Methods to Increase Underrepresented Minority Student Enrollment and Retention at the University of Louisville School of Dentistry

Jennifer B. McCants, D.D.S., M.S.D.

Abstract: The 2000 U.S. census reported that the population is 12.3 percent African American and 12.5 percent Hispanic; however, less than 4 percent of dentists are African American and 2 percent are Hispanic. To address this disparity, increasing the diversity of dental students is mandatory. The purpose of this article is to describe how the University of Louisville School of Dentistry (ULSD) has approached enrolling and retaining underrepresented minority students. ULSD has increased its pool of underrepresented minority applicants through three major methods: partnerships and collaborations, mentoring, and restructuring administration. Data from ULSD’s admissions, institutional research, and planning along with annual enrollment surveys from the American Dental Education Association were used to determine the percentage of African American and Hispanic students entering (1993–2006) and graduating (1997–2010). From 1993 to 2010, African American enrollment increased from 3 to 9.6 percent of the entering class, and the graduation rate of African American students increased from 1.7 to 8.5 percent. Hispanic student enrollment also increased (1.6 percent in 1993 to 2.4 percent in 2006), but Hispanic student graduation rates decreased (3.5 percent in 1996 to 0 percent in 2010).

Dr. McCants is Assistant Professor of General Dentistry and Oral Medicine, School of Dentistry, University of Louisville. Direct correspondence to her at School of Dentistry, University of Louisville, 501 Preston Street, Room 029, Louisville, KY 40202; 502-852-1233 phone; 502-852-1220 fax; Jbmcca02@louisville.edu.

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In 2004, the Institute of Medicine (IOM) reported compelling data about the unequal treatment members of underrepresented minority groups face in the U.S. health care system.1 Cultural differences, lack of access to health care, and high rates of poverty and unemployment contribute to the substantial disparities found in the health status and health outcomes of these populations.2,3 Current demographic estimates project that, by 2050, 48 percent of the U.S. population will be comprised of minority groups.4 In 2000, the U.S. surgeon general reported the profound disparities in oral health among various ethnic and racial groups and that the burden of oral disease and conditions is disproportionately distributed in the U.S. population. Underserved individuals and families experience more dental decay and are more likely to have untreated teeth; specifically, the report noted that African Americans and Hispanics have a higher proportion of untreated dental disease than their white counterparts.2

One of the means to reduce the access problems among these groups is to have a workforce that reflects the diversity in the society.1,5 Research has found that minority health professionals are more likely to serve minority and medically underserved populations.6,7 The American Dental Education Association (ADEA) survey of dental students graduating in 2008 found that 68.7 percent of African American students planned to practice in locations where the majority of their patients will be from inner-city or underserved populations as opposed to 20 percent of white students who reported planning to do so.6 An American Dental Association (ADA) survey of the practice characteristics of U.S. dentists found that African American patients are the only racial group seen primarily by African American dentists.8 Despite this need, there is severe underrepresentation of African American and Hispanic students in dentistry.9

As educational institutions, dental schools and allied and advanced dental education programs influence the number and the type of oral health care providers.7 Unfortunately, the current number of underrepresented minority dentists and oral health professionals is far below the desired level. In spite of efforts to recruit and retain underrepresented minorities in dental schools, ADEA has reported that half
of the fifty-seven U.S. dental schools have less than 1 percent or no African American enrollees while 40 percent have one or no Hispanic enrollees.\textsuperscript{10} The need to attract and retain underrepresented minority students continues to be a challenge. The Institute of Medicine report \textit{Dental Education at the Crossroads} urged dental schools to initiate or participate in efforts to expand recruitment of underrepresented minority faculty and students,\textsuperscript{11} while the Sullivan Commission report in 2004 argued that, to increase diversity in the health professions, the culture of health professions schools must change.\textsuperscript{5}

Creating a diverse student body requires an active commitment by the school’s administration to strategies for underrepresented minority student recruitment and retention. Schools must view their lack of diversity as a serious problem and recognize that successfully solving that problem will require an investment of time and resources.\textsuperscript{12,13} The University of Louisville School of Dentistry (ULSD) is committed to increasing the number of minority students in its student body, particularly African American and Hispanic students. Although ULSD is humbled by the challenges it continues to face, over the past fourteen years the school has succeeded in increasing the enrollment and graduation rates of African American and Hispanic students. This article will describe the various programs and initiatives implemented.

\section*{Partnerships and Collaborations}

In 1996, the University of Louisville was one of eleven U.S. dental schools that received funding from the Robert Wood Johnson and W.K. Kellogg Foundations to support academic partnerships to improve preparation of underrepresented minority (URM) students seeking careers in the health professions. As part of that program, the university began offering an undergraduate biology course (Preview to Dentistry) at the dental school each spring to introduce undergraduates to the field of dentistry. The work in this course is both didactic and clinical and is presented by faculty members in various dental specialties. While enrollment is open to any interested student, the majority of those who enroll have participated in other ULSD programs designed to increase URM enrollment. Some undergraduates who have taken this course have applied to ULSD. Although the evidence is only anecdotal to this point, there are usually two or three students in the freshman class who have taken the Preview to Dentistry course.

Similarly in 2006, ULSD was included in Phase I of the Robert Wood Johnson Foundation-funded Pipeline, Profession, and Practice: Community-Based Dental Education program designed to increase the number of URM and low-income students in the school. This program facilitated the use of focused approaches in outreach, recruitment, and retention initiatives. The major initiative undertaken as a result of the grant funding is a summer enrichment program. This Summer Medical and Dental Education Program (SMDEP) is an example of collaboration on outreach and recruiting between the university’s dental and medical schools. The SMDEP is a six-week academic enrichment program for first- and second-year college students from low-income or disadvantaged backgrounds. The program offers daily opportunities for rural, minority, and disadvantaged undergraduates to experience the manner in which math and science are integrated into medical and dental studies and careers. This six-week summer residential program offers potential predental and premedical students the opportunity to be a part of an academic learning community at the center of a diverse biomedical research and health care complex. The program curriculum also provides students with opportunities to experience dentistry and medicine through shadowing dentists and physicians and being mentored by them. The SMDEP has introduced dentistry and medicine to populations of students who may not have thought such a career was possible. These prospective dental students may be more likely to return to the communities in which they reside, ultimately helping to reduce health care disparities in underserved and rural areas. This program offers participants three hours of academic credit, along with free housing, meals, stipend, and partial travel reimbursement. Interested participants may also elect to register for our summer program that prepares students to take the Medical College Admission Test (MCAT) and the Dental Admission Test (DAT).

This MCAT/DAT workshop offers students, after completion of two years of college, an opportunity to participate in a summer residential program focused on the MCAT or DAT. Students take part in small-group, interactive sessions focusing on MCAT or DAT preparation. Weekly supervised practice test sessions are conducted. In addition, a library of preparation materials is available from the Office for Minority and Rural Affairs. Special instructions in essay writing, application preparation, and interview...
techniques are also provided. Tours, demonstrations, and lectures are arranged at the medical and dental schools. Participants are also assisted with volunteer and research opportunities. Several ULSD faculty members are active leaders in these programs by lecturing and leading clinical activities.

Another form of collaboration between the dental and medical schools at the University of Louisville is the Multicultural Association of Premedical Students (MAPS). MAPS is an academic support group that originally was designed to motivate, encourage, and prepare premedical students (undergraduate, postbaccalaureate, or graduate students) for applying to medical school but has grown to include preclinical students as well. Students from minority groups or underserved areas are provided mentors, shadowing opportunities, community service involvement, resource materials, and academic guidance to help them become more competitive applicants. The ultimate goal of MAPS is to increase the number of competitive medical and dental school applicants and to diversify medical and dental school enrollment and the health professions workforce. Members of the university’s student chapters of the National Medical Association and the National Dental Association provide mentoring and support for MAPS participants.

In addition, the university’s Professional Education Preparation Program (PEPP) Pre-College Summer Workshop is a residential academic enrichment and career exploration program for graduating high school seniors interested in dentistry or medicine. Applicants must be Kentucky residents, and preference is given to students from designated underserved areas and from ethnic or racial groups underrepresented in dentistry or medicine. Students are exposed to the health sciences and undergraduate campus community. This program offers academic enrichment in first-year college math and science courses, personal and professional development seminars, clinical observations with dentists and physicians, hands-on clinical experiences, and a preview of college life. Participants acquire the tools necessary to transition from high school to college and to confirm their commitment to pursue dentistry or medicine.

Focus groups consisting of URM undergraduate and dental students have reported that early and frequent exposure to dentistry and dentists is essential in influencing these students’ decisions to pursue oral health careers. To start building such relationships early in students’ precollegiate education, the ULSD has for over twenty years collaborated with Central High School Magnet Career Academy in a program that allows high school students to receive firsthand knowledge and experience in the dental field. This academy in the heart of metropolitan Louisville in the Jefferson County Public School District has a curriculum in ten specialized programs in four areas of concentration: business, law and government, technology, and allied health; the school also offers certification in five medical programs. Central High has a predental counselor who facilitates placement of its students into the program at ULSD.

The Central High program’s components are divided among the four years of high school, beginning with the Dental Science Magnet, which provides an overview of the dental team members’ roles and duties and how they are related. An overview of current job opportunities in dental science helps students to evaluate their interests, capabilities, and educational training needed to pursue these careers. Since there is an overwhelming shortage of qualified practitioners in the Louisville Metropolitan area, career opportunities are readily available. Central High students must maintain a minimum 2.5 GPA to be considered for matriculation into the predental program. An internship component available for students who have done exceptionally well in the high school curriculum and predental program allows them to work in a dental office and receive credit towards graduation.

It has been documented that undergraduate colleges and universities, particularly historically black colleges and universities (HBCU) serving as feeder institutions or at least points of reference for URM students, are significant sources for increasing the pool of qualified dental school applicants. Predental societies in these institutions are invaluable resources that can serve as liaisons between students’ undergraduate and professional institutions. Pre-health advisors often arrange college fairs or career fairs that provide one-on-one meetings between minority affairs advisers and prospective dental students.

Prospective students have reported that informative counseling is a factor in choosing the dental school to which they apply. ULSD participates in college and career fairs annually and supports feeder institutions that have been established by the university and some that have been established by HBCU graduates. The director of minority affairs and admissions and the predental health advisors of Tennessee State University, Murray State University, Kentucky State University, and Alabama A&M University, for example, set up annual visits to ULSD where prospective students can tour the dental school and shadow dental students. Visiting students can also take this opportunity to
receive counsel and advice prior to applying to the school. The director of minority affairs and admissions is available for continuing counsel throughout the student’s predental academic career.

Finally, ULSD has a student chapter of the National Dental Association (SNDA). The NDA is a professional organization initially established when minority dentists were not allowed to be part of the American Dental Association. Membership in the NDA has since evolved to encompass all races, ethnicities, and nationalities of dentists who desire to serve those who have limited or no access to dental care. The SNDA at ULSD hosts an annual Impressions Program, which seeks to introduce the field of dentistry to academically talented yet economically disadvantaged inner-city high school seniors. These students are invited to the dental school for a day to participate in hands-on activities (drill and fill, making impressions of their fingers, dental hygiene instructions, etc.), a tour of the dental school, and presentations by residents, community dentists, and faculty members regarding various dental specialties. Another component of the Impressions Program educates high school students about the specifics of admission to dental school and helps them to prepare and be competitive for admission beginning at the high school and early undergraduate levels. In addition, SNDA members talk with the high school students about their own paths to dental school and what it is like to be a dental student in the first, second, third, and fourth years of study. The SNDA members, residents, and faculty members continue to interact with and mentor these prospective students for years to come.

Mentoring

Mentoring has long been seen as providing important assistance to the recruitment and retention of URM and low-income students. The dental community and the community at large should be included in these efforts in order to reach many parts of the population. Most mentoring programs rely on dental students, dental faculty members, or volunteer private practitioners to make connections with prospective dental students. Mentoring students are often members of the student chapters of the NDA and the Hispanic Dental Association (HDA). During the dental school interview process, members of the SNDA and HDA are introduced to minority applicants during the tour of the school so they can provide insight into the transition from undergraduate to professional school. Upon acceptance into dental school, incoming URM dental students are paired with members of the SNDA and HDA, who maintain mentoring relationships with the students all the time they are in dental school. Students have reported that the mentoring by SNDA and HDA members is very beneficial at easing their transition into dental school, both academically and socially.

Most dental faculty mentors of URM students are members of underrepresented minority groups themselves. Collaborative and supportive relationships with predental clubs and professional dental organizations as well as community organizations such as the school boards, churches, and PTAs can also facilitate recruiting efforts.

In 2008, an underrepresented minority full-time faculty member at ULSD founded a dental mentoring program that focuses on mentoring forty economically disadvantaged, academically talented seventh- and twelfth-grade Jefferson County Public School students from many races and ethnicities (the majority being African American). G.A.M.E. Time! (Gaining Altitude, Maintaining Excellence) is a nonprofit dental mentoring program that exposes elementary and high school students to various aspects of dentistry covering topics related to the importance of early preparation for entry into dental school, what being a dentist entails, a glimpse into the didactic and clinical life of a dental student, hands-on laboratory exercises, touring the ULSD and a private practice office, and monthly academic enrichment exercises in which learning about dentistry while enhancing math and science skills is emphasized. The goal of this mentoring program is to expose, encourage, and excite potential dental school applicants about the dental profession. In addition, excellence in academics, self-esteem, and leadership is emphasized so that no matter what career the mentee chooses, he or she will have been exposed to the tools that will help them achieve success.

The majority of the dental students who participate in the mentoring program are members of the ULSD chapter of the Student National Dental Association. However, the entire student body is encouraged to and often participates in the program, assisting with monthly activities and even serving as mentors. In addition, private practice dentists provide mentoring opportunities in the form of shadowing and volunteering in their offices. Many of these dentists have offices in rural and economically disadvantaged areas. In these settings, the mentees are exposed to
the daily operations of dentistry in the private sector and receive insight and guidance from practitioners who provide dental care to the underserved.

## Administrative Units

The leadership and alignment of the administrative units responsible for admissions, student affairs, student services, and diversity are critical in efforts to increase URM enrollment. Research has found that when the student affairs offices are headed by an associate or assistant dean, the student enrollment of underrepresented minorities increases. However, as long as the units are aligned, those leading the units at the director or manager level can also have an important impact.

In 2002, ULSD hired a part-time faculty member to serve as the director of minority student affairs and admissions. This strategic move by the university has been useful in accomplishing the goal of having at least 10 percent of our first-year class be African American. While work still needs to be done in the area of enrolling Hispanic students, there has been a steady increase in enrollment of Hispanic students since 2002 (Table 1). Since the director of minority student affairs and admissions is an underrepresented minority and comes from a low-income background, he has first-hand insights into which will be the most effective mentoring and recruitment strategies. While this is clearly a position that requires full-time commitment, ULSD has been able to achieve and maintain what even dental schools with full-time leadership are challenged to accomplish.

The institution provides other forms of support for URM students as well. The Office of Student Affairs offers tutoring and counseling to those students demonstrating academic or personal need. Students are individually paired with a student tutor, and progress is followed by the director, with further follow-up and actions added as needed. Every year the school also offers financial aid to some URM students in the form of scholarships although the number of scholarships and amount of each are based on the school’s budget. Scholarship recipients are chosen according to criteria that include but are not limited to DAT score and GPA. In addition, each scholarship is renewable if the student maintains a certain GPA. Although research has found that the cost of dental school and incurring educational debt are not as high of a concern with underrepresented minority students as has been speculated, financial assistance does have some influence when prospective students are considering dental schools for enrollment.

## Discussion

Recruiting and retaining URM dental students require multitiered commitments from the top administrative units to faculty, staff, and students. Vigilant efforts must be initiated and sustained to ensure that the commitment is not in vain.

At ULSD, collaborations with other professional schools within the university, such as the medical school (in the SMDEP, MAPS, and PEPP), have facilitated outreach efforts. Many students reported that they had not even considered dentistry

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as a profession until being introduced to it during a collaborative effort with medicine. After recruitment presentations, some students reported a newfound interest in dentistry. Other collaborations such as with health care professional organizations, minority alumni, volunteer dentist, and other community organizations are also vital avenues through which ULSD connects with prospective URM students.

Collaborating with URM predental societies (SNDA, HDA) and working with feeder institutions have seemed to be among ULSD’s most successful means for increasing minority enrollment. Prospective students turned first-year enrollees often say that interacting with current URM students made them feel that they would have support in transitioning to dental school and earning the degree.

We have also found that the involvement of minority faculty members enhances the recruitment and retention of minority students since prospective students often look for minority faculty members in choosing a dental school. In addition, minority faculty members are likely to participate in the school’s recruiting and retention efforts for URM students. Minority faculty members, just as all faculty members, are crucial for this purpose. Prospective students often report that interacting with minority faculty members encourages them and makes earning a dental degree seem more feasible. The university’s investment in recruiting and developing minority faculty members should be rooted in the school’s commitment to a diverse environment.

Creating a welcoming environment for all ethnic and racial groups is a top priority at ULSD. Implementing diversity objectives within the curriculum helps to ensure that all students are well prepared to work with individuals from diverse cultural and religious groups. ULSD has an annual diversity seminar in the fall semester that is mandatory for all incoming freshman and residents and new faculty members. In addition, course directors are encouraged to incorporate diversity objectives into their courses where applicable.

While the University of Louisville School of Dentistry has made significant improvements over the last thirteen years in recruiting and retaining African American and Hispanic students, there is still work to be done. ULSD will continue to align itself with national objectives to increase diversity in the dental workforce and reduce oral health disparities, while providing an exceptional educational experience for all its students.

REFERENCES