ABSTRACT: Mentoring has served as an effective mechanism to reduce the attrition rates of individuals who are entering graduate programs in the health science disciplines; however, both minorities and males continue to be underrepresented, particularly in the discipline of human communication sciences and disorders. In response to this rapidly growing shortage, several institutions have addressed the need for mentoring; few, however, have provided effective mentoring programs to reverse the shortage of these underrepresented populations. Even fewer have focused on mentoring in graduate education. Given these facts, the purpose of this article is to present 2 models for use in graduate education: a Multiple Mentor Model and a Five-Tier Mentoring Program. Both are designed to reduce attrition rates and enhance student success in acquiring the skills necessary to transition into a professional career. The former is based on the premise that students can benefit from having multiple mentors with varied skills to facilitate their academic, professional, and personal development. The latter consists of 5 components that are essential for a successful mentoring program. The authors also provide recommendations regarding new directions in the field to improve mentoring efforts that will enhance the recruitment, retention, graduation, certification, and employment of graduate students.

KEY WORDS: mentoring, retention strategies, graduate education, diversity

Mentoring may be defined as “a developmental partnership through which one person shares knowledge, skills, information, and perspective to foster the personal and professional growth of someone else” (American Speech-Language-Hearing Association [ASHA], 2007a, p. 1). Although mentoring has been used extensively in business and medicine to cultivate an individual’s career success, only recently has it been employed in graduate education as a mechanism to guide an individual’s academic development with the goal to enhance retention and program completion, particularly with regard to males and minorities. The term mentoring, a derivative of the word “mentor,” has been described as having its origins in Greek mythology (Roberts, 1999). According to Greek literature, Pallas Athena, who transformed herself into an elderly man known as Mentor, became a servant to King Odysseus (a.k.a. Ulysses), King of Ithaca (National Academy of Sciences, National Academy of Engineering, Institute of Medicine, 1997). Odysseus entrusted Mentor with the care of his son, Telemachus, when he set out on an odyssey to fight in the Trojan War. During his absence, Odysseus left both his son and his kingdom in Mentor’s care (Reh, 2007; Roberts, 1999). Thus, Mentor became Odysseus’ wise and trusted counselor as well as a tutor to Telemachus.

From a historical perspective, the earliest recorded mentor was Imhotep (2635–2595 BC), whose name means “the one who comes in peace.” Imhotep (Greek Imouthes) was an Egyptian polymath or “Renaissance man” (Kemp, 2005, p. 159) and served as great vizer (Chancellor) to King Djoser, who ruled as pharaoh during the 3rd Dynasty (Oakes & Gahlin, 2003). One of the world’s most famous ancients, Imhotep was the first known architect, physician, scribe, chief lecturer, priest, and astronomer. As master architect to Djoser, he is credited with designing and being responsible for building the Step Pyramid complex at Saqqara, Egypt. For 3000 years, Imhotep was worshipped...
as a god in Greece and Rome. His titles included Chancellor of the King of Lower Egypt, First after the King of Upper Egypt, Administrator of the Great Palace, Hereditary Nobleman, High Priest of Heliopolis, Builder, Chief Carpenter, and Chief Sculptor (Kemp, 2005). Thus, as master in a number of fields as well as the chief lecturer of Egypt, Imhotep would indisputably be considered the first mentor.

Mentoring has been addressed in the literature as an avenue to enhance retention efforts in graduate education. ASHA, 1994, 2007b; Galbraith & Cohen, 1995; Howard University Graduate School, 2002; Lovitts, 2001; National Academy of Sciences, 1997; National Education Association [NEA], 1997; Nettles & Millett, 2006; Reinartz & White, 2001; Riskin et al., 2005; Shafer, 2004; Smallwood, 2004; Taylor, 1993; Wright-Harp & Muñoz, 2001). The need for a mentoring framework that focuses on diversity has also been discussed given the shortage of both males and racial ethnic groups in the science fields (Nettles, 2005; Stolar & Cowles, 1992; Tonkovich & Slater, 2004; Wynn, 2007). Although it has been more than a decade since Taylor addressed the topic in his chapter “Mentoring People of Color: Challenges and Opportunities,” in which he discussed mentoring as a means to increase the success of individuals from diverse cultural backgrounds and provided recommendations for addressing the problem, there still exists a major disparity in the number of individuals of color who enter careers in academia and research in the field of human communication sciences and disorders (HCSD).

In spite of ample documentation (Council of Graduate Schools, 2004; Davidson & Foster-Johnson, 2001; Terrell, 2007) regarding the need to mentor underrepresented individuals of color, few models have been designed to provide effective mentoring strategies to reduce the high attrition rates and address the rapidly growing shortage of professionals, particularly males, in the health disciplines. Even fewer in the HCSD field have focused on mentoring in graduate education. Given these facts, the purpose of this article is fivefold.

- Address the shortage of culturally and linguistically diverse (CLD) populations in the HCSD discipline, including the substantial disparity between the number of males and females.
- Discuss new directions to improve mentoring efforts for graduate students.
- Present a multiple mentor model for use in graduate education.
- Highlight the components of a five-tier mentoring program.
- Discuss outcomes of the mentoring relationship.

MENTORING CLD POPULATIONS: MAJOR ISSUES

A perusal of the literature on mentoring and graduate education reveals four major issues: (a) the declining number of individuals from diverse racial/ethnic groups, particularly males, pursuing graduate degrees, (b) the underrepresentation of women in the sciences, (c) the gradual decline in the number of individuals pursuing the PhD degree, and (d) the underrepresentation of racial/ethnic minority faculty in academia. Each will be discussed in turn.

Decline of Diverse Student Enrollment and Shortage of Males in Graduate School

A crisis clearly exists regarding the dwindling number of individuals from diverse populations entering graduate degree programs, particularly in the disciplines of science, technology, engineering, and mathematics (STEM). Nettles (2005) documented this downward trend among students from diverse racial/ethnic groups matriculating at universities in the science disciplines. His findings are germane to the field of HSCD, which has shown a rapidly growing shortage of individuals from CLD populations over the past 2 decades (Council on Graduate Programs in Communication Sciences and Disorders, 2006). Similarly, major shortages of minorities are projected in the field of medicine. For example, the Association of American Medical Colleges (AAMC) (Hayes, 2006) reported data on the decline in the number of minority applicants entering medical school. This underrepresentation of minorities can be attributed in large part to a lack of mentoring (Nettles & Millett, 2006).

Even more alarming is the continued decline in the number of males entering graduate school compared to females, which has reached critical proportions, particularly among African Americans and other diverse racial/ethnic groups. Data reported in the American Council of Education’s (ACE’s) “Minorities in Higher Education 22nd Annual Status Report” (2006) revealed that, at all degree levels, minority men showed fewer gains than did minority women. When compared to minority men, minority women earned an additional 6,100 degrees at the professional and doctoral level between 1993–1994 and 2003–2004 (ACE, 2006).

In the discipline of HCSD, Tonkovich and Slater (2004) also underscored the decrease of males in the profession of speech-language pathology. According to ASHA 2006 membership counts data, there has been a steady decline in the proportion of male ASHA constituents since 1997 (ASHA, 2007). During the period from 1997 to 2005, the number of male professionals decreased by 2.1% (i.e., 8.3% in 1997, 7.7% in 1999, 7.2% in 2001, 6.7% in 2003, 6.3% in 2005, and 6.2% at year end 2006). In 2006, based on specialty area, males comprised 4.4% of speech-language pathologists (SLPs), 18.4% of audiologists, and 27.5% of individuals with dual certification.

Although previous studies (e.g., Nitri, 2001; Rudenstine, 2001) reported a decline in minority student enrollment in higher education, recent data from ACE (2006) indicate that students of color made dramatic gains in high school completion rate as well as in college enrollment and degrees conferred for the period from 1994 to 2004. However, one of the major findings noted was the continuing downward trend in minority male enrollment. According
to the data, at all degree levels, minority women showed stronger gains than did minority men. Another important finding was the dramatic increase in the number of associate degrees awarded, particularly to Hispanics. Twice as many associate degrees were conferred during the two time periods 1993–1994 and 2003–2004, with Hispanics showing the highest growth rate (118.7%), followed by African Americans (80.2%).

**Underrepresentation of Women in the Sciences**

The second issue mentioned in the literature concerns the paucity of women in the STEM disciplines, which has generated considerable debate and controversy regarding the cause of this dilemma. A number of factors ranging from discrimination to social pressures have been attributed to this underrepresentation. Two major viewpoints, however, have been at the forefront of this debate regarding gender differences in the sciences and may shed some light on the problem. Supporters of the first viewpoint contend that although the sexes may have different intelligences, they are essentially equal in their intellectual ability. More controversial is the second viewpoint, that there are biological innate gender differences that account for the fact that comparatively few women excel in scientific careers (Summers, 2005). By and large, both girls and women have been discouraged from pursuing science and engineering as a profession (Committee on the Guide to Recruiting and Advancing Women Scientists and Engineers in Academia, National Research Council, 2006). As a result of this controversy, there has been a recent movement in academia, particularly in secondary and graduate education, to create programs designed to reverse this trend (e.g., Women in the Sciences & Engineering Institute at Penn State University and Women in the Natural Sciences at the University of Texas at Austin).

Although women are still extremely underrepresented in the sciences when compared to men, recent data indicate that they have been entering the STEM disciplines (Council of Graduate Schools, 2004; Malcom, Chubin, & Jesse, 2004) and the field of medicine (Salsberg & Grover, 2006) in greater numbers. For example, Smith and Moreno (2006) provide documentation of this growth trend. According to the results of their survey in 2004 on earned doctorates in the STEM disciplines, women of all races who were U.S. citizens (N = 13,442) were distributed as follows: 412 in engineering (3.1%), 1,889 in biological/biomedical sciences (13.9%); 873 in health sciences (6.5%); 21 in atmospheric sciences and meteorology (0.2%); 345 in chemistry (2.6%); 89 in computer and informational sciences (0.7%); 89 in geological and earth sciences (0.7%); 132 in mathematics (1%); 53 in ocean/marine sciences (0.4%); and 75 in physics (0.6%). This represented an overall increase from pervious years, with 48.5% of women earning doctorates compared to 51.5% of males.

At Howard University, the rising enrollment patterns for females entering the graduate school are even more compelling, particularly with regard to the number of African American women pursuing the PhD in the STEM disciplines. In fact, the majority of the doctoral fellows enrolled in the Alliance for Graduate Education and the Professoriate Science, Technology, Engineering and Mathematics (AGEP STEM) Program at Howard University are African American women. In addition to being the nation’s largest on-campus producer of African Americans with PhDs, Howard alumni make up the largest cohort of female PhDs in the HCSD discipline. Furthermore, from 1997 to 2001, Howard was ranked as the number one baccalaureate origin institution for doctorate recipients in science and engineering (Malcom et al., 2004).

**PhD Shortage in the Field of Communication Sciences and Disorders**

Studies have documented the gradual increase in minority student numbers at the PhD level (Committee on the Guide to Recruiting and Advancing Women Scientists and Engineers in Academia, Committee on Women in Science and Engineering, National Research Council, 2006; Council of Graduate Schools, 2004; Malcom et al., 2004). For example, in the biological/biomedical sciences, the distribution of minorities earning doctorates in 2004 was as follows: 136 African Americans (7.3%), 174 Hispanics (14.8%), 379 Asian Americans (26.2%), and 14 American Indians (10.9%). Overall, these data clearly illustrate an increase in both the number and proportion of doctoral degrees earned by minority U.S. citizens between 1984 and 2004.

In spite of this apparent rising trend, with individuals of color now entering colleges and universities at an increasing rate, the discipline of HCSD has not experienced a similar growth. Thus, there still exists a need to increase the number of underrepresented professionals in the science disciplines, especially HCSD.

The shortage of professionals holding the PhD in the HCSD discipline was documented by the Joint Ad Hoc Committee on the Shortage of PhD Students and Faculty in Communication Sciences and Disorders (2002). This committee, consisting of representatives from ASHA and the Council on Academic Programs in Communication Sciences and Disorders (CAPCSD), found that just 11 programs accounted for 58% of the currently enrolled PhD students (N = 813) in the nation. These 813 students, 13% who are from diverse racial/ethnic groups, are not likely to fill the current faculty position vacancies, and of even greater concern, those vacancies that are projected in the next couple of years as current faculty retire. Therefore, “the need for more professionals, particularly individuals from diverse racial/ethnic groups, to become doctoral-level researchers and academicians is expected to dramatically increase in the next 5 years” (A. Pietranton, personal communication, May 5, 2005). Given these findings, in 2005, ASHA, through a focused initiative, launched a program to address the rapidly growing PhD shortage.

According to the ASHA 2006 membership counts data, of the total number of members (101,892) who were certified in speech-language pathology (CCC-SLP), only 2.8% (2,835) had earned a doctorate (see Table 1). These figures further document the dire need to recruit and train individuals at the doctoral level, particularly given the fact that more than half of the current faculty in HCSD at the professorial rank...
will be retiring within the next 5–10 years (Miller, 1999). Thus, unless rigorous efforts are taken to enhance the recruitment and retention of doctoral-level students, the supply of PhDs will be inadequate to meet the rapidly growing demand for faculty in academia. Mentoring can serve as a vehicle to ensure the recruitment, retention, and matriculation of students through graduation.

**Dearth of Minority Faculty in Universities**

The shortage of racial/ethnic minority faculty is a final issue that is emphasized in the literature. In 2004, ASHA reported that minorities constituted only 6% of total PhD graduates. These data further document the crisis that exists with regard to the number of minorities with PhDs who are entering the ranks of academia.

Data reported in a special issue (2004) of the NEA provide very compelling evidence of the decline of minorities entering the higher education career track. According to the NEA, race and ethnicity remain issues. When reviewing career types in academia, the authors reported that individuals who are not U.S. citizens make up the highest percentage of individuals with positions in research, Whites have the highest percentage of positions in executive/administration, and Hispanics and Blacks comprise the largest group in the service positions. The authors further stated, “Unlike the large increase in the number of women entering academic professions, the share of minority faculty members is growing at a much slower pace” (NEA, 2004, p. 12). According to ACE’s (2006) “Minorities in Higher Education 2002–03: 20th Annual Status Report,” the nation’s colleges and universities are making steady but slow gains in hiring minority faculty.

Faculty diversity remains a major priority for most universities. In spite of the concerted efforts of universities and professional organizations to address this imperative, minority faculty still constitute an underrepresented group on our nation’s predominantly White campuses. Undoubtedly, until the representation of all racial/ethnic groups becomes a major priority, this disparity will continue to exist. As noted by Smith and Moreno (2006), “Locating diversity at the center of an institution’s mission and educational and scholarly priorities is both effective and legal” (p. B23).

The disproportionately small number of minorities with a doctorate in HCSD is a persistent problem. In 2004, faculty from diverse racial/ethnic groups made up only 7.6% of the workforce, and this figure has remained relatively constant during the past 2 decades (CAPCSD, 2004). For example, in the college/university setting, Hispanic faculty with PhDs made up only 1.9% of ASHA members reporting racial/ethnic background (see Table 2). Moreover, of the remaining 1,835 faculty with PhDs working in universities, 1,614 (88%) are White, 78 (4.3%) are African American, 71 (3.9%) are Asian, and 5 (.3%) are American Indian/Alaska Native (see Table 3). Although the data indicated no change among Whites, African American PhDs decreased in number from 89 (5.6%) in the previous year. This downward trend has also been reported with regard to enrollment figures for African Americans and other minority groups matriculating in doctoral programs in the field. In 2000, for example, CAPCSD reported that there were 85 minority doctoral students, which represented 13.6% of the total enrollment in the field. If the 86% attrition rate trend for doctoral students, reported by CAPCSD (1998), still holds true, of these 85, only 12 new minority professionals will emerge in the near future. These findings illustrate the true crisis that exists in the HCSD discipline regarding the PhD shortage.

Data from the 2006 ASHA constituent counts provide further documentation that there is a dire need to recruit more individuals from racial/ethnic groups into the professions. For example, year-end 2006 ASHA data indicate that the association represented 127,420 individuals including SLPs; audiologists; and speech, language, and hearing scientists. Of this number, 7.3% were minorities compared to 24.9% of the U.S. population (U.S. Census Bureau, 2000). When compared to the 2005 year-end data, the number of ASHA constituents has grown from 123,190, which represents a 3.4% (4,230) increase. Yet minority constituent numbers have remained relatively constant (i.e., 7.2% in 2005 vs. 7.3% in 2006). The percentage of minorities includes the 2.7% of ASHA constituents who

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**Table 1.** American Speech-Language-Hearing Association (ASHA) 2006 year-end counts by highest degree and certification.

<table>
<thead>
<tr>
<th></th>
<th>CCC in speech</th>
<th>CCC in audiology</th>
<th>Dual CCC</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor</td>
<td>1,273</td>
<td>155</td>
<td>36</td>
<td>1,464</td>
</tr>
<tr>
<td>Master</td>
<td>96,723</td>
<td>9,232</td>
<td>758</td>
<td>106,713</td>
</tr>
<tr>
<td>PhD</td>
<td>2,835</td>
<td>899</td>
<td>296</td>
<td>4,030</td>
</tr>
<tr>
<td>AuD</td>
<td>7</td>
<td>1,390</td>
<td>44</td>
<td>1,441</td>
</tr>
<tr>
<td>Other doctorate</td>
<td>1,054</td>
<td>121</td>
<td>45</td>
<td>1,220</td>
</tr>
<tr>
<td>Total</td>
<td>101,892</td>
<td>11,797</td>
<td>1,179</td>
<td>114,868</td>
</tr>
</tbody>
</table>

*Note. CCC = certificate of clinical competence.*
self-identified as multiracial (compared to 2.4% of the U.S. population) and 3.0% who identified their ethnicity as Hispanic or Latino (compared to 12.5% of the U.S. population). Based on these data, one can surmise that there is a dwindling pool of racial/ethnic minorities who would be eligible to pursue the doctoral degree and ultimately the professoriate. Moreover, diversity of ASHA’s membership is not keeping pace with the rising trend of racial/ethnic minorities entering higher education.

Mentoring is one major solution that can be used to address these issues. In light of the impending faculty shortage in the professions of audiology, speech-language pathology, and speech, language, and hearing science, it is critical that recruitment and retention efforts focus on increasing the number of doctoral graduates, especially those from CLD populations. Moreover, a strategic plan that focuses on successful employment of racial/ethnic professionals in all settings is imperative. The plan should also include career pathing, constructs to aid in career satisfaction and upward mobility. For example, if one is a member of a racial/ethnic group and is entering academia, a career-pathing plan toward successful tenure is important and, therefore, should be given special attention. In addition, academic institutions should include strategic mentoring efforts to recruit and retain faculty at the PhD level.

NEW DIRECTIONS

In light of the documented shortage of minorities and males currently entering the HCSD discipline, it is essential that mentoring strategies be used to help forge a new direction by improving the recruitment, retention, graduation, and certification efforts for these populations entering graduate school. According to Wunsch (1994), “The new direction for mentoring in higher education is systematic and comprehensive mentoring sponsored by the institution and available to all who wish to engage in it” (p. 27). In the section that follows, a mentoring model is presented that represents this “new direction” and, thus, can help meet the mentoring needs of students in all disciplines entering graduate programs. It can serve as a mechanism to ameliorate the disparity between women and men in the STEM disciplines, the current shortage of doctoral professionals, the decreased retention and graduation of individuals from diverse racial/ethnic populations, and the underrepresentation of diverse racial/ethnic groups in the academy. Moreover, this mentoring model will provide an avenue to enhance the matriculation, graduation, and career success of individuals who are pursuing audiology and speech-language pathology careers, particularly persons from diverse cultural backgrounds.

The Mentoring Process

Mentoring may be defined as a process whereby one guides, leads, supports, teaches, and challenges other individuals to facilitate their personal, educational, and professional growth and development through mutual respect and trust (Cole & Wright-Harp, 2004, 2005a, 2005b, 2006). An understanding of cultural and gender differences is critical to the success of the mentoring process. Mentoring is viewed not only as a relationship between two individuals, but as a process. As a growth process, mentoring can be systematically planned and evaluated.
The following elements must be considered in the mentoring process: identification and training of mentors, pairing of mentors and proteges, selection of mentoring activities, devotion of time to mentoring, and life cycle of the process (Wunsch, 1994). The International Mentoring Association (IMA, 2003) describes mentoring as encompassing three factors concurrently:

- It is a series of tasks that effective mentors must perform to promote the professional development of others.
- It is the intense, trusting, supportive, positive, confidential, low-risk relationship within which the partners can try new ways of working and relating—make mistakes, gain feedback, accept challenges, and learn in front of each other.
- It is the complex, developmental process that mentors use to support and guide their proteges through the necessary career transitions that are a part of learning how to be an effective, reflective professional and a career-long learner.

Unlike coaching and advising, mentoring is the all-inclusive description of everything that is done to support the protege’s orientation and professional development. It includes creating the relationship, ensuring emotional safety, and providing the cultural norms needed for risk taking for the sake of learning and achieving the desired result of accelerated professional growth (IMA, 2003).

Attributes of the Ideal Mentor

A mentor is someone who makes a concerted effort to assist another individual to become a successful professional (National Academy of Sciences, National Academy of Engineering, and Institute of Medicine, 1997). Toward this end, the ideal mentor possesses a multitude of attributes and skills. For example, he or she should be willing to commit to a mentoring relationship as well as to be accessible, open-minded, supportive, a good listener, and sensitive to the mentees’/proteges’ needs and areas of interest. Moreover, the mentor/mentee relationship should be characterized by mutual respect, trust, understanding, and empathy (National Academy of Sciences, National Academy of Engineering Institute of Medicine, 1997). Therefore, the ideal mentor has multiple roles. Zelditch (1990, p. 1) stated,

Mentors are advisors, people with career experience willing to share their knowledge; supporters, people who give emotional and moral encouragement; tutors, people who give specific feedback on one’s performance; masters, in the sense of employers to whom one is apprenticed; sponsors, sources of information about and aid in obtaining opportunities; models, of identity, of the kind of person one should be to be an academic.

For the mentoring relationship to be successful, the mentor must be sensitive to cultural diversity, which involves being willing to understand the culture of individuals from diverse racial/ethnic backgrounds. The mentor must also be willing to understand factors that may be attributed to gender differences and societal mores (e.g., demands of being a wife and mother, single parent) that could influence the mentee’s academic success (National Academy of Sciences, National Academy of Engineering, Institute of Medicine, 1997).

It is preferable that the mentor’s personal style be compatible with that of the mentee/protege. For example, if the mentor is goal driven, organized, flexible, and systematic with communication and monitoring, then he or she will work well with a protege/mentee with similar characteristics. Likewise, the mentee should have a clear understanding of his or her own management style and seek a mentor who has a compatible management style preference (e.g., authoritarian, participatory, or laissez faire). The Myers-Briggs Type Indicator (MBTI) is an excellent instrument that can be used by mentors and mentees/proteges to obtain a better understanding not only of their personality type, but also of their management and leadership style as well as preferences (The Myers and Briggs Foundation, 2008). Finally, the ideal mentor should possess excellent motivational skills and believe that mentoring is satisfying and rewarding.

Mentor Training

A basic assumption is that professionals in the academic setting are keen stewards of the mentoring process and are excellent mentors. Traditionally, faculty (academic and clinical) and other professionals are not taught how to mentor, nor are they provided with coursework on mentoring while completing their degrees. The strategies and techniques acquired (whether good or bad) are typically those that were used by mentors who served them during their preprofessional years. In order to establish best mentoring practices, principles, and procedures, a training component must be included in all mentoring programs. A paradigm shift must occur in order to have structured practices implemented successfully. Comprehensive mentor training, which would include a structured curriculum, should be included as part of faculty contracts. To truly combat the current recruitment, retention, and graduation issues, institutions must implement a radical approach. For example, excellent faculty mentoring should be tied to tenure and promotion; just as continuing education is required every 3 years to maintain certification in the discipline of communication sciences and disorders, mentoring training should be required, especially for those who are directing theses and dissertations. Also, incentives should be provided to faculty who are successful mentors. Such incentives could include merit increases, additional lab resources, release time, and/or bonuses. Universities and colleges should partner with professional associations such as the IMA, which has a mentor training program that could be used as a model.

A MULTIPLE MENTOR MODEL

One of the most important decisions that an individual can make is to select a professional mentor early in one’s
career. A major premise undergirding the Cole and Wright-Harp Multiple Mentor Model is the need for students to have multiple mentors of varied skills, ages, and traits who can meet their individual needs. Given the fact that no one mentor can possibly address the varying needs of mentees as they matriculate through graduate school and make the transition into their professional careers, one can never have too many mentors. Thus, the following mentor model (Cole & Wright-Harp, 2005a, 2005b, 2006) is proposed as a mechanism to facilitate graduate students’ progress through both their academic and professional careers. The model highlights the fact that the graduate student should have multiple mentors, which include the following five types: academic, clinical, research, peer, and career/professional development (CPD) mentors (see Figure 1).

**Academic Mentor**

A key role of the mentor in academia is that of faculty adviser. Although the term mentor is often used synonymously with faculty adviser, the major difference between the two is that the adviser is involved primarily in the development and monitoring of a student’s academic program, whereas a mentor establishes both a professional and personal relationship that helps to facilitate the mentee’s academic success. Moreover, unlike a faculty adviser, the academic mentor makes a commitment to see that the student successfully completes the graduate program, thereby decreasing the number of students with the status of “all but dissertation” (ABD) and “all but master’s thesis” (ABMT).

In the academic realm, the mentor and mentee establish a dynamic relationship within which the mentor is respectful of the student’s concerns. Ideally, the academic mentor serves as teacher and guide in an interactive partnership that is aimed at enhancing the mentee’s self-awareness and fulfillment, with the ultimate goal of helping the mentee to have a positive and fulfilling graduate school experience (Lovitts, 2001). Lovitts further notes that the academic mentor also provides an integrative experience to aid students in the development of cognitive maps of the program, the discipline, and the profession. Consequently, the mentee is better able to make the transition from academia into his or her chosen career path.

**Clinical Mentor**

Unlike the other mentor types that would be applicable to all disciplines, the clinical mentor is more relevant to the discipline of HCSD and other allied health fields that require students to acquire practical training through a variety of clinical practicum experiences (i.e., university clinics, hospitals, rehabilitation clinics, and public and private schools). In the clinical realm, the ideal mentor would engage in continuing education efforts to remain current in the discipline as well as to stay abreast of the most recent state-of-the-art approaches to clinical management (i.e., assessment and treatment, patient/client education and resources). Also, the clinical mentor should provide continuous feedback to facilitate the mentee’s/protege’s development of clinical competencies. The ideal clinical mentor would also integrate the importance of using research and outcomes data as part of the mentoring experience, which in turn would improve treatment efficacy.

**Research Mentor**

The ideal research mentor should have a record of successful research mentoring, be current in his or her discipline, conduct research that is relevant to the needs in the field, have a productive track record in research that is regarded as such by colleagues within the department and the discipline, and have a record of funded research and publications. In addition, the research mentor should be willing to allow research activities to be observed, assume responsibility for research, share mentoring responsibilities and rewards, acknowledge the contributions of mentees in presentations and publications, have a record of successful mentees/proteges, and be genuinely interested in the mentee/protege. Moreover, the ideal research mentor must be willing to invest the necessary time to foster development of the mentees’/proteges’ research capabilities and to boost their professional self-confidence and esteem by providing opportunities for the mentees/proteges to disseminate their research via presentations and publications.

**Peer Mentor**

Throughout academic and clinical training, peer mentors play a major part in the graduate school process. The role of the peer mentor should begin at the outset of graduate school. Peer mentors can assist new students in making a successful transition by providing support and encouragement. The ideal peer mentor would be someone who has the desire to mentor, has good to excellent interpersonal skills, is punctual and reliable, understands the importance of maintaining strict confidentiality regarding matters discussed with the mentee, and adheres to the university’s code of conduct.

Peer mentors should be viewed as potential leaders in the discipline and should help fellow students to maintain a
balance in both their academic and personal lives. Usually peer mentors have the same academic major as their mentees and are in the same professional training program or institution. They are also typically in the advanced stages of their academic training or have a particular area of expertise to share with other students. Peer mentors should share personal strategies to help new students overcome obstacles or challenges in their graduate school experience. They should also share their own learning experiences, including professional successes as well as failures, and help motivate mentees on a routine basis as well as in challenging or trying situations. Peer mentors also may serve as tutors and should have a high level of expertise in the subject area in which they are tutoring. Peer mentors coach and guide mentees and understand when to intervene and when to refer a mentee for professional guidance. Peer mentors should also praise their mentees’ successes and accomplishments. By giving a bit of themselves to fellow students, peer mentors help mentees to reach their full potential. Students who serve as peer mentors during graduate school are provided opportunities to sharpen and develop their mentoring and leadership skills. This mentoring experience will be extremely useful, especially if they are considering a career in academia.

CPD Mentor

Perhaps of all the mentor types, the CPD mentor plays the most critical role in helping the mentee to successfully transition into his or her chosen career setting. Attributes to seek in a CPD mentor include patience, experience, availability, and expertise in the discipline. For example, the CPD mentor should possess patience in providing guidance to new professionals based on their skill sets, have established themselves as a model professional in the current employment setting, be willing and able to impart their knowledge relevant to the delivery of services to target populations, know the culture of the organization and orient mentees to the politics of the employment setting, and help mentees develop the competencies necessary to advance along the career path. Most importantly, the CPD mentor should guide the mentee/protege in acquiring the necessary credentials (e.g., the ASHA certificate of clinical competence (CCC), state education certification, and state licensure) to practice the profession as well as be aware of their professional goals (e.g., to obtain the PhD) and provide direction on how to accomplish them.

Finally, it is important that the Multiple Mentor Model be used by students so that they can take advantage of the expertise and preferences offered by a mentor. Generally speaking, the mentor should be willing to commit to the mentoring process by reserving adequate time to provide quality mentoring, developing and implementing time-directed goals, meeting on a consistent basis (e.g., a minimum of biweekly), and maintaining ongoing communication between meetings through a variety of venues (face to face or electronically). When seeking the ideal mentor–mentee/protege match, one must be cognizant of the fact that no one mentor can serve all of his or her mentee’s/ protege’s needs. Therefore, institutions should introduce students to a variety of mentors and the process by which students can identify and select mentors who will be able to meet their individual needs. However, if institutions do not provide a mentoring program, individuals should seek out their own mentors.

COMPONENTS OF A SUCCESSFUL MENTORING PROGRAM: FIVE-TIER MENTORING PROGRAM

The Five-Tier Mentoring Program is recommended for graduate schools to enhance student success (Table 4). Each component can be viewed as a stepping stone to improve both student retention and degree completion. They include (a) committing to the mentoring process, (b) establishing mentoring venues, (c) serving as a role model, (d) employing successful tools, and (e) monitoring the protege’s progress. Strategies presented in Table 4 are relevant to each step and can serve as a mechanism to facilitate a mentor’s effectiveness. The Five-Tier Mentoring Program has been implemented with tremendous success in two divisions at Howard University: the Graduate School’s AGEP STEM Program and the Doctoral Leadership Program in the Department of Communication Sciences and Disorders (Wright-Harp & Cole, 2005).

Howard University Graduate School Programs

Although mentoring programs are in abundance in higher education, few as previously noted are designed specifically for graduate students. At Howard University, mentoring services are provided through the Graduate School’s Office of Retention, Mentoring, and Support Programs, in addition to the university’s traditional mentoring efforts. As part of Howard’s initiative to enhance the recruitment and retention of PhDs from diverse racial/ethnic groups, the following four programs were conceived and funded through both intra- and extramural grants: the Graduate School’s AGEP STEM; the Doctoral Douglass Scholars Program (DDSP); the Johnetta Davis Retention and Mentoring (JDRM) Program; and the Peer Mentoring Program (PMP). These programs demonstrate how mentoring can enhance matriculation, retention, graduation, and career success of individuals from diverse cultural backgrounds.

AGEP STEM. This 10-year-old program, which was originally funded by the National Science Foundation (NSF) in 1998, joined with the University of Texas-El Paso (UTEP) in 2002 to form a unique partnership. The focus of this partnership is on increasing underrepresented minority student doctoral enrollment, graduation, and preparation of students for faculty careers in the STEM disciplines. With a $2.5 million grant from the NSF, the partnership represents the first major endeavor in graduate education to join a research-extensive historically Black college and university (HBCU) with a research-intensive Hispanic serving institution (HSI) to address the severe underrepresentation of African Americans and Hispanics in STEM doctoral

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education. The combined strengths of the two institutions are a particular advantage of the partnership. This alliance expands the range of doctoral disciplines offered by Howard's AGEP program to include the STEM disciplines of computer engineering, environmental science and engineering, and geological sciences that are offered at UTEP. **DDSP.** This program, originally funded in 1999, is designed to attract the nation's most talented students, particularly African Americans, to pursue doctoral studies at Howard University, especially those who plan to enter the professoriate in the nation's colleges and universities. The program was created by President H. Patrick Swygert and has subsequently received generous support from the HBCU's United Negro College Fund/Lilly Endowment Initiative. It was established to address the well-documented fact that African Americans are under-represented nationally among PhD recipients in virtually all disciplines, as well as within the college and university professoriate. The program is built on Howard's established national leadership in producing African American PhD recipients and its nationally recognized Preparing Future Faculty (PFF) Program. All Douglas doctoral scholars participate in the Howard University PFF Program, which offers teaching, research, and service experiences at Howard and partner institutions around the nation, in addition to a rigorous mentoring and retention program. **JDRM.** This program, which was named for one of the university's outstanding Deans, was created in 1999. It is sponsored by the Graduate School in an effort to enhance retention and graduation of graduate students. In 2002–2003, the Department of Communication Sciences and Disorders (CSD) was the recipient of the first-place award. The CSD JDRM is designed to assist first-year master's students in making the transition to graduate school. The project offers three components: a peer mentoring program, a media library, and study skills workshops (Wright-Harp, 2002, 2005a, 2005b). The peer mentoring program matches newly admitted students with advanced students in their second or third year of the master's program in speech-language pathology. The mentor is selected based on his or her program track (i.e., education or medical) and interests, whenever possible. Mentors serve as a conduit into campus life at Howard University and help their mentees succeed academically by providing exposure to resources in the Washington metropolitan area. The media library serves as an instructional resource for students by providing a variety of tapes (i.e., audio and video) and DVDs on topics ranging

### Table 4. The Five-Tier Mentoring Program.

<table>
<thead>
<tr>
<th>Mentoring step</th>
<th>Strategies</th>
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<tbody>
<tr>
<td>Commit to the mentoring process.</td>
<td>• Reserve adequate time to provide quality mentoring (e.g., the mentor and protege should meet a minimum of once a month). • Communicate between meetings (e-mail, phone contacts, etc.) and develop as well as implement time-directed goals.</td>
</tr>
<tr>
<td>Establish mentoring venues.</td>
<td>• Discuss possible mentoring venue options and determine the most feasible venue. • Utilize a variety of mentoring venues, including: o face-to-face meetings, o tele-mentoring, o written communication, o e-mentoring, o cyber-mentoring (e-mail, audio-conferencing, video-conferencing).</td>
</tr>
<tr>
<td>Serve as a role model.</td>
<td>• Mirror an excellent professional image. • Allow the protege to “shadow” you. • Convey a passion for the culture of the profession. • Provide hands-on clinical and research experience.</td>
</tr>
<tr>
<td>Employ successful tools.</td>
<td>• Provide a time-ordered mentoring schemata. • Develop and adhere to a program of study. • Provide a mentoring plan update. • Require skills/professional development workshops and seminars. • Require attendance and presentations at scientific and professional meetings.</td>
</tr>
<tr>
<td>Monitor mentee’s progress.</td>
<td>• Conduct monthly individualized mentoring sessions. • Provide updates (monthly, mid-quarter/semester, end of the quarter/semester, midyear, year-end). • Review the following areas in each session. o Coursework o Lab/internship experience o Research o Professional development o Concerns/challenges</td>
</tr>
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from clinical features of various communication disorders to assessment and treatment strategies. The study skills workshops—conducted by the mentors and doctoral students in the CSD program—address a diversity of topics (i.e., time management, note- and test-taking strategies, clinical report writing, and stress management) to improve students’ performance in the academic and clinical programs. Consequently, the JDRM Program has been successful in reducing student attrition and enhancing participants’ program completion.

**HUGS PMP**. This program, which was created in 1999, employs a holistic approach to mentoring by focusing not only on graduate students’ academic training, but also on their professional and social lives. The Office of Retention, Mentoring and Support Programs coordinates the retention and mentoring programs in collaboration with academic departments. HUGS PMP was established to provide comprehensive services that focus on both academic and nonacademic skills to facilitate graduate student success. The goals of the program are to create a climate of support and encouragement for new graduate students; provide students with positive experiences that will improve their communication with administrators, professors, and staff; motivate students to become involved in all aspects of the graduate school experience; provide individualized mentoring to master’s and doctoral scholars to aid in their successful completion of graduate school; enhance academic skill development in such areas as scientific writing, scientific/analytical reasoning and logic, oral presentation, problem-solving and test- and note-taking strategies; facilitate the development of nonacademic skills such as time and stress management, financial management, conflict resolution, career and professional development, and Internet and computer technology; and provide students with a competitive professional edge to facilitate their transition from graduate school. In addition, the HUGS PMP is designed to establish a relationship between peer mentors and proteges that allows the latter to adapt to the rhythm of life in graduate school in a major metropolitan city; assist new students in overcoming obstacles and challenges in their graduate school experience; and provide new graduate students with an experienced guide who will help them achieve and maintain a positive attitude, hone their study skills, and maintain academic focus as they matriculate through their academic program. The proteges benefit from the experiences of advanced graduate students who have successfully negotiated their coursework, maintained academic excellence, and cultivated a life balance outside of graduate school. Moreover, the program provides opportunities for peer mentors to sharpen and develop their mentoring skills and offers an avenue for both mentor and protege to develop a relationship that allows them to engage in a shared experience of growth and discovery.

These four Howard programs have had a major impact on participants. Some of the major benefits are that participants have developed scholastic and professional skills; self-discipline; interpersonal skills; research skills; and finally, a competitive edge for success in graduate school.

**Issues Facing Students**

**Entering the Academic Setting**

Racial/ethnic mentoring differences. Mentoring is not universal. Nettles and Millett (2002) conducted a comprehensive nationwide survey of doctoral programs. The major findings revealed that 70% of doctoral students overall had a faculty mentor (Nettles & Millett, 2002). However, it was also noted that 36% of African Americans did not have access to a mentor, 43% of African Americans in science and mathematics did not have a mentor, and 26% of African Americans in engineering did not have a mentor. Their data further revealed that faculty are not anxious to work with or become mentors to racial/ethnic students due to lower GRE scores, lower undergraduate GPAs, and degrees received from less prestigious undergraduate institutions. Moreover, the survey results showed that African Americans are the least likely ethnic group to receive research assistantships in education. For example, the education research assistantships were distributed as follows: 19% for African Americans, 26% for international students, 28% for Latinos, 29% for Whites, and 37% for Asian Americans. In the science and math disciplines, assistantships were 38% for African Americans, 65% for international students, 66% for Latinos, 71% for Whites, and 72% for Asian Americans.

Furthermore, Nettles and Millett (2002) reported several consequences of a lack of mentoring. A major problem revealed by these researchers was the negative impact on faculty–student relationships. For example, African Americans in engineering, science, and math had a higher incidence of negative social interactions with faculty; Latinos in engineering experienced the same. Moreover, African Americans majoring in engineering had a negative perception of the quality of their faculty. The researchers concluded that the long-term impact of the lack of mentoring is a higher incidence of students either stopping/dropping out or being dissatisfied with the program.

**OUTCOMES OF THE MENTORING RELATIONSHIP**

Mentoring is included in the Council of Graduate Schools’ (2004) PhD Completion Project as one of the six identified institutional and program characteristics that influence student outcomes. Students who are involved in a mentoring relationship develop a myriad of skills that will enhance their transition into graduate and professional school as well as the workforce. For example, mentoring enhances mentees’ and proteges’ leadership and/or oral presentation skills. It also helps develop their professional writing skills, resulting in excellent performance on research papers, senior papers/theses, comprehensive exams, and dissertations. Other benefits associated with the mentoring process are that it provides more opportunities for students to acquire internships, apprenticeships (research, teaching, administrative), and summer employment. But, by far the most significant mentoring outcomes include higher retention rates, greater
percentage of degrees granted, success in matriculating in graduate and professional schools, experience in making professional presentations, exposure through attendance at professional conferences, success in securing a postdoctoral position, increased postdoctoral productivity, employability, and finally, career-pathing success.

There is a clear connection between undergraduate success and success in graduate school (ASHA, 2007b; Cole & Wright-Harp, 2004, 2005a, 2005b; Nettles & Millett, 2006). For example, undergraduates who complete senior papers or theses are more likely to succeed in completing the master’s thesis. Master’s students taking the thesis option are better prepared to complete the dissertation below the timeframe reported as the national average. Likewise, there is a relationship between graduate school productivity and postdoctoral productivity. Examples of research productivity include peer-reviewed publications, book chapters, and conference proceedings before completing the degree. These individuals are more likely to become productive faculty members and professionals.

**IMPLICATIONS**

Data from the U.S. Census Bureau document the fact that the nation is growing by more than 25 million per decade (U.S. Census Bureau, 2006a, 2006b). Also, the elderly population is growing rapidly; for example, the number of persons who are age 65 and older is expected to double by the year 2030. Additionally, there is the inevitable increase in the number of CLD persons. These projected population growths have serious implications for our discipline, making it essential that professional training programs intensify their efforts to train more clinicians to serve the rapidly growing populations of school-age children and the elderly. Thus, recruitment, retention, graduation, and certification efforts must be implemented on a large scale. Moreover, systematic strategies must be implemented to encourage students and professionals (clinicians) to pursue research and academic careers.

The demand for professionals to serve the rapidly growing population of children, adolescents, and adults with communication disorders is on an upsurge. Our recruitment efforts must begin even as early as the elementary school years by attracting, exposing, and training children to the sciences to ensure that future demands for professionals can keep pace with the predicted population growth. Universities should create programs with elementary schools, middle schools, high schools, and community colleges that will promote the professions early on as students are beginning to decide on a career choice. An experience-based mentoring program would allow the aforementioned populations access to information on our professions. For example, students will be able to gain exposure to the HCSD discipline by visiting university campuses, observing classes, and shadowing professors and scientists. Faculty should solicit funding from various sources (e.g., private and federal agencies) to support the programs, which will provide funding not only for program development and implementation but also for stipends and scholarships to aid in student recruitment and retention. The Jumpstart Summer Enrichment Program (Shafer, 2004) is one example of a high school level mentoring program that is designed to encourage disadvantaged students who are interested in medical careers. Professors at the Louisiana State University Health Sciences Center School of Allied Health Professions (SAHP), Speech-Language Pathology Program, mentored three young women who were interested in medical careers. According to Shafer, “By the end of the program, one student had stated her desire to work as an SLP” (p. 1).

All HCSD programs should consider establishing an Experience-Based Career Education (EBCE) Program as discussed in the *Speech-Language Pathology and Audiology Recruitment Manual* (Chabon, Cole, Culatta, Lorendo, & Terry, 1990). The goal of the program is to provide students with as much hands-on experience as possible, exposing them to various activities conducted at the site. An example is Idaho State University’s EBCE Program, which is designed to expose students to and involve them in six aspects of the department of communication sciences and disorders, including academic instruction, clinical work, research, grants, administration, and student involvement.

**CONCLUSION**

A number of issues have been addressed that are negatively impacting the discipline of HCSD with regard to the underrepresentation of minorities and men. Efforts should be intensified to attract individuals from racial/ethnic minority groups to graduate training programs in the discipline. One such vehicle is mentoring, which has been shown to be effective in combating the problems related to recruitment, retention, graduation, and certification not only of students in HCSD, but in all fields, particularly those from racial/ethnic minority groups. Therefore, the strategies presented in this article can be employed to ensure that the professions meet the personnel demands that are predicted for the future.

There is a dire need to create more mentoring programs at all levels (i.e., preschool, elementary, middle, high school, undergraduate and graduate/professional). Programs such as those offered in the Graduate School at Howard University, which focus on the retention and graduation of individuals pursuing a graduate degree, have proven essential to the survival of effective graduate programs not only in terms of facilitating student degree completion, but also by enhancing recruitment and retention efforts. These innovative mentoring programs serve as a source of funding for the institution through grants designed to fund student scholarships and other educational needs (i.e., books, travel funds, and research materials).

It is imperative that mentoring models such as the one presented in this article be implemented on a national basis. The Cole and Wright-Harp Multiple Mentor Model and the Five-Tier Mentoring Program provide a process to
address all of the issues previously discussed, particularly the decline of males and the underrepresentation of CLD populations in HCSD. Moreover, the strategies presented serve as a mechanism to ameliorate the PhD faculty shortages, thus aiding in the continued growth of our discipline, especially with regard to diversity.

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