. Program directors follow up immediately on student inquiries. Involving high school students in a summer journalism program on campus provides them with an introduction to campus life and the journalism profession. Involving parents and potential high school and community college students in campus visits, as well as efforts to recruit students entering their sophomore or junior year and as yet undecided about a major, were also recommended as effective recruiting strategies. Community college students who were completing their program, especially those interested in communications, were also a viable recruitment source..

As reported by Lowenstein (1997), some of the most successful retention strategies implemented by the six journalism diversity programs included an open-door policy that allowed students easy access to the minority program office director and staff, early and consistent monitoring of student progress, and the provision of emergency aid to assist students with financial emergencies. Providing a support network of peers and role models was critical to the successful retention of minority students. Students benefitted from joining minority professional organizations as a result of frequent contact with professionals in the field, from whom they can receive mentoring and academic advice. In addition to being encouraged to join professional organizations, students also received funds to attend job fairs and professional conferences since this increases minority students' awareness of their job options, allows them to network with professionals, and helps to enhance their professional development. Meaningful internships were integral to minority student retention since they help students to gain valuable experience in the journalism field thereby providing easier entry into the profession upon graduation. This exposure to the profession also helped them in their course work. Internships also provide a source of sorely needed income for minority students. Additionally, the availability of good internships attracted minority students to the field.

Business and Management

Responding to changing demographics in the US, organizations such as the Graduate Management Admission Council, Management Leadership for Tomorrow (MLT) and The Consortium for Graduate Study in Management are working to increase minority student enrollment in undergraduate and graduate management education programs.

The Diversity Pipeline Alliance

The Graduate Management Admission Council's diversity initiatives have tended to focus on information dissemination about management education to minority students in high school and at the undergraduate and graduate levels (Graduate Management Admission Council [GMAC], 2002). However, these initiatives have not led to the increase in minority students entering as business majors or taking the Graduate Management Admission Test. In February, 2001, in a new drive to boost the number of minorities entering the management and business professions, GMAC and a number of leading business corporations, non-profit organizations, and business schools launched the Diversity Pipeline Alliance.

The Alliance is a collaborative initiative among these organizations who share the mission of increasing the entry of African American, Hispanic American, and Native American students to business and management professions. The founding organizations of the Diversity Pipeline Alliance are GMAC and its member schools; The Consortium for Graduate Study in Management; Leadership, Education, and Development in Business (LEAD); Management Leadership for Tomorrow (MLT); National Black MBA Association; National Society of Hispanic MBAs; The PhD Project; Sponsors for Educational Opportunity (SEO); Citigroup Foundation; KPMG Foundation; and Robert A. Toigo Foundation.

The Alliance aims to use the combined strengths of member organizations to increase the pool of minority applicants to their organizations and business schools and to facilitate the academic preparedness and success of business students. The Alliance will develop a shared database of prospective business students available to all of its members, launch a national outreach campaign to promote business as a career, provide information about graduate management education, and develop a Web site to provide information about business careers (GMAC, 2002).

Recently the Alliance produced *The Pipeline Report: The Status of Minority Participation in Business Education* (Diversity Pipeline, 2002). The report stressed the importance of reaching students at all entry points: middle school and high school students who are making career choices, college students at all levels who have not solidified a major, and professionals who may be interested in pursuing further studies in business and management. The Diversity Alliance will reach these students through education outreach and marketing programs. They will also share databases, resources, and innovative practices beyond members of the Alliance.

Management Leadership for Tomorrow (MLT)

Another program that focuses on channeling minorities toward the master's degree in business administration (MBA) is Management Leadership for Tomorrow (MLT) (Yates, 2001). MLT is a non-profit organization that pairs minority undergraduates interested in management as a career, with mentors who are business executives. Often, minority students lack information about graduate management education (Yates, 2001). Mentors give them advice about the MBA process including preparing for the

GMAT and application procedures for graduate school, and assist them with career planning. Mentors keep in close contact with their mentees in person, by telephone and electronic mail. MLT coordinates seminars in career planning with the assistance of business corporations and other organizations. MLT conducts outreach at colleges to help undergraduates understand the skills they need to pursue a business career. Most of MLT's funding comes from partner corporations such as Deutsche Bank in New York and foundations such as Robert Toigo Foundation. Student participants are enthusiastic about the push toward success that MLT's mentoring program has given them (Yates, 2001).

INROADS

INROADS is a career development organization that partners with organizations to diversify their workforce by providing minority students with internships in positions designed to prepare them for leadership in management (Clarke, 1995). INROADS provides both pre-college and college interventions to students. They assist high school students in preparing for college and provide college students with internships in sponsoring corporations for periods of two to four years. The ultimate goal is for the sponsoring organization to hire the intern upon graduation. INROADS interns take part in training workshops, community service, and summer and year-round internship placements (Clarke, 1995). Students who graduate "corporate ready" (p. 26) have greater chances of being hired immediately after graduation. By providing minority students with corporate and professional experience, INROADS provides them with better access to the corporate world. INROADS has approximately 6,000 students and 43 affiliate programs nationwide (Clarke, 1995).

Law

A report commissioned by the American Bar Association (ABA) reports that there is a marginal presence of minorities in the law profession, with the percentage being significantly lower than in other professions, including medicine, business, engineering and psychology (Chambliss, 2000). To address this deficiency, the Law School Admission Council (LSAC), made up of the institutions that offer legal education in the United States, offers a number of services to minority students interested in careers in the law. Among these services are a series of Law School Forums for Minority Students, Law School Admission Test (LSAT) preparation assistance and a student newsletter, *Minorities Interested in Legal Education (MILE) Markers*. In addition, LSAC manages an extensive network of prelaw advisors, educators at undergraduate institutions around the nation who have been trained and supported by the organization to provide information, assistance and one-on-one guidance to minority students seeking to learn about legal education and law careers (LSAC, 2002).

Summary

This review of the literature on the recruitment, retention, and career transition of individuals into the myriad careers performed by college, graduate school, and professional graduates of the American higher education system has revealed an array of programs and services that have resulted in an improved participation of racial and ethnic minorities in these professions. The same examination of the literature points to the ever present need to plan, design, and deliver new and innovative programs that will continue and expand upon what these successful activities have initiated.

The majority of professional articles, position papers, reports and other documents included in this literature review have cited a commitment to diversity as the foundation upon which most successful

programs have been constructed. Further, they have referenced the need to provide accessible and navigable educational routes to the career fields where racial/ethnic minorities are presently under-represented. Educators and administrators are urged to review this information to learn from these positive experiences, and incorporate these concepts, structures, and formulas for success into their future recruitment, retention and career transition practices.

*This page was updated on: **10/24/2003**.*

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