Critical Issues in Dental Education

Strategies for Developing a Culture of Mentoring in Postdoctoral Periodontology


Abstract: Dental education in the United States and Canada is currently experiencing a crisis with respect to faculty recruitment and retention. The major reasons for the status of dental and specialty education are lower salaries and lack of interest. To make up for this deficit in the specialty of periodontology, our current educators need to utilize strategies targeted towards an existing potential teaching resource: the postdoctoral students in periodontology. The intent of this article is to review the current crisis in dental faculty recruitment and retention, show how it affects the specialty of periodontics, and describe how creating a culture of mentoring may facilitate more engagement of periodontal residents in the teaching process during their postdoctoral training. The strategies utilized to develop a culture of mentoring in the Department of Periodontology at Tufts University are presented. They include methodologies to develop and enhance residents’ mentoring skills, thereby helping to compensate for the shortage of periodontists involved in academics. Measurement of the mentoring strategy is presented from data obtained from an online survey of third-year predoctoral students’ perceptions of their interaction with residents as their clinical instructors. Moreover, the numbers of program alumni engaged in teaching prior to and after the mentoring program was initiated are also presented as an outcome of the mentoring program. Developing a culture of mentoring in postdoctoral periodontology programs can be an important tool to enable individuals to become more involved in the process of teaching and mentoring during their postdoctoral training. This outcome could ameliorate the deficit of periodontists engaged as formal educators. Moreover, development and expansion of a culture of mentoring in a periodontology program may encourage recent graduates to become more involved in teaching subsequent to graduation.

Dr. Hempton is Associate Clinical Professor and Assistant Director, Department of Periodontology, Tufts University School of Dental Medicine; Dr. Drakos is in private practice, Athens, Greece; Dr. Likhari is Chief Resident, Department of Periodontology, Tufts University School of Dental Medicine; Dr. Hanley is Associate Professor, Department of Periodontology, and Associate Dean for Clinical Services, Tufts University School of Dental Medicine; Dr. Johnson is Professor, Surgical Dentistry, University of Colorado School of Dental Medicine; Dr. Levi is Associate Clinical Professor, Department of Periodontology, Tufts University School of Dental Medicine; and Dr. Griffin is Associate Professor, Department Chairman, and Director of Postdoctoral Periodontology, Tufts University School of Dental Medicine. Direct correspondence and requests for reprints to Dr. Timothy J. Hempton, Department of Periodontology, Tufts University School of Dental Medicine, 1 Kneeland Street, Boston, MA 02111; 617-549-3613 phone; 781-461-1221 fax; timothyhempton@verizon.net.

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Sustaining the quality and growth of a profession like the specialty of periodontics needs a constant influx of talented individuals to both practice the profession and train future practitioners. Currently, the specialty of periodontics is experiencing a decrease in highly qualified applicants for postgraduate education and a shortage of faculty to teach both pre- and postdoctoral periodontics. This faculty shortage will certainly have a significant negative impact on our profession in the future. Predoctoral students may not receive a quality educational experience in periodontics if their exposure to periodontists during their dental education is limited. This lack of exposure may lead to an incomplete understanding of the role and scope of periodontics in patient care. Additionally, a limited exposure to periodontists who serve as mentors during dental school is likely to have a negative effect upon students making a career choice to become a periodontist or periodontal educator. Periodontics is not alone in regard to faculty shortage. In recent years, the American Dental Education Association (ADEA), the American Dental Association (ADA), and other professional groups have expressed increasing concern regarding faculty recruitment and retention.1-4 Recruitment, develop-
ment, and retention of qualified dental faculty have long been and continue to be key priorities for ADEA and for academic dental institutions throughout the country.

In 1999, an ADEA task force noted that between 1980 and 1999 the percentage of fourth-year dental school students indicating an interest in careers in academic dentistry fluctuated between 0.5 percent and 1.3 percent.1 The same data were used to predict that, with an average of 4,000 D.D.S./D.M.D. graduates per year, the number considering academic careers would be far below the estimated 200 needed yearly just for faculty replacement.3 According to a 2005 ADEA survey,5 there were 275 full-time and twenty-four part-time budgeted faculty positions that were vacant. Almost 76 percent of those nearly 300 vacant faculty positions are in the area of clinical disciplines.

The shortage of faculty is also evident at the level of the dental specialties, although current data indicate the percentages of practicing general dentists (81 percent) and specialists (18.6 percent) remain constant. The specialties of pediatric dentistry, endodontics, and orthodontics as well as periodontics have recognized the faculty shortage as a significant problem and have developed a number of strategies to address this issue.4,6,7

The American Academy of Periodontology (AAP) addressed the periodontal faculty shortage in the summary report of 2000 at the ADA House of Delegates meeting. Under the direction of the AAP, the AAP Foundation has established programs to attempt to facilitate the entry of young periodontists into an academic career. These programs include institutional awards such as the Chasens Teaching and Research Fellowship and Tarrson Fellowship and the addition of two new individual awards: the AAP Education Scholarships and AAP Teaching Fellowships. Additionally, the AAP, together with the ADA and ADEA, has planned to encourage young health professionals to enter into and remain in academic teaching programs by encouraging legislation and/or funding to provide student loan deductions and waivers.

Academic workforce studies indicate that individuals leave dental faculty positions primarily for private practice, as a result of income disparity.7 In addition, dental school faculty replacements do not readily come from individuals who have recently completed a specialty training program. Students who pursue specialty residency tend to have higher debt levels. It appears that these individuals, with current faculty salary levels, will not be able to meet the challenge of repaying their loans.4 Decreased funding of dental education has a negative impact on faculty compensation. To augment the problem, increasing tuition rates have resulted in increased student debt and may limit faculty recruitment in the future.

Although financial concerns are a key reason why students do not choose to follow an academic path, another important reason is a lack of interest in the academic field. The current educational environment in dental schools has been characterized as a “culture that does not foster interest in an academic career.”2 Individuals in private practice may not have an interest in returning to dental schools to teach full- or part-time because of a lack of academic mentoring during their educational experience.

Other sources of faculty are foreign-trained individuals who have limited practice opportunities in the United States because of licensure and visa requirements8 or retiring officers from the military services. However, an untapped source of potential faculty consists of graduate students who can be educated and mentored to have a successful private practice along with a part-time teaching commitment as part of their careers in periodontics. This article explores this latter option.

Ways to Avert the Faculty Recruitment and Retention Crisis

One of the recommendations of the 1999 American Association of Dental Schools (AADS; now American Dental Education Association, ADEA) task force was the implementation of culture-changing programs to mentor, prepare, and recruit future faculty.3 An AADS survey of dental school deans in 1999 reported that when dental schools did have formal programs directed toward promoting academic careers, these programs were mainly focused on developing student research efforts.5 Another way of developing an academic interest in the student is through teaching and mentoring.

Residents in specialty programs are mandated by the accreditation guidelines to be given the opportunity to teach, where they may transfer their knowledge to dental students and their own peers. Some residents might look negatively on this teaching experience because it reduces time available for clinical practice, research, study, or leisure. Often residents perceive themselves as individuals who have come to
a specialty program to learn how to practice clinical periodontology and implant dentistry. In addition, they might feel “used” as a worker by the school. It therefore could be difficult for a resident to perceive the importance of developing educational skills. We need to motivate them to consider themselves as future educators. The development of educational skills is vital. Developing these skills, which can serve many purposes, is critically important for the preservation of the specialty of periodontology.

First, mentoring can help our specialty develop additional teaching faculty in order to address the problem of faculty shortage and help overcome the recruitment and retention crisis. Second, residents who become involved in teaching can develop a community-oriented mindset. The specialist who helps to teach and educate the general dentist is the specialist to whom the general dentist will refer patients. A periodontist participating in his or her local dental school’s teaching programs and giving seminars, lectures, and presentations in his or her local, state, or national dental societies is recognized positively in the community by fellow professionals and patients. This can help periodontists expand their referral basis and improve their practice.

By establishing an educational environment based on cooperation and transfer of knowledge and skills, we have the possibility of creating a culture of mentoring in our specialty. Residents can easily understand that their specialty and practice will benefit from the process of mentoring. This constitutes one of the major arguments to promote mentoring as an integral part of postdoctoral periodontal training.

Studying business models, one can find that any corporation or institution survives through leadership development. An institution such as the specialty of periodontics can survive only when future leaders are developed. An analysis of the reasons why successful visionary corporations succeed in the long term, when compared to equivalent corporations lacking a vision, appeared in 1994 in the business literature. One of the most interesting findings is that the long-lasting success of corporations is not based on individual visionary leaders but on the development of a vision. The CEO of such a visionary and successful company initiates early the process of mentoring the CEO who will be his or her successor. The adaptation of this business model and the installment of mentoring in our specialty could result in the development of a “periodontal vision” and the survival and prosperity of our specialty.

### Mentoring

Mentoring appears to be a subject of increasing importance, as reflected by the substantial number of publications found today that describe its goals and benefits. A mentor is considered to be someone who is a trusted counselor or guide. The word “mentor” has also been used interchangeably with other types of learning relationships such as advisor, coach, role model, or sponsor. All of these relationships can be components of a mentoring relationship.

ADEA’s Commission on Mentoring defined mentoring as the following: “a voluntary and reciprocal interpersonal relationship in which an individual with acknowledged expertise shares his or her experience and learning with another (less experienced) person.” Oftentimes, the concept of mentoring is overwhelming to both the mentor and mentee. It is important to note that the mentoring process needs to begin somewhere; simply put, the goal of mentoring is quite basic, to help another person in his or her personal and professional growth.

Successful mentoring relationships are usually long-term and are based on trust and mutual respect. The mentoring relationship goes beyond the role of professional advisor and extends towards focusing on both the personal and professional growth of the individual. More specifically, a resident in a mentoring relationship needs to learn knowledge, skills, insights, and values.

The characteristics of both mentor and protégé (or mentee) in a healthy mentoring relationship have been described in the literature. A good mentor is knowledgeable, competent, accessible, flexible, honest, attentive, supportive, friendly, and direct. He or she provides feedback, encourages personal development, and is willing to share. A good mentee is characterized by having enthusiasm and responsibility. The mentee is serious, committed, respectful, motivated, and shows appreciation to the mentor. He or she is willing to work hard and to undertake new challenges.

In short, both mentors and mentees desire relationships in which both parties are committed to investing time, energy, honesty, and focus.

While one would expect that mentoring includes a positive and productive experience, not all mentoring relationships are successful. Negative or “toxic” mentoring experiences have been reported: they have led to tendencies of the mentee to leave the organization and high levels of stress. Potential
pitfalls in mentoring include the following: mismatch between the mentor and mentee, unrealistic expectations, abuse of power in the relationship, overdependence, and competition and conflict between the mentor and the mentee.  

Many successful academic institutions encourage and support mentoring relationships and have found ways to institutionalize the process. The mentoring relationship grows from a direct interaction toward collaboration. Moreover, the empowerment of the mentee, which results from the evolution in the relationship, leads to the transmission of the professional legacy. In other words, mentees will hopefully possess a desire to pass on the torch to a new generation at a subsequent point in their careers when they are in a position to assist the professional development of younger colleagues.

Models of Mentoring

Many different types of mentoring programs exist. The first type, called “formal,” tends to be structured and task-oriented. Its characteristic is the “assigned” relationship, which may lack the interpersonal dimension, but provides equal access to mentoring relationships for all mentees. The second type is “informal” mentoring, in which the relationship between the mentor and the mentee is based on “natural chemistry.” These so-called organic relationships are fairly rare.

A third type of mentoring relationship also exists, called “the structured match,” in which mentors and mentees complete detailed profiles of their personal and professional interests, areas of expertise, and demographics. The individuals can choose a mentor based on similar interests listed in the profile, increasing the probability that the right “chemistry” will be developed. This is the type of mentoring currently used by the AAP in its Volunteer Mentor Program, designed to help student members connect with established Academy members. According to the information on the AAP website, “members who volunteer to become a mentor are committed to building long-term relationships with the students who select them. Mentors are willing and able to spend the time necessary to support students as they transition from graduation to the periodontal profession and beyond.” Individuals have the opportunity to search for a mentor within a selected geographic location and/or an area of expertise (clinical issues and practice issues).

Introducing the concept of mentoring in periodontology training programs is not an easy task. Mentoring in the academic field is often an alien concept to predoctoral students and residents, who are usually products of competitive environments and have been educated to progress on an individual basis. As a result, they frequently develop the arrogance of conviction rather than the humility of uncertainty. Furthermore, the concept that a deeper understanding of the discipline may be developed through the process of teaching, coaching, and mentoring is not necessarily obvious to the residents.

A Strategy for Culture Change

In the Department of Periodontology at Tufts University School of Dental Medicine (TUSDM), members of the academic community are instructed that “a synonym for profitable is cooperative.” The faculty recognizes that students are aware at the outset of their postdoctoral training what their clinical and research requirements are. The faculty not only instills a culture of responsibility relative to clinical and research requirements, but also helps postdoctoral students develop a sense of responsibility in teaching and mentoring far above and beyond the minimal requirements for teaching as per the Commission on Dental Accreditation (CODA).

At TUSDM, it is not just about using requirements to modify graduate student behavior; it is also about creating a culture of responsibility for mentoring. This concept changes attitudes. Graduate students are taught that the concept of mentoring creates skills to develop patient referrals in the school. This serves as a learning model for the maintenance of those skills in private practice. Predoctoral students will have a more positive relationship with a mentoring graduate student who proactively shares information. As a result, they may be more inclined to continue to refer patients. A graduate student who is not interested in mentoring but only in obtaining patients may see fewer referrals. These graduate students may be viewed by predoctoral students as unhelpful; therefore, their referrals may be directed toward the mentoring graduate students who share their knowledge.

Prior to instituting this strategy, we noted a significant number of negative responses (both numerically and in write-in commentary) from predoctoral
students in their required outcome assessments of their periodontal rotations in the postdoctoral clinic. The percentage of those responding to this rotation evaluation was 100 percent, as students will not receive their grades in periodontal rotation without having completed the survey. The individual student evaluations of the rotation are anonymous.

These evaluation documents include commentary regarding interactions with the graduate students who are functioning as clinical instructors in the predoctoral clinic. An analysis of the 2000–01, 2001–02, and 2002–03 academic year rotation course evaluations led the department to recognize that predoctoral students had a negative perception of their experiences with the postdoctoral students during this clinic rotation. As a result, in September 2004, the department developed a network of “mentoring-type” interactions or strategies to create a culture of mentoring. These interactions were designed to exist between the senior and junior residents in our postdoctoral periodontal program, as well as between our residents and the predoctoral students. The question of whether this strategy would result in improved outcomes from the data obtained from the evaluation documents would be examined over a period of four academic years.

**Mentoring Between First- and Third-Year Residents**

At TUSDM, the graduate residency in periodontology involves six postdoctoral students. Residents in their third year are paired with first-year residents, assisting them initially in clinical patient examination, intraoral photography, performance of surgical procedures, and case presentations. This helps the third-year residents develop teaching skills and develop a deeper understanding of their subject. The first-year resident is the mentee: he or she acquires technical and theoretical knowledge and learning how to develop a mentoring culture that will help him or her also become a mentor in the future.

**Mentoring Between Residents and Predoctoral Students**

The second- and third-year residents also have the opportunity to interact with dental students at three levels: in the predoctoral periodontics clinical rotation, in the predoctoral clinic, which is based on a general practice model, and in the periodontics study club.

**Predoctoral Clinic Rotation.** Predoctoral students are assigned to this periodontal clinical rotation for approximately one week per clinical year. In this environment they may function as assistants for graduate students. This rotation is common in most institutions that have postgraduate periodontics programs. The difference in our strategy is that we advise our graduate students that they have a responsibility to facilitate the learning process of the predoctoral students during this rotation. Predoctoral students are not there just to assist; they are there to receive explanations from the graduate students regarding the rationale for the therapy they have elected to perform as well as a review of the techniques.

Moreover, the graduate students are encouraged to allow the predoctoral students to participate in the surgery, e.g., making incisions, elevating a flap, or suturing. The degree of involvement depends upon the level of the predoctoral student. Technically, the only requirement of the predoctoral student is their attendance. But by extending participation of the predoctoral student beyond being an observer or just suctioning blood and saliva during a surgical procedure, the predoctoral student leaves with a sense of accomplishment.

To facilitate this positive interaction during the predoctoral clinic rotation, residents receive training to help them function as mentors for dental students. A formal two-hour mentoring seminar is provided at the beginning of their first year and again at the beginning of their second year. In addition, continued instruction in mentoring is integrated into the periodontal didactic curriculum. For example, during a presentation on mucogingival therapy, the lecture would include a discussion on how to describe this material on an appropriate level to a predoctoral student. Ways to communicate with the predoctoral student in the presence of a patient in a fashion that maintains the patient’s psychological and physical comfort are also presented.

**Teaching in the Predoctoral Clinic.** The teaching model utilized at TUSDM is a general practice model. Periodontal faculty and graduate students are called upon to participate in patient care and in the education of dental students in the capacity of consultants. The graduate student is advised that this critical role results in success when communication and humility exist. Without question, the graduate student, in this context, is more informed than the predoctoral student, even though both are learning at the same time.
This situation mimics the reality for generalists and specialists working together in private practice. Over time, information is acquired by both, as advances are made in dentistry. With two-way communication and the desire to continue to learn and share information, relationships between specialists and generalists can be maintained. The new mindset for learning together moves the graduate student from the role of a one-way communication specialist to the role of a mentoring consultant in the predoctoral clinic. This change in attitude, one of a mentoring consultant, allows the resident to acquire the skills to develop and maintain referral relationships.

The Predoctoral Periodontal Study Club. The third level of mentoring interaction between periodontal residents and predoctoral students is the Perio Study Club. Overseen by the department chairman, it is an informal discussion every two months around a clinical case presentation authored by a predoctoral student in conjunction with a resident. This school-based endeavor simulates interactions seen in inter-disciplinary study clubs that are sponsored by private specialty practices or local dental societies.

Troubleshooting the Mentoring Process

Even under the most ideal circumstances, not all mentor-mentee relationships will be positive. In any human interaction, there is likely to be differences of opinion, a war between egos or a breakdown in the relationship due to personality factors. Negotiating through these difficult times is an important topic to be discussed with graduate students as they learn to become mentors. Our experience at Tufts with mentoring by graduate students indicates that two issues need to be carefully considered: the first is affinity between mentors and mentees, and the second is dealing with a breakdown of a relationship.

Regarding affinity, the strategy is to encourage the residents to develop the mentality of a salesperson. The residents are advised that they are selling their skills. They are advised to focus on the transmission of ideas and delivering a product or service. Concepts developed by Dale Carnegie are discussed with residents. Recommending that salespeople override their interpersonal dislikes and prejudices, the Dale Carnegie method espouses the idea of looking for positive attributes in the person you are interacting with, as well as listening to their wants and needs. Once an individual realizes that the salesperson is trying to help, that person will not buy the product because of being sold the product; rather, it will be purchased because the seller identified the buyer’s want or need for the product or service. The graduate students use this philosophy to get the predoctoral students to self-identify their need for assistance as they endeavor to develop skills. Our graduate students are constantly reminded that when interacting with other students, the three most important words to remember are “let me help.”

Regarding the breakdown in relationships, the faculty discuss techniques presented by Fisher and Ury in their books Getting to Yes and Getting Past No, which describe techniques for troubleshooting relationships. Fisher and Ury review techniques routinely used in business for positive negotiations. When emotions get the upper hand in an interaction, the graduate students are trained to take a break, calm down, and reevaluate the situation. They are instructed to understand how to be professional in their relationships. If the relationship with a mentee cannot be mended, the faculty step in and help with the analysis of “why.” If two people cannot work together, they are advised simply to part company on friendly terms. Faculty members explain to graduate students that the development of negative interactions provides an opportunity to explore the etiology of these interactions and develop an understanding of how to prevent and repair damage in future interactions. This training is especially important for their future as mentoring consultants in private practice.

The interaction between the resident in periodontology and the dental student at TUSDM simulates the relationships found in everyday practice between specialists and their referring practitioners. A poor interaction penalizes the resident, since his or her referral base (and consequent clinical experience in the school) diminishes. The faculty member often addresses problems resulting from negative behavior and also compliments positive mentoring relationships.

The satisfaction each resident obtains from positive experiences of mentoring is manifold. First, residents understand they are learning more by teaching. Second, they are developing skills that will provide more referrals both in the university and in private practice. Finally, the notion that engaging in communicating with dental students can be likened to passing the torch of information encourages continuing a relationship with the academic community.
Outcome Assessments of the Mentoring Program

Written assessments of the relationship between the predoctoral and periodontal residents have been recorded via an anonymous computer survey over the last seven years. We have noted a general improvement in the commentary since we initiated the emphasis on mentoring in 2004. In 2003, the number of negative comments exceeded the positive comments by 2 to 1. The biggest complaint was that there was a lack of involvement in procedures by predoctoral students when they were assigned to assist graduate students during the periodontics rotation. There were many comments from predoctoral students that they were “just there to suction.” Other comments were directed at a lack of information transmitted to predoctoral students by periodontal residents. Examples of these types of comments were “I learned nothing from the residents” and “We need more interaction between the resident and the undergrad with the grad student telling the undergrad what they are doing and why.” This negativity has changed over the course of time. The most recent evaluation was recorded subsequent to the completion of the academic year 2006–07. In this survey, positive comments by predoctoral students exceeded the negative comments by a ratio of 10 to 1. Typical student comments indicated that they felt “more involved during their perio rotation”; they were receiving a “good clinical experience”; and the residents “were really taking the time to explain the procedures.”

The rotation evaluation also includes statements that were rated on a scale from 1 to 5. The number 1 correlated with “strongly agree/excellent,” and the number 5 correlated with “strongly disagree/poor.” A rating approximating 2.5 on the scale would indicate a “neutral or satisfactory opinion.” The evaluation statements were the following: “This clinical rotation effectively promoted learning”; “The clinical instructor(s) made the rotation interesting”; and “The clinical instructor(s) were proactive in teaching.” The statements in the rotation evaluation and the average numerical ratings from the predoctoral students from the academic year prior to initiating mentoring program and subsequent years to our last recorded evaluation for the academic year 2006–07 are listed in Table 1.

At the end of the first year of our mentoring program, we observed an improvement in the numerical evaluations: the numbers moved closer to 1 (strongly agree/excellent). Our last recorded results obtained in 2006–07 were significantly better. As a lower value indicates improvement, it can be noted that the values from 2002–03 are almost twice as large as the values recorded in 2006–07.

For the last three and a half years, the postdoctoral faculty has met with the graduate students to assess, among other things, the quality of interaction between the first-, second-, and third-year residents as well as the level of referrals they have been receiving from the predoctoral students. The feedback has been very positive and encouraging relative to these two parameters.

Regarding the goal of the mentoring program to encourage recent graduates to enter teaching, we have noted an increased interest in remaining within academia. At the time of going to print for this publication, no graduating students from the classes of 1997, 1998, 2000, 2001, and 2003 had become involved in any type of teaching. In 1999 and 2002, one graduate became involved in part-time teaching. Since 2004, one member of the graduating class elected to participate full-time in dental school-based periodontal education. In 2005, one student became full-time and one became part-time. In 2006, two students became involved in part-time teaching. In 2007, three students became involved in part-time university-based teaching.

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<td>The clinical instructor(s) were proactive in teaching.</td>
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1=strongly agree/excellent; 5=strongly disagree/poor
Summary

There is evidence that an interest in teaching, mentorship, and role modeling are among the positive influences on the decision to choose a career in academic dentistry. Given the critical role mentoring plays in supporting the recruitment, development, and retention of faculty, there is a significant role for both the American Academy of Periodontology and individual academic dental institutions to play in the development of mentoring initiatives.

At TUSDM, we have created a three-pronged strategy to foster mentoring. The graduate students are encouraged to mentor each other, mentor predoctoral students during their clinical experiences, and participate in a Perio Club. The establishment of these three mentoring interactions creates an environment not unlike that found in the realm of private practice, i.e., specialists helping general practitioners integrate periodontology into their concept of comprehensive patient care.

The importance of creating a culture of mentoring in the postdoctoral program cannot be underestimated. Through this strategy, we can establish an environment of support and positivism. A culture of mentoring can facilitate increased teaching resources by developing our graduate students as educators. Moreover, the positive experiences obtained from this type of interaction may encourage graduate students to engage in teaching subsequent to receiving a certificate. They may do so because they believe that mentoring ensures success.

REFERENCES