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## CONFERENCE SESSIONS

### I. GRADUATE STUDY

#### GRADUATE STUDY—A MUST FOR CLINICAL TEACHERS IN DENTISTRY\*

RUSSELL A. DIXON, D.D.S., M.S.D.,† *Washington, D. C.*

The literature is replete with definitions, requirements, and prescriptions for great teaching. The late Dr. Glenn Frank, President of the University of Wisconsin, stated three basic requirements for a great teacher:

"First, the great teacher never stops studying his subject.

"He does not lecture year after year from the same dog-eared and yellow lecture notes.

"He is, in the best sense of the word, a research man, which does not mean, by the way, that he is forever publishing monographs and books in his field. Frankly, when I have an appointment to make, I am not at all impressed by a long list of research publications by the candidate. I want to see the man and get the feel of his mind, for some of the liveliest minds in the world of scholarship are not forever rushing into print.

"I am convinced that infinite harm has been done to our universities by the over-emphasis we have put on publication by the teachers we appoint. We need men of wide and deep knowledge, and many teachers would be broader and wiser men if they studied and thought more and wrote less.

"Second, the great teacher keeps his mind fresh and free.

"He must be given the chance ever so often to get away from the routine schedule of his work, so that he can have time to examine himself, his mind and his methods. He must have time for travel, for leisurely reading. He must have time to peer into all the corners of his field so that he will not become a too-narrow specialist.

"He must have time to dip into some related but different activities. He must have the chance to become wise as well as learned.

"Third, the great teacher establishes a personal as well as a professional relation with his students.

"I confess that I lose interest in a teacher when I discover that he never sees his students save in his classroom and in his office at stated office hours.

"The great teacher is willing to have his private life broken into by eager students who come into his home at odd hours for informal and unofficial intellectual wrestling bouts.

"All this is a taxing enterprise. But who ever said that the life of the great teacher is an easy life."<sup>1</sup>

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\*Presented before the Conference Session on Graduate Study, American Association of Dental Schools, St. Louis, Missouri, March 1956.

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<sup>1</sup>Endelman, Julio: *The Pacific Dental Gazette*, 28, 387; June 1930.

The limitations of this paper, however, do not allow for extensive generalizations. The specific question to be answered is whether graduate study in the clinical subjects is essential for the preparation of teachers in dentistry.

This question could be answered easily with a simple "yes" but it is certain you wish a fuller view of the background for any belief in this regard. The initial concept is that the clinical teacher is in the first, second and last place *a teacher*, and that all of the concepts stated so eloquently by Dr. Glenn Frank and others before and after him apply in full force to the clinical teacher. As a matter of fact, it appears clear that the demands of our times require new and more exacting approaches through the application of basic science to the clinical practice of dentistry, if dental education is to keep abreast with older fields of education and with its own specific needs.

Occasional remarks by preclinical science teachers, as well as by freshmen dental students, give cause to wonder whether there may not be basic reasons why dental students, more so than medical students, question the need for the preclinical medical sciences. While attitudes may vary from school to school, it is not uncommon to find preclinical science teachers asking why dental educators desire to have their students thoroughly grounded in the preclinical sciences when it appears there is so little application for their use. This is a pathetic fallacy on the part of both the dental student and the preclinical science teacher. It is a fallacy for which we in dentistry, particularly at the clinical level of teaching, may be responsible.

For the dental student, more than for the medical student, too much of the basic science is learned and lost. Diabetes, nephritis, and anemia are understood only in biochemical terms.<sup>2</sup> Thus, the teacher of biochemistry gives a good accounting of these diseases in the freshman year. Glandular and deficiency diseases are likewise problems in biochemistry, as are the hormonal and vitamin disturbances. These disease syndromes are to be encountered repeatedly by the medical student in his clinical years and throughout his training and practice, while the clinical training and experience of the dental student bear too sparing a relationship to the basic preclinical medical sciences. It is fair to state that unless a clinical teacher in dentistry has had extensive graduate education, his employment of the basic sciences in instruction is likely to be both limited and uninspiring. The language of the preclinical

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<sup>2</sup>Thompson, David L.: "Biochemistry in Relation to Basic Science Teaching," *J. Dent. Educ.*, 6, 285, April 1942.

sciences fails to carry over sufficiently into the routine clinical diagnoses and treatments of oral disease, as it does in other bodily and systemic disorders. There is no justification for this being the case except for our dereliction and inadequate concept of the needs of clinical instruction.

The major concepts which have been carried over successfully for the dental student have been, to a large degree, those primarily in the realm of mechanical, technical, and empirical arts. This is not to be construed as criticism, but as an observation that the curriculum at the clinical level is so loaded with art and time-honored practice procedures that little room has been left for extensive scientific excursions into the realm of diagnosis and treatment so that science might be more fully applied to dental art.

In discussing a "Clinical-Biological Science Correlation Project" carried out at Tufts Dental College, in the early forties, Dr. Zander said in part ". . . the student has to be brought to realize that there is an interaction between scientific principles and clinical practice. . . . Therefore, it becomes the particular responsibility of clinical teachers to emphasize the relationship between the sciences and dental practice so that the student's training will enable him to evaluate new proposals and to utilize worthwhile information as it becomes available and applicable to his practice."<sup>3</sup> Assuming that Dr. Zander's conclusion is correct, namely, that it is the responsibility of the clinical teacher to teach the relationships of basic science to clinical practice, it then follows that the clinical teacher must be well-grounded in the basic sciences involved in his field. It may be added that it is more advantageous for him and the student if his education extends somewhat beyond that of the one he is to teach.

Dr. Blauch and associates describe, in part, equipment required for good teaching as follows: "When one considers the equipment which a teacher must possess, he usually thinks first of scholarship, that is, a mastery of the knowledge and skill which is to be taught. This equipment is absolutely essential; without it the blind try to lead the blind, the ignorant attempt to direct others who are likewise ignorant. Surely it is not possible for one to teach his students adequately unless he himself has first become a master of what the students are called upon to learn.

"But it is not enough that one shall know the subject matter he teaches; he must have gone far beyond this point. . . . In short, he must have reached the point where he is no longer a mere imitator of

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<sup>3</sup>Zander, H. A.: "Clinical-Biological Science Correlation Project," *J. Dent. Educ.*, 8, 198, Feb. 1944.

others or a dealer in second-hand wares, but where he speaks in his own right and from first-hand direct experience in his field of learning."<sup>4</sup>

It might be asked at this point, who should assume the major responsibility for teaching in the clinical branches of a dental school? Certainly, it should not be the average dental practitioner with no additional education other than that afforded by a successful practice. The average practitioner is no more qualified to assume a major role in clinical instruction than is a high school graduate to undertake a major responsibility of teaching in a high school. Most school systems require not only that the high school teacher be a college graduate but that he shall hold a master's degree, which is six years beyond the high school. How simple we must appear in the minds of other educators when we try to get by with the D.D.S. teaching the D.D.S.! This is truly the near blind leading the near blind.

In addition to the possession of skill in the art and practice of dentistry, clinical teachers must constantly point out significant, basic, scientific relationships forming the rational of the art and practice of dentistry. This is the task of people educated in the science as well as in the art of dentistry. This means that the major instruction in dentistry at all levels becomes that of a profession itself. Teaching is a profession.

In a chapter of a monograph edited by Dr. Malcolm W. Carr of New York, Dr. Harlan H. Horner, former Secretary of the Council on Dental Education, forecast an improved procedure for the choice of dental teachers in the future. These are excerpts from what he wrote:

"Clinical as well as basic science teachers will be chosen in the future in the light of their general education, their fitness to teach, their instinctive interest in scientific inquiry, and their disposition to consider graduation from a professional school as the beginning rather than the end of learning.

"Professorial rank and title will be guarded more zealously, will not be given except as a badge of successful service, and rarely, if ever, will be awarded to anyone not making a career of teaching.

"The choice of part-time teachers will turn upon accomplishment and distinction rather than upon location and convenience.

"Dental schools and dental faculties will come into their own in all the perquisites and advantages of university life only in the degree to which the teachers conceive of dental education as a university discipline and constantly seek to maintain and promote it on that level."<sup>5</sup>

The last of these "forecasts," which I understand to have been considered and accepted as a part of the belief of the Council on Dental

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<sup>4</sup>Blauch, L. E., and Associates: *Teaching in Colleges and Universities*, Indianapolis, American Association of Dental School, 1945, p. 4.

<sup>5</sup>Carr, Malcolm W.: *Dentistry an Agency of Health Service*, New York, The Commonwealth Fund, 1946, p. 31.

Education, drives a mighty hard bargain. It is a clear and unshrouded acknowledgment, if not a declaration, that our requirements and choices of dental teachers have not yet generally met full university acceptance. Moreover, it declares that complete acceptance in the future will be contingent upon the extent to which dental teachers consider and treat their responsibilities as academic disciplines. This raises a serious question for those who would universally dilute teaching in the clinical branches by any system which will require that the teacher produce part of his income through various means of outside or private practice.

Dental education today is a formidable profession. It has come a long way since the inauguration of the first university dental school at Harvard in 1866, whose purpose, in part at least, was to develop science in the curriculum. Since those early pleas of the late nineteenth century to "raise the standard of dentistry and make its reputation as a scientific specialty of medicine, not a manual art,"<sup>6</sup> great strides have been made. Not only has dentistry itself become well organized and come to support research and education on a high level, but universities have shown progressively increased interest and confidence in dental education by constantly expanding faculties, faculty status, and facilities. Research is becoming more and more a regular part of a dental school program, with teachers and students better prepared for the enriched educational opportunities.

But in spite of the progress, there are tenacious carry-over problems yet to be solved. The belief persists, and it is not without support, that far too much emphasis is placed upon the technical aspect of our educational program<sup>7</sup> (echoes of the eighteen nineties!). We no doubt fail, to an uncomfortable degree at least, to honor the basic sciences, which are proclaimed to undergird all of our clinical procedures. We do this by concentrating on practices and procedures to the neglect of science. There is yet the temptation of junior and senior promotions committees to place far too much emphasis upon bridges, inlays, and appliances for promotion or graduation, as compared with the emphasis put upon the literature, basic science applications, or theory. Student failures at the junior and senior levels are on points and pieces—rarely on poorly written or plagiarized themes and theses. Unless the teachers primarily responsible for clinical instruction are themselves educated in the disciplines desired for clinical students, there can be no adequate tutelage at this level. Graduate education is the only answer. It will

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<sup>6</sup>Gorgas, F. J. S., and Grady, Richard: *The American Journal of Dental Science*, Baltimore, Snowden & Cowman Manufacturing Co., 1895, p. 303.

<sup>7</sup>Johnson, A. Leroy: *Dentistry As I See It Today*, Boston, Little, Brown and Co., 1955, p. 36.

not be found in internships and residencies. Students are only made more skillful in these situations.

One of the serious omissions of this discussion has been that of the part-time clinical teacher, and that of the teacher who gives essentially full time to his teaching while he carries the load of a "limited" outside practice. There is no difference in the need for the preparation and training of these teachers if they assume any major role in instruction. They deserve to be subjected to the same rigid disciplines of qualifying for their posts, and they deserve due recognition from the universities for that portion of service they do give. The big problem is when the university reduces its expense of dental education by the employment of large numbers of part-time teachers, without pay or only at token salaries. The university also in this instance will likely be unable to place specific demands upon the qualifications which these teachers present. It would be most impractical to say that all teachers of major responsibility in instruction must be full time, for circumstances, traditions and beliefs in many areas would prove the concept untenable. It is believed, nevertheless, that instruction in clinical dentistry, as in all other branches, will be handled on a higher academic and professional level in direct ratio to the extent to which those primarily responsible for instruction devote their time and substance to the development of themselves as professional teachers. This means continuation study and application, which is not easy. It likely will not be financially rewarding, but it is what dentistry needs.

With fitting humility, may I refer to our program of faculty development at Howard University. By no means do we point to the program as a "mission accomplished," but there is encouraging progress toward the desired teaching skills as a result of the stress placed upon graduate education. In the early 1930's, the administration advised faculty members that one of the most important criteria for promotion in rank would be the achievement of university credit for bona fide graduate study. The position was taken that postgraduate courses in dentistry varied so much in their content and disciplines that they would not be cited as criteria in recommending teachers for promotion. With the encouragement of several interested dental schools, by 1936 seven of our teachers, largely at their own expense, managed to achieve master's degrees for graduate work related to their fields of instruction.

The late Dr. Louise C. Ball (A.B., D.D.S., Ph.D.), Trustee of Howard University, shared deep convictions with the administration relative to the possibilities and wisdom of graduate work as an important need

for the development of Howard's dental faculty. Upon her death, it was found that she had bequeathed a large part (approximately \$400,000.00) of her estate to the perpetuity of the program specifically designated for graduate education of faculty and alumni of the College of Dentistry. Since this bequest was made in 1946, nineteen teachers have received Louise C. Ball Fellowships, through which eleven have earned graduate degrees, five certificates of proficiency in graduate study, and three opportunities are currently being pursued in graduate schools. Dr. Ball's bequest, therefore, has proved more than a mere stimulus to a program launched long ago on conviction and hope only—it has now become the program.

Historically, it has been the custom of deans in this organization to "pelt" each other with questionnaires when asked to write or speak on subjects of the nature of this address. In this instance, you have been spared such infringement on your personal lives during this busy time of the year, largely because I knew not what questions to ask. I would have feared the replies even more than your spontaneous condemnation which now I am prepared to face. However, in lieu of a generalized survey, a sampling of the live and uncensored testimonies of those who are devoting the major part of their professional careers to dental education in our faculty is valuable indeed in assessing the importance of advanced study to clinical teaching.

The following statements express the personal viewpoints of the heads of departments of the College of Dentistry:

**ORAL MEDICINE**—Raymond L. Hayes, A.B., D.D.S., M.Sc.

"Clinical teaching demands a continuity of the correlation and application of knowledge learned in the preclinical years to clinical situations for the dental student. Without this continuity the clinical teacher merely checks the student's work product and fails to teach. The clinical teacher therefore must have a thorough knowledge and understanding of the basic principles and facts relative to the physiological and pathological processes involving the oral and dental tissues as well as a thorough knowledge of dental materials and techniques. Only through graduate training will a thorough knowledge and correct understanding of this basic information be obtained. Also, only through a properly directed graduate training program which aims to improve one's teaching ability as well as his knowledge of his particular field of study will the clinical teacher emerge better prepared and equipped for the role of efficiently imparting this knowledge in its correct relationship to the clinical problem for the dental student."

**ORAL SURGERY**—John A. Turner, S.B., D.D.S., M.A., Certificate of Proficiency in Oral Surgery, Diplomat of the A.B.O.S.

"It is inconceivable that one aspiring to be a teacher of clinical Oral Surgery should not regard graduate study as a major requisite. In the



preparation of a teacher in this area, it is invaluable, because in the graduate program the aspiring teacher has his best opportunity to review and get the latest concepts in the basic sciences which underlie the indications for surgery, and he also has the opportunity to become more proficient in surgical techniques. During the undergraduate period the basic sciences often are taught as entities, but in the graduate program they are correlated and may be spoken of as applied courses.

"The student should not be allowed to entertain the idea that surgery is purely a manual and instrumental procedure. The teacher of Oral Surgery, therefore, must possess thorough knowledge of anatomy, pathology, pharmacology, and physical diagnosis which must be kept in his focal consciousness, so that he is able to make application when indicated and be prepared to do incidental teaching.

"When a student enters the Oral Surgery clinic, he has been away from some of the basic sciences for one or two years. Some of the facts he will have to recall with the aid of the teacher who also must demonstrate the application of anatomy, pathology, and other basic courses to the cases at hand. These with the surgical techniques constitute complete clinical teaching. Thorough preparation for this complete process requires that prospective teachers have sufficient graduate study to qualify themselves for their responsible tasks."

#### OPERATIVE DENTISTRY—Herman E. Gaskins, B.S., D.D.S., M.Sc.

"It is my firm conviction that graduate training for clinical teachers is a necessity. The development of dental education has reached a point where provisions should be made to prepare adequately the persons who will be the future members of dental faculties. The area of study that should be included in the preparation of teachers in dentistry is debatable. It would seem that the major part of the time should be devoted to the specific field in which the persons later plan to teach. This should be augmented by intensive study in the area or areas in the basic sciences that are closely related to the specific field of study for how else can there be a thorough correlation of the clinical phases of dentistry with the basic sciences unless the teacher is competent in both areas. Finally, there should be some time devoted to methods and procedures and to educational measurements in higher education. The only way I can see that this can be done is by regular graduate training."

#### ORTHODONTICS—Leonard A. Altemus, B.S., D.D.S., M.Sc.

"Graduate training in Orthodontics is absolutely necessary for clinical teaching. The undergraduate curriculum is so crowded that it does not give the dental teacher a thorough grounding in the basic concepts of growth and development which are fundamental to all orthodontic procedures. The scientific application to therapy of basic anatomic, histologic and physiologic facts are the daily routine, and a working grasp of these facts can only be gotten by intensive graduate study."

#### PEDODONTIA—Maria Silberkweit, D.M.D., D.D.S., M.Sc.

"I began teaching Pedodontia just after graduation and then soon left to pursue graduate studies. The best description of the difference before and

after is like seeing an object in a fog and then in a bright light with clear outline.

"It is like moving in a small circle, being somewhat narrow-minded and believing there is the end and that the knowledge acquired is sufficient; then, after graduate studies seeing the horizon wide and far away. There is a feeling that one has to go a long way and that one knows so little and there is so much to learn.

"The enthusiasm for further knowledge develops with graduate studies; personal contact with men of great value in the field stimulates for further work and development; a graduate student acquires skills in practical work, learns the recent achievements in this respect; graduate work crystallizes the knowledge previously acquired and adds new knowledge; I learned to think originally, to read literature and evaluate it critically; I learned to express thoughts and arrange them; there developed an understanding of child psychology and an ability to manage children; there is an introduction into research. The principles of research are learned and one can further develop in this respect on his own.

"In other words, a dentist gets mature. He gets a good start to develop his potential abilities. It helps to a certain degree an inherent ability and an instinct and love for teaching. It is probably a very important adjunct to training, but principles of teaching should definitely be included in graduate studies for dentists.

"A dental teacher should not become a narrow specialist. It decreases his value. He should work mainly in his specialty but to a certain degree be on rotation. It is especially true for certain branches of dentistry.

"Only after taking advantage of all merits of graduate studies, supplementing them with a course in teaching and keeping in constant contact with basic science and other branches of dentistry is a teacher able to stop being a mechanic and will be able to progress to correlate his teaching with basic science and the entire field of dentistry."

#### PROSTHODONTIA—Percy A. Fitzgerald, D.D.S., M.S.D.

"Having been a practitioner for seven years prior to my entering into the field of dental education, and having taught four years before pursuing graduate study, my answer to the question, 'Is Graduate Study in Clinical Subjects Essential for the Preparation of Teachers of Dentistry?' is, unhesitatingly, yes. Not only does graduate training reveal the concepts, methods, and procedures of teachers in a new or different environment, but the clinic participation done in conjunction with the research problems develops a more skilled operator and a better appreciation and understanding of the specialty in which one is interested. The fact that it is necessary to review the dental literature in graduate work acts as a stimulus to further investigative reading, which increases one's knowledge in a broader scope. Also, graduate study develops a keener interest and understanding in the correlation and application of the basic sciences with the clinical phases of dentistry."

CLINICAL DENTISTRY—Joseph L. Henry, B.S., D.D.S., Ph.D., Superintendent of Clinics

"Graduate training in Oral Medicine and the basic sciences has proved to be of great value to me as a clinical teacher. A comparison of the teaching methods and procedures that I used before and after graduate training has made me increasingly aware of the benefits derived from advanced training. These benefits may be summarized as follows: Provided a great impetus to creative thinking in relation to old, new, and untried clinical procedures; supplied me not only with the *whys* to many of the things that I knew *how* to do, but also furnished the manner in which these fundamental biologic correlations could be imparted to my students; allowed me to learn techniques and methods first-hand from eminent authorities who had long years of experience; produced greater mastery of routine procedures; imparted a vast broadening of my scope of knowledge about and evaluation of different acceptable methods of treating similar cases; stimulated interest in and provided training in research.

"I also learned many things that have been of immeasurable value in my didactic endeavors. Such things as how to lecture, how to motivate students, how to evaluate textbooks, how to contribute to the literature, how to use visual aids and how to employ other teaching adjuncts properly; these and many other treasured benefits I deem directly attributable to the training I received while pursuing graduate studies."

In addition to these personal views, it is pertinent, to a fair appraisal of the place which graduate training holds in the minds of the entire faculty, to cite the action taken at a faculty meeting of the College of Dentistry on November 14, 1949, in which it voted the approval and adoption of specific criteria for promotions and appointments to the several ranks, based on the following categories:

1. Preparation (academic)
2. Teaching efficiency
3. Research and creative activity
4. Professional standing
5. Cooperation

As an exhibit of the details of the general criteria, there are in the appended addendum\* the specifics for the associate professor. Other ranks were omitted because of limited time. Be assured, however, that these criteria were not handed down as an ultimatum from superiors. They voice the belief of the entire faculty—instructor to professor—that scholarly preparation and achievement are mandatory for effective teaching, clinical or otherwise.

As responsible administrators, we can in no sense be oblivious to the many practical problems involved in demanding such "hard and fast"

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\*See page 53.

requirements for the development of "the great teacher" in clinical dentistry. Nevertheless, that which is worthy of the designation of a learned profession must be built upon a future of definiteness of purpose, which frequently requires difficult and often lonely decisions. The pathway we follow in the development of dental teaching as a worthy and separate profession will be determined by the wisdom of our choices and the firmness of our convictions.

### ADDENDUM

#### CRITERIA FOR APPOINTMENTS AND PROMOTIONS

College of Dentistry, Howard University

Associate Professor of Dentistry

#### I. Preparation

- A. In addition to the L.D.S., D.D.S., or D.M.D. degree
  1. The M.S., M.Sc., or M.S.D. degree for graduate work in the field of dentistry or some field related directly to dentistry, or
  2. The attainment of a Certificate of Training on a graduate level in some field of dentistry, after completion of an approved graduate course, in a university wherein catalogue descriptions of the curriculum and individual course content prove the course, in time and content, to be the same as that required for the Master's degree in other approved schools for graduate study, or
  3. Certification of a specialty board approved by the Council on Dental Education, or
  4. M.D. degree and approved board in medicine for a teacher of physical diagnosis (a teacher in another school will hold the same rank in the dental school).
- B. For the faculty member who holds neither the L.D.S., D.D.S., or D.M.D. degree—e.g., a research professor or pure science teacher—the Ph.D. or D.Sc. degree
  1. While we do not now have a teacher in the dental faculty without the professional degree of D.D.S., who devotes his time to research and instruction in the basic fields of dentistry, our future growth will require an addition to the staff of a person or persons whose scientific background in certain fields (such as, chemistry or physics) is authoritative. Such a person, we feel, should hold an academic degree equivalent to the Doctor of Philosophy. Many faculties are now engaging physicists on their staffs to teach and to do research in dental materials. Some have engaged chemists to do research in certain fields requiring extensive knowledge of chemistry. Any person so engaged, therefore, in the faculty of dentistry should be a person who has achieved the doctor's degree or the equivalent training.
  2. It is assumed that with increased maturity and development the associate professor will be able to qualify for rank of professor. Additional experience in teaching and research, coupled with improvement in scholarly capacity, should prepare him for promotion to full professor.

## II. Teaching Efficiency

- A. Emphasis is placed on the matter of teaching efficiency which must be measured, for the most part, in abstract terms, such as, zeal, industry, devotion to duty, punctuality, dependability, interest in students, ability to organize work, general scholarship, ability in enlisting student cooperation and handling of disciplinary matters. An associate professor must have demonstrated consistently satisfactory performance in this criteria.
- B. Normally, promotion in rank will progress in regular sequence of ranks. However, skipping of ranks will be allowed in exceptional cases embodying all of the following:
  - 1. Outstanding ability as a teacher
  - 2. Superior scholarship in graduate study
  - 3. Excellence in clinical skills or in pure research investigations
  - 4. Devotion to the study of dentistry, accompanied by diligent efforts toward improving the art and science of dentistry in the College of Dentistry

## III. Research or Creative Activity

- A. Independent investigations and contributions to the literature may well be stressed in consideration of teachers for promotion to the rank of associate professor. It is felt that an associate professor should be author or coauthor of at least one article published or accepted for publication in a reputable scientific journal.

## IV. Professional Standing or Performance—Including Local or National Contributions

- A. Membership, attendance and active participation in learned societies are important in the consideration of requirements for the rank of associate professor. It is felt, in view of these facts, that the associate professor, prior to promotion to the rank should have contributed to the local or national organizations in dentistry through at least two competent appearances as clinician or lecturer.

## V. Cooperation

- A. The matter of cooperation is considered to be basically important to the promotion of a teacher. In any university cooperation in the execution of assignments, in willingness to assume responsibility, and in the performance of duties, both teaching and administrative, are necessary. Cooperation and collaboration with one's colleagues are essential for the unity and welfare of the College of Dentistry as well as the University as a whole. Therefore, for promotion to the rank of associate professor, one must have demonstrated the ability to cooperate and collaborate with others in the faculty.