

# JOURNAL

## AMERICAN COLLEGE OF DENTISTS



EMPLOYMENT IN DENTAL OFFICES

THE DENTAL EDUCATOR

FELLOWSHIPS CONFERRED



## *The Objectives of the American College of Dentists*

The American College of Dentists in order to promote the highest ideals in health care, advance the standards and efficiency of dentistry, develop good human relations and understanding and extend the benefits of dental health to the greatest number, declares and adopts the following principles and ideals as ways and means for the attainment of these goals.

(a) To urge the extension and improvement of measures for the control and prevention of oral disorders;

(b) To encourage qualified persons to consider a career in dentistry so that dental health services will be available to all and to urge broad preparation for such a career at all educational levels;

(c) To encourage, stimulate and promote research;

(d) Through sound public health education, to improve the public understanding and appreciation of oral health service and its importance to the optimum health of the patient;

(e) To encourage the free exchange of ideas and experiences in the interest of better service to the patient;

(f) To cooperate with other groups for the advancement of interprofessional relationships in the interest of the public; and

(g) To make visible to the professional man the extent of his responsibilities to the community as well as to the field of health service and to urge his acceptance of them;

(h) In order to give encouragement to individuals to further these objectives, and to recognize meritorious achievements and potentials for contributions in dental science, art, education, literature, human relations and other areas that contribute to the human welfare and the promotion of these objectives — by conferring Fellowship in the College on such persons properly selected to receive such honor.



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## of the AMERICAN COLLEGE of DENTISTS

**A Quarterly  
Publication  
Presenting  
Ideas & Opinions  
In Dentistry**

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## ACD Journal—Fifty Years

The year 1984 marks the completion of 50 years of the publication of the *Journal of the American College of Dentists*. Volume I, No. 1, published in January 1934 initiated the distribution of a quarterly dental journal of distinction which, over the years, has remained free of outside ownership and proprietary support. John William Gies, Ph.D., founder and first editor of the *Journal*, described its role in an editorial printed on page 1 of the first issue:

"The usefulness of a society depends largely upon its cohesiveness and solidarity. Constructive criticism and concerted action among the members of an organization are difficult, if not impossible, unless the members either participate actively in meetings, or are promptly kept well informed regarding current transactions. It is practically impossible for a majority of the members of a large and growing national society, such as the American College of Dentists, to attend its meetings. The College has lacked effective means, during the intervals between convocations, to keep the Fellows in close and animated touch with its affairs. The Committee on Education, Research and Relations, noting these conditions, recommended that a journal be published for this purpose. The recommendation was unani-



Gordon H. Rovelstad  
Guest Editor

mously approved by the convocation at Chicago, in August, 1933. The *Journal of the American College of Dentists* embodies this recommendation and this purpose.

"This *Journal*, beginning its career as a quarterly and aiming to promote the welfare of the College, will keep the Fellows intimately aware of the fact that they are active units in a virile and progressive organization, which was created for the general improvement and extension of all phases of oral health-service, and for the continual advancement of dentistry as one of the most useful professions. Nothing that may further these objects will be foreign to the pages of the *Journal of the American College of Dentists*, which will grow with its responsibilities and its opportunities. We hope this *Journal* will also become a useful in-

fluence for the enhancement of lay understanding and appreciation of dentistry's important share in the conservation of the public health.

"This *Journal* supplements the existing resources in dental journalism. It represents a conviction that periodicals issued in the name of and purporting to represent dentistry—and as such seeking the patronage of dentists—should be published by accredited representatives of the dental profession, and conducted in behalf of the public and dentistry under conditions of undoubted financial disinterestedness."

Today, according to the minutes of the Board of Regents annual meeting which was held in Atlanta, Georgia in 1984, the *Journal* is described as "one of the most prestigious journals in dentistry ... with a circulation of approximately 5,000 copies. Being indexed by the Index to Dental Literature of the American Dental Association as well as the National Library of Medicine and reproduced by University Microfilms International, the *Journal* reaches the profession worldwide."

For 50 years, the *Journal of the American College of Dentists* has been able to offer leadership in quality of editorials, essays, and scientific articles with assured independence and professional integrity.

Gordon H. Rovelstad



# LEGENDS OF OPERATIVE DENTISTRY

**Charles M. Stebner\***

History tells us that ancient Philosophers contributed thoughtful gifts which enabled us to build the foundation for the noble humanitarian professions, particularly, Medicine, Dentistry, Nursing, and Law. A notable beginning was made by Confucius during the fifth century B.C. Greater headway in humanizing man occurred during discussions among Hippocrates and his fellow Greek philosophers. Then and there the foundation was laid upon which we have built with compassion our modern health care programs. Cicero, first a Philosopher, gave the Romans a humane base for jurisprudence during the last century B.C. Recorded history of early discussions from these beginnings pointed our societies toward humanitarian idealism.

Although the word "philosophy" means different things to various people, we should appreciate these concepts in every walk of our lives. Even today modern philosophers are speaking, writing, and thinking in a manner which will influence future societies. The problem is that their faint voices are seldom heard, nor receive positive support. Our very existence may depend upon the attention we give to Philosophy. I wonder which particular ethic, spawned by Philosophy, will guide us in the methods we may use, or misuse, atomic manipulation.

It is possible to solve some of dentistry's current problems, I think, with sound philosophy. A good beginning might be to evaluate our own personal doctrines. Let us ask, what lifestyle and moral base do each of us want for our families, and what do we want to accomplish for our patients? We cannot avoid facing these important facets of our lives. Too often, we tend to focus completely on the technical and economic areas of the practice of dentistry. However, as important as those areas are, we must not neglect the cognitive base. From the pens of historic philosophers are these thoughts. . . .

1. It is not the head merely, but the heart of the resolution which completes the real philosopher.

\*An address at Northwestern University, April 21, 1983.



Charles M. Stebner, DDS

2. Philosophy is the journey, theology is the journey's end.
3. Philosophy, when superficially examined, excites doubt; when thoroughly explored, dispels doubt.
4. Philosophy, rightfully defined, is nothing but love and wisdom.
5. Philosophy teaches us our duty to our neighbor.
6. Philosophy keeps doubt in reserve.
7. A man can command his principles; principles do not command the man. (Confucius)



8. Voltaire suggests that the purpose of philosophy is to discover what is good and what is true.

Which of these thoughts do you particularly like?

It is unlikely that a thinking person exposed to another's philosophy will adopt it completely. It should be a unique and personal part of each of us. All ideas are influenced by members of our family, by a teacher, a business or professional contact, by reading, watching television, or by personal experience—good, or bad; or by simple thoughtful perception. No two people share the same environment nor have the same genes. So, philosophies cannot be alike anymore than can our fingerprints.

We should keep our thoughts fluid and constantly grow in our unique personal principles. Certainly, we often mature philosophically by attaching ourselves to notable individuals of worthy conduct. I learned years ago that some of the greatest individuals in my profession were sometimes lonely and socially neglected, but they welcomed my companionship when it was offered. Those whom Northwestern University honors today as "Legends of Operative Dentistry" were fortunate to be near, and to learn from, fine men and great professionals. They added to our knowledge and techniques, but more importantly they helped to shape our varied philosophies. I name only a few of them. . . . Charlie Woodbury, Lester Myers, George Hollenback, Harry True, W.I. Ferrier, George Paffenbarger, and others . . . They were some of the Legends of Yesteryear.

Without that philosophical influence which was passed on to us, and the professional ethics it spawned, there would be little standing between the professional person and their relatively uninformed patients. Then the personal welfare of the man on the street probably would not be considered very important. The masses of humanity have long relied upon our professional honesty and integrity. In times past we heard our patient say, "Go ahead, you're the doctor!" It was a testimony to the doctor's unimpeachable philosophy and ethics. All the professionals were similarly respected in the community.

But every phase of our society and lifestyles is rapidly changing. If, in the transition, our professional leaders neglect to foster the philosophy we inherited, then both the patient and the profession will suffer.

It is sad to note that many of the better things in society are subjected to negative changes. Even though the task is unpleasant we should evaluate some of these changes which have surfaced during the last decade. Recently, on a television program I heard a doctor advise his audience to question

## Oath

*"I will look upon him who has taught me this art even as one of my parents. I will share the fruit of my experience with him, and I will encourage his call for aid. I will regard all young dentists as my own sons, and I will offer them my knowledge and technics. I will teach by every means I know those valued lessons that were passed on to me by my predecessors.*

*"The regimen I shall adopt shall be for the benefit of my patients according to my greater ability and judgment to protect and preserve their natural dentition. I will agree to no procedure which cannot be substantiated by sound professional judgment and scientific diagnosis.*

*"Whosoever shall enter my office shall receive the same consideration and service as my own flesh and blood."*

physicians and dentists before being subjected to possible unnecessary radiation. Unfortunately, such advice has become valid. Scientific professionals understand that rather than treating disease we can instead sometimes cause severe illness. We must prescribe radiography with caution. It is horrible to think that anyone would use an x-ray machine either out of ignorance or for selfish motives. If neither ignorance nor profit are factors then such advice to the public would not be necessary.

Several years ago I was disturbed when the idea of preventive dentistry nearly became a fetish among some in our profession. A few individuals swore that they would never extract another tooth; while others would not even examine a distressed patient until auxiliary personnel had made a complete set of radiographs and study models. Some even insisted on several preliminary appointments to teach the proper use of non-waxed dental floss. For these procedures patients often paid a minimum of \$75.00 and only then would the doctor condescend to make an oral examination. It is also disturbing that many physicians, for even a minor complaint, have refused to see a distressed individual until complete laboratory procedures are processed and paid for.

A humanely sound philosophy demands that every patient deserves prompt attention when there

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**In times past we heard our patient say, "Go ahead, you're the doctor." It was a testimony to the doctor's unimpeachable philosophy and ethics.**

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is a complaint of hemorrhage, pain, obvious acute infection, or even psychological trauma and embarrassment because an anterior tooth is suddenly missing. In these situations simple humane professionalism is in order. Emergencies should be treated promptly as most of these situations often require only a single x-ray, opening a putrescent pulp, treating a dry socket, or performing a simple extraction. In this way we may prevent another sleepless night for the patient's family. During these special times we can serve better with an instrument in our hand rather than with the pen writing prescription, which is often a cop-out. We all agree that the conscientious, complete examination, usually supported by multiple x-rays and laboratory findings is in order, especially when time permits and other conditions are unconfirmed.

During my 50 years of dental practice I have been close to many excellent operative dentists. Thinking of them, and viewing the names of those with whom I share this program, I wonder what specific characteristics they all have in common. They all love to teach and pass on information they have learned from others, including ideas and techniques each has developed through experience and research. They share a philosophy which has been defined as, "a rational investigation of the truths, knowledge and conduct". This is all related to Ethics, which has been defined as a body of moral principles and values. There is no doubt that each of them has approached our profession with the holistic theory.

Fine professionals, like the others on this program, have a common characteristic and this is a basic ethic which guides them. That ethic is a dedication to the general health and welfare of their patients. I find this principle to be constant among these men, even though their special interests and talents vary, as do their lifestyles. The families and the communities from which they come are also different. Yet, the ethical principles each have lived and worked by are parallel, because the bottom line is a dedication to the general health and welfare of their patients.

It is interesting to analyze why people are motivated in different directions. No doubt a small percentage of a population is driven by antisocial motives such as greed. Some would bend accepted behavioral patterns to get money by any means, and some of them have even graduated from professional schools. The ideal solution would be to weed them out before graduation. It would be great if philosophical and motivational characteristics could be determined scientifically to decide who should not be admitted into professional schools.

Those professional colleagues of whom we are proud, share the philosophy of desiring an opportunity to help their fellow man. Some people are motivated by hunger, and that is a powerful force. It includes more than hunger for food. Sometimes it is hunger for a better life as someone with an underprivileged background would understand. Shakespeare noted that, "Philosophy is the sweet milk of adversity". Positive influences of family or friends, and also role models of worthy professionals, are examples of strong motivators.

If one examines philosophical concepts it will be noted that there are many grey areas between philosophy, ethics, and religion. In times of personal tragedy, religious inquiry often solves problems.



Two questions many philosophers discuss are, "What is the supreme plan for our existence?", or "What is the reason for each of us being born"? For a simple mind like mine, I have a simple answer. It is the progressive search of man for Utopia, the desire for a better life for all. That is a goal which can only be achieved by small progressive steps and to which everyone can and should contribute.

Since the first man appeared, he worked to improve his family's environment. He no doubt wanted to improve his children's lives, and they likewise wanted something better for his grandchildren. True professionals and philosophers have also striven for better lifestyles for their neighbors. In our holistic approach to dental practice we are now trying to endow our patients with improved dental health, with more attractive smiles and improved occlusions. We want them to masticate food for their pleasure, and for the health of their bodies.

The utopian drive suggests that we share our enthusiasm and knowledge. If it were not so we would not have conducted research, taught classes, or encouraged others. We would not have added to professional literature for the benefit of our contemporaries and posterity.

Dentists, as a group, are near the top of the list of those who choose to commit suicide. Our profession is one of the most demanding. It is perhaps unfortunate when a pure perfectionist studies dentistry, particularly operative dentistry. Those of us who have restored, or replaced, diseased or broken portions of a tooth know that we cannot equal the beauty and integrity of nature's original product. Though, before we practice too much deprecation, we can be proud that we have excelled those who make the plastic eye, or artificial limb, or even an artificial heart. Usually our restorations function very well indefinitely. Yet, our best restorations pale in comparison to nature.

The pure perfectionist who does his very best is never satisfied. It is frustrating that the achievement of perfection is unattainable. Sanity demands a compromise. To survive one must settle for becoming a practical perfectionist. Although we work diligently toward perfection, we must be satisfied to say at the end of the day, "Today I achieved the very best I was capable of, and tomorrow I may get closer to perfection". Then we must block out all guilt, relax, and prepare for a new effort tomorrow.

The service to one's neighbor must reach beyond

the dental office. It was an English author, Southworth, who said, "Philosophy teaches us our duty to our neighbor". Because we are fortunate to be educated beyond the average, we have a responsibility to work for a better total society. It is an inborn characteristic of most Americans to wish that their children and their contemporaries would have a better life than they themselves experienced. A slight step towards Utopia? Nightingale (#5432) said, "Health is a state of moving toward life; moving

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**Health is a state of complete physical, mental and social well-being, and not merely the absence of disease.**

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toward physical, mental, and social well-being". It is interesting to note that all on this panel were young men who shared the Great Depression of the 1930's. Today, some of our unemployed, about 50 years later, are experiencing similar times, but fortunately the pain is not so severe, nor so general as during the depression. I believe that the past generations were forced to be more enduring and self-sufficient. Sympathetic philosophies seem to be born in tough times, and also powerful motivators are then produced. In the past, individuals simply felt we were having a streak of tough luck and we had to work our way out of it. Young dentists then found nothing unusual about the hard work of operative dentistry. The large gold foil operation seemed an easy chore in comparison to the manual labor of the depression years.

An important part of a professional person's philosophy is empathy, the ability to identify with the patient's needs and problems. I remember, during my earliest years of practice, of a man who sat in my dental chair, and his ethnic accent was familiar to my ears. He was a Swedish timber worker with whom I had worked as a laborer during the summers of my college days. My problem arose after the simple extraction of the tooth. All went well as we reminisced of the hard work we endured for the \$4.00 which we were paid for a ten hour day. But, I felt a stab of real empathy when he placed the usual fee into my hand—it was exactly four dollars! I wanted to return it to him, but his pride, and my need to pay debts prevented that action. I presume that my background has always kept my fees moderate.

It is obvious that the average young graduate

today has not experienced a difficult work-survival era. This helps to explain the great number of complete crowns laboratories now make, and also the few gold foils and direct inlays the dentist makes. Today an improved philosophical background might save the patient considerable tooth structure and money.

Egos? Yes, they are important. To be a top achiever one must think well of himself. When a man shaves in the morning it is good if he acknowledges, "Hey, you have talent, personality, and some knowledge". But there is a danger that the ego characteristic might grow so that the guy one is talking to in the mirror may stand there too long, and neglect fruitful action. A friend once criticized me for running each day to prevent a threatened coronary problem. He said, "Hell, Charlie, you are taking this health business too seriously. I'm not afraid of dying"! After about three seconds, I had my answer. "Gosh, Ed, I'm not afraid of dying either—I'm afraid of not living"! To simply exist is not the challenge, but to live an active, stimulating and fruitful life is. To do that requires a healthy body and a challenging mind. The World Health Organization has defined health this way; "Health is a state of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity". The philosophical ethic drives us toward utopian goals, and often directs the activities of the professional person even outside of the office. Many dentists, as they should, work relentlessly to improve the political, charitable, legal, religious, civic, educational life, and aesthetic climates of their communities and country. Though it would be well if during such activities one did not take himself and his projects too seriously. There must be an important place in life for fun, sports and humor. It is good therapy to make and hear laughter, cause a smile on a stranger's face, exercise, and to enjoy good music and literature, and to love and communicate with friends and family.

As part of the philosophy that many of us share there is a tinge of Evangelism. We want to convert others to the ideas which we think are worthwhile. Many years ago I walked through the University of Iowa Dental School Clinic. I noticed a student operating without the aid of the rubber dam, and I asked why he had not developed a clean dry field. He gave me one weak answer after another. When I countered each excuse with a valid point, I finally walked away. About twelve years later he wrote to me saying that he decided not to boast until he had

used the rubber dam at least ten years. Then he expressed gratitude because I did not ignore him.

We owe everlasting gratitude to the ancient Greek Philosophers who passed on to us humanistic ideas upon which was built our professional base. Hippocrates was the father of our Healing Arts and his ideas still serve mankind today. And until a few years ago he was revered and well understood in the Medical Schools of the western world. His OATH was memorized and sworn to by each medical student at the graduation exercises as the diploma was received. I fear that today we would have a difficult search to find a single student who has even read the OATH. The cold scientific and commercial aspects of Medicine, Law and Dentistry seem to have pushed Hippocrates and Cicero aside. Yes, I see advantages to the patients and clients if the professions were to return to their roots.

In 1954, while preparing a paper for a dental meeting, I wondered what Hippocrates would have said had he been a young dentist in America. So, I modernized his words and thoughts as closely as I could. This is the result, which I think could be the basis today for the Philosophy of every young dentist. Δ

#### Oath

*"I will look upon him who has taught me this art even as one of my parents. I will share the fruit of my experience with him, and I will encourage his call for aid. I will regard all young dentists as my own sons, and I will offer them my knowledge and technics. I will teach by every means I know those valued lessons that were passed on to me by my predecessors.*

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# EMPLOYMENT IN DENTAL OFFICES

## Another Perspective on Practice-Busyness

H. Barry Waldman\*

In the 1980's it has become an axiom when discussing dental practice-busyness to refer to the numbers of dentists who report empty patient schedules, decreasing numbers of personnel employed in practices and the great many graduates from schools of dentistry.

**Eighty percent of all general practitioners perceive that they are not busy enough in their private practices.**

**Editorial, 1983—JADA<sup>1</sup>**

**Staff salaries increase, total employees decrease.**

**Dental Economics—1984<sup>2</sup>**

**Do dental schools have moral obligations to inform potential dental students of the difficulties facing future practitioners? . . . I say yes. But is this being done? I say no, it is not . . . (What) is immediately needed . . . is the reduction of the number of dentists being trained.**

**My View, ADA News—1984<sup>3</sup>**

**Could it be that patients now have the luxury of increased numbers of practitioners from which to choose and they are being attracted to those dental offices that meet more of their personal and emotional needs?**

These views have become so pervasive, that even to raise the spector that they are either incorrect or self serving, is to risk the scorn of many. Nevertheless, the following presentation will present data which raises questions regarding these general perceptions of the health of dental practice.

### Practice-busyness

The September 1983 editorial in the Journal of the American Dental Association indicating that 80% of general practitioner's perceive that they are "not busy enough" in their private practices, refers to the results from the 1982 ADA Survey of Dental Practice.<sup>4</sup> A careful reading of the Survey (which reports information from 1981) actually indicates that 33.0% of solo general practitioners and 33.5% of independent general practitioners\* perceived that their practices were "not busy enough".

The 33.0% and 33.5% figures rep-

resent an increase from the 1979 Survey results when 26.0% of "one dentist" practitioners reported that their offices were "not busy"<sup>5,6</sup> Similarly, the 1977 and 1975 Survey reported the "not busy" status to be between 20.8% for general practitioners and 22.5% for "one dentist" practices.<sup>6,7</sup> It is of interest to note that in 1975, 48.1% of practitioners who were less than 29 years of age and 36.9% of those between 30 and 34 years, reported they were "not busy".

Thus, some decrease in practice-busyness (as perceived and reported by dentists) has occurred; although not at the rate reported in the JADA editorial. The difficulty is that the widely read editorial comments seem to corroborate negative

\*An independent dentist is an owner (sole proprietor, partner or shareholder in an incorporated practice) or partial owner of a private practice. The difference between independent dentists and solo dentists in the 1982 Survey is that the independent group includes dentists working in offices with one or more other dentists (owners and/or non-owners).

\*\*The 1979 Survey did not report practitioners by general and specialty practice in terms of practice-busyness and used different designations for practice arrangements. Similar problems of comparisons exist for the 1977 and 1975 reports. Comparison with previous published data for the 1973 and 1971 Surveys is not possible because of major methodological changes.

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economic data reported in other publications (e.g. Dental Economics).

### Employment in dental practice

The trade publication, Dental Economics, is distributed free of charge to all dentists. Because of the general format and material presented, it may be assumed that the items in the magazine's annual report on dental practice are reviewed by many practitioners. For example, "the results of Dental Economic's 1983 Practice Survey

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#### Practice-busyness always has been related to the doctor-patient relationship.

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show a trend toward less staff even though in some types of practices, expenditures for total staff salaries are increasing."<sup>2</sup>

While every effort is made by the publication to present an objective report of its data, it must be remembered that the respondents to the survey are *not* selected by any acceptable sampling procedure. All data are based on the information from practitioners, who for personal, professional or other reasons, took the time to complete and return the survey forms. (Such a procedure was discarded as unreliable by the American Dental Association during the 1970's, as a result of presentations in the Journal of the American College of Dentists.<sup>8-10</sup>)

The problems with reports by practitioners, who are not selected on some representative sampling basis, is that one can not be certain whether the responses are a true representation of the views of the overall population of practitioners. For example, are the respondent practitioners having particular difficult or favorable practice experiences and wish to complain or boast about their respective con-

ditions.

In actuality, more reliable information on employment in dental offices is available from the monthly study on national employment and earnings carried out by the United States Department of Labor.\* Contrary to the survey by Dental Economics, the Bureau of Labor Statistics reports a continuing increase in dental office employment throughout the late 1970's and early 1980's which generally mirrors the increases in personnel employment throughout the entire health industry.<sup>11</sup> (Table I)

While the 1981-1982 employment rate remained level for the total number of employed individuals in dental offices, the number of non-supervisory workers, (i.e. production personnel—dentists, dental hygienists, dental assistants, dental laboratory technicians, etc.) continued to increase each quarter since the late 1970's (except for one decline in the last quarter of 1979).<sup>11</sup> (Table II)

Changing employment levels over extended periods of time could indicate general changing patterns in dental practice, (e.g. the introduction of four-handed dentistry, high-speed techniques, large increases in the number of new dental practices, etc.). However, monthly and quarterly reviews permit a rather precise analysis of changing employment conditions which result from evolving economic conditions.

A further division of the employment data is possible by gender. Until most recently, virtually all

dentists were men, with women occupying other positions in dental practices. Throughout the late 1970's and early 1980's there has been little change in dental offices (and other respective health service locations) in the ratio of male and female employees.<sup>11</sup> (Table III) A review of the numbers of female employees in dental offices since the late 1970's indicates a continuing increase in each quarter.<sup>11</sup> (Table IV) Such a finding would tend to indicate that, it was the numbers of auxiliary personnel that increased.

In addition, the Bureau of Labor Statistics reports that, not only has the employment in dental offices increased, but the reported average number of hours worked per week by employees has remained relatively constant between 28 and 29 hours throughout the late 1970's and early 1980's.<sup>11</sup> (Table V)

As a point of information, during this same period, there was only limited change in minority employment rates in dental offices and other areas of the health industry.<sup>11</sup> (Table VI)

Finally, as reported in the Dental Economics survey, the costs of employees has increased. However, the hourly wages and weekly salaries, as reported in the ADA 1982 Survey of Dental Practice are not similar to the Bureau of Labor Statistics information. The average hourly wage for all personnel (not including employed dentists) for 1981 was \$8.58; \$241.56 per week.\* Bureau of Labor Statistics reports for all employees in dental offices

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\*Data are based on household interviews from a sample survey of the population 16 years of age and over. The survey is conducted each month by the Bureau of the Census for the Bureau of Labor Statistics. The information is collected by trained interviewers from a sample of about 60,000 households, representing 629 areas in 1,148 counties and independent cities, with coverage in 50 states and the District of Columbia.

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\*Average hourly and weekly wages (salary and commission for full and part-time personnel) was determined as a weighted average of all employees of independent dentists. Independent dentists constituted 93.2% of private practicing dentists. The assumption was made that the ratio of reported numbers of personnel employed by respondent dentists represented the ratio of all employees.



for this same period were more than \$2 less per hour and \$60 less per week.<sup>4,11</sup> (Table VII)

The difficulty that one has in reviewing data from surveys is to determine whether respondents provided information they:

1. believed the interviewer wanted or expected to hear,
2. felt would be in line with general trends of the time,
3. hoped would make a particular point (either positively or negatively),
4. hoped would effect the outcome in some desired manner, or
5. believed to be correct.

The perception that particular changes are needed could influence specific responses to questions of practice-busyness and personnel employment. For example, if the respondent's view was that, dental schools were producing too many graduates (i.e. potential competitors) (s)he might answer the survey questions in a manner to make these perceptions known.

#### Commentary

But the Viewpoint item in the ADA News on the immediate need for a reduction in the number of dentists being trained does not reflect the realities of change in dental education. Between 1978

and 1983 there was a decrease in the number of entering places in dental schools by over 1,000 students (from 6,301 to 5,274 places).<sup>12</sup> It is anticipated that the number of graduates from dental school will decrease from 5,756 in 1983 to 4,493 in 1990, and 4,358 in the year 2000.<sup>12,13</sup> Nevertheless, to most dentists caught in the maelstrom of changes in dentistry and the economy, the Viewpoint statement and others of this ilk seem to be an appropriate and rational direction that must be taken.

Despite the fact that between 1977 and 1981\* the annual total

\*Dental visit data were not collected as part of the National Health Survey in 1982.<sup>14</sup>

**Table I. Total number of individuals employed in health facilities: 1977-1983<sup>11</sup>**

	(In thousands)						
	1977	1978	1979	1980	1981	1982	1983
Dental offices	321	360	385	407	415	415	441
Physician offices	677	753	755	756	789	898	888
Hospitals	3,645	3,781	3,843	3,947	4,095	4,341	4,348
Convalescent institutions*	949	1,009	1,035	1,185	1,216	1,217	1,342
Health practitioner offices, other	75	83	84	85	82	84	na
Health services, other	632	687	747	806	864	855	na

\*In 1983, listed as nursing and personal care facilities.

**Table II. Number of non-supervisory workers\* in dental offices: quarterly, 1979-1983<sup>11</sup>**

	(In thousands)				
	1979	1980	1981	1982	1983
January	256.0	285.3	303.0	326.7	345.9
May	282.1	295.6	314.3	337.3	350.4
September	280.9	302.1	319.8	343.9	364.9
					372.7 (preliminary data for December 1983)

\*Production workers.

**Table III. Female employees in health facilities: selected years 1977-1983<sup>11</sup>**

	(Percent of all employees)			
	1977	1979	1981	1983
Dental offices	69.5%	66.5%	70.4%	72.7%
Physician offices	66.9	65.6	67.6	67.2
Hospitals	76.0	67.8	76.6	76.6
Convalescent institutions*	86.7	76.5	87.0	86.6
Health Practitioner offices, other	54.7	58.3	54.9	na
Health services, other	63.9	68.3	72.7	na

\*In 1983, listed as nursing and personal care facilities.

**Table IV. Number of female employees in dental offices: quarterly 1979-1983<sup>11</sup>**

	1979	1980	(In thousands) 1981	1982	1983
January	263.8	281.9	295.8	317.4	336.7
May	276.1	290.1	307.0	324.7	346.1
September	278.2	293.9	308.1	330.1	352.8

**Table V. Average number of hours worked per week by non-supervisory workers in dental offices: quarterly, 1979-1983<sup>11</sup>**

	1979	1980	Hours per week 1981	1982	1983
January	28.7	28.7	29.0	28.2	28.4
May	28.9	28.1	28.3	28.1	28.0
September	29.1	28.4	28.5	28.3	27.8
					27.9 (preliminary data for December 1983)

**Table VI. Minority\* employees in health facilities: selected year 1977-1983<sup>11</sup>**

	(Percent of all employees)				
	1977	1979	1981	1983	
				Black	Hispanic
Dental offices	4.0%	3.4%	4.1%	2.2%	2.7%
Physician offices	5.8	4.5	5.3	3.3	4.1
Hospitals	18.9	19.4	18.8	16.0	4.2
Convalescent institutions**	17.7	18.4	18.8	18.3	3.0
Health practitioner offices, other	1.3	3.6	3.7	na	na
Health services, other	13.4	15.9	19.3	na	na

\*In 1977, 1979 and 1981 minorities were reported as the combined category "Blacks and other."

\*\*In 1983, listed as nursing and personal care facilities.

**Table VII. Average earnings of non-supervisory workers in dental offices: quarterly, 1979-1983<sup>11</sup>**

	1979	1980	1981	1982	1983
Hourly Wage					
January	\$4.97	\$5.30	\$6.07	\$6.54	\$7.03
May	5.12	5.56	6.27	6.69	7.13
September	5.17	5.73	6.44	6.82	7.21
Weekly Wage					
January	\$142.64	\$152.11	\$176.03	\$184.43	\$198.95
May	147.97	161.80	177.44	187.99	199.64
September	150.45	162.73	182.90	193.01	200.44



number of dental visits by men and women of all age groups increased<sup>15,16</sup>, some practices have experienced many difficulties. Despite the fact that practice intensity (which includes providing more services and procedures per week) increased between 1971 and 1981<sup>17</sup>, some dentists may be having problems with the competition that has arisen as increasing numbers of traditional and commercial practice arrangements are established in their communities. Yet other practitioners seem to be thriving throughout the same period. For example, the dental equipment product industry increased its employment by 5.9% in 1982 over that of the previous year. Industry shipments of equipment and supplies were expected to increase by 4.6% in 1983.<sup>18</sup>

It may be that in this changed era of marketing and competition for the delivery of dental services, individual practice-busyness is a reflection of more than the economy and the number of patients and providers—although these ingredients are significant factors. Practice-busyness always has been related to the doctor-patient relationship. It is just that in today's competitive economy, this relationship takes on added meaning and significance. Could it be that the more successful practitioners (both the young and the more established dentists) have recognized the need to respond to a greater extent to the objective and subjective needs of their patients?

We each make our purchases in the general economy because of a particular objective *and* subjective sense of confidence in salespersons—be they advising us on the purchase of dental equipment or stocks and bonds. Could it be that patients now have the luxury of increased numbers of practitioners from which to choose and they are being attracted to those dental offices that meet more of their personal and emotional needs? Could it be that many of the less than busy offices have not met this challenge?

Practice-busyness is a concern of individual dentists and the profession. The necessity is that as the profession attempts to react to the changing environment for the delivery of health care, we must consider information from all available sources. Only then can we develop an understanding of all involved issues. Only then can the profession respond objectively and accurately.

### Addendum

In response to a letter from this writer to the editor of the *Journal of the American Dental Association* regarding the discrepancy in the percent of practitioners reporting a lack of busyness, (80% according to the JADA and 33% according to the Survey of Dental Practice) the Director of the ADA Bureau of Economic and Behavioral Research commented:

"The 80% figure represents the percent of all dentists who marked either of the last two categories (about practice, in the study).—Provided care to all who requested appointments and the practice was not overworked.

—Not busy enough, the practice could have treated more patients."

"The 33% figure represents those dentists who marked only the fourth category (not busy enough). In any case, the response to this question at the time the survey was conducted (Spring 1982) indicated that a significant number of dentists were practicing in offices that were not overworked and by implication believed they could have treated, at least, a few more patients."

*Journal American Dental Association*, 108:942, June 1984. Δ

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# A TREASURY OF DENTISTRY

Rodrigues Ottolengui

Gardner P.H. Foley

The honor of being designated as the outstanding dental editor of the twentieth century is well deserved by Dr. Rodrigues Ottolengui. The solid reasons for this distinction are to be found in his length of effective service, the quality of his editorials, the consistent and embracing values of his journal's contents, and his vigorous participation in all the contemporary affairs affecting the progress of dentistry. He began his long career as a dental editor in 1896 when he became editor of the *Items of Interest* (changed in 1916 to *Dental Items of Interest*). Ottolengui continued in his exceptionally generative career as editor, writer, and leader until his death in 1937.

Ottolengui is one of the leading lights in the category of dental "truants." Ellery Queen described him as "one of the most neglected authors in the entire history of the detective story." Queen included Ottolengui's *Final Proof* (1898) in a list of "the 125 most important books of Detective-Crime-Mystery Short Stories (1845-1967)." Four other books (novels) solidified his reputation in the field of crime fiction: *An Artist in Crime* (1892), *A Conflict of Evidence* (1893), *A Modern Wizard* (1894), and *The Crime of the Century* (1896).

In *A Modern Wizard* Ottolengui introduces a large measure of his scientific knowledge. The chief character, Dr. Medjora, is described as being far in advance of his time in bacteriological knowledge. This "modern wizard" has discovered the bacillus of insanity. He is also a student of hypnotism, and by its means contributes many exciting

effects to the story. Ottolengui made some interesting comments on the reputation gained by this novel: "In *A Modern Wizard* there is a fairly complete account of a murder trial, in the course of which the prosecuting attorney explains the relative value of circumstantial evidence as compared with material evidence. A legal writer in Colorado quoted my definition of circumstantial evidence in a textbook on criminal law. In an important trial in Philadelphia, the district attorney read this entire passage from my book to the jury."

*The Crime of the Century* reflects the working knowledge the author had acquired not only of New York's underworld but also of its high-society world. The plot features the theme of how "the sins of youth can rise up to smite a man in his respectable old age." Another important topic is the relation of heredity and environment to the production of criminals.

*The Final Proof*, or *The Value of Evidence* (1898), a collection of Ottolengui's short stories, was reprinted in 1903 in Putnam's Knickerbocker Library series. For various reasons this title has achieved the widest recognition of his five fiction books. The opening story is "The Phoenix of Crime," in which detective Mitchel's dentist identifies a dead person after cremation and solves the crime by a chart of cavities and fillings, as well as the roots of those teeth still held together by partly destroyed bridgework. The story received revived interest five years later when the body of a murdered girl was discovered in Yonkers, N.Y. Her

identification was established when the local sheriff, who had read Ottolengui's story, enlisted the service of a dentist to make a dental chart of her teeth.

Four stories in the collection had been published in 1895 in the London *Idler* magazine. "A Frosty Morning, or the Mystery of the One Thousand Pound Note" was reprinted in *Ellery Queen's Mystery Magazine* of January, 1943. In 1976 Sir Hugh Greene, a well regarded authority on early detective fiction, edited *The American Rivals of Sherlock Holmes*. Of the thirteen stories in the anthology two are by Ottolengui: "The Nameless Man" and "The Montezuma Emerald." In his introduction, Greene recognized Ottolengui as "one of my personal favorites" and commented on his style: "He writes well in a straightforward manner without pretentiousness which afflicts many of his contemporaries." Besides the novelle there are eleven short stories in this final opus of Ottolengui's five-volume contribution to the literature of crime fiction. However, eleven of his short stories appeared in the famous *The Black Cat* magazine.

Perhaps the opinions of two famous writers and historians of crime fiction will serve as acceptable explanation of why Ottolengui ceased in the middle of his lifetime to operate as a "truant" and thenceforth was completely dedicated to his first calling: dentistry. Queen wrote: "unappreciated even in his own time, Ottolengui finally gave up crime fiction or, as Anthony Boucher wrote—Ottolengui gave up the sleuth for the tooth."



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S. J. SCHABERG <i>Bethesda, Maryland</i>	HAROLD R. STANLEY <i>Gainesville, Florida</i>	JAY FORBES WATSON <i>Los Angeles, California</i>
JOSEPH SCHACHNER <i>Bronx, New York</i>	PRESTON C. STAPLES <i>Montreal, West Quebec</i>	THOMAS C. WATTS <i>Penacook, New Hampshire</i>
LEONARD C. SCHMITT <i>Concord, California</i>	GEORGE W. STARKS <i>Casselberry, Florida</i>	WREX A. WEAVER, JR. <i>Flint, Michigan</i>
ARTHUR SCHWARTZ <i>Winnipeg, Manitoba</i>	ELI STAVISKY <i>Scranton, Pennsylvania</i>	LEON WEISSMAN <i>Sherman Oaks, California</i>
JAMES J. SCIUBBA <i>E. Williston, New York</i>	HOWARD A. STONE <i>Decatur, Illinois</i>	EDWARD T. WENTWORTH, JR. <i>Rochester, New York</i>
RAY R. SCOTT, JR. <i>Los Banos, California</i>	LYLDON E. STRICKLAND <i>Huntsville, Alabama</i>	KENNETH E. WICAL <i>Loma Linda, California</i>
NANCY SUE SEALE <i>Dallas, Texas</i>	ROBERT F. TAYLOR <i>Memphis, Tennessee</i>	LEIGHTON A. WIER <i>San Antonio, Texas</i>
JOHN A. SEE <i>N. Hollywood, California</i>	ROBERT G. THOMAS <i>Oak Lawn, Illinois</i>	LEWIS H. WILLIAMS <i>Toccoa, Georgia</i>
LEO S. SHANLEY <i>St. Louis, Missouri</i>	ANTHONY H. L. TJAN <i>Covina, California</i>	MYRON S. WINER <i>Skokie, Illinois</i>
CLARENCE L. SHOFFNER <i>Weldon, North Carolina</i>	H. WAYNE TODD <i>Maitland, Florida</i>	ARTHUR J. WOLSKI <i>Chicago, Illinois</i>
ALAN M. SHUMAN <i>Brookline, Massachusetts</i>	HARRY R. TOLLY <i>Lincoln, Nebraska</i>	H. W. YAMANOUCHI <i>Scottsdale, Arizona</i>
IRVING H. SINAI <i>New Brunswick, New Jersey</i>	RAYMOND W. TOMCZAK <i>Buffalo, New York</i>	DONALD R. YENT <i>Palo Alto, California</i>
LAWRENCE J. SINGER <i>Wallingford, Connecticut</i>	M. LEE TOOTHMAN <i>West Palm Beach, Florida</i>	EUGENE W. YOUNG <i>Des Moines, Iowa</i>
RICHARD A. SKRIPAK <i>Fort Pierce, Florida</i>	DONALD P. TORMEY <i>Fullerton, California</i>	GEORGE W. YOUNG <i>Washington, D. C.</i>
DOUGLAS A. SMITH <i>N. Hollywood, California</i>	GERALD J. TUSSING <i>Lincoln, Nebraska</i>	KAMAL N. ZAKHARI <i>Bay Pines, Florida</i>
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JULES M. SNITZER <i>Creve Coeur, Missouri</i>	KENNETH T. WALISZEWSKI <i>New Berlin, Wisconsin</i>	IN ABSENTIA:
JAMES E. SPENCER <i>Brooklyn, New York</i>	PAUL O. WALKER <i>Roseville, Minnesota</i>	ARTHUR S. DUNN <i>Glencoe, Illinois</i>
ROGER V. STAMBAUGH <i>Los Angeles, California</i>	WARREN W. WALTERS <i>New York, New York</i>	POSTHUMOUSLY:
THOMAS W. STANFORD, JR. <i>Fort Sam Houston, Texas</i>	JAMES G. WATSON <i>Bryan, Texas</i>	WILLIAM D. POWELL, JR. <i>Birmingham, Alabama</i>

# DECEASED FELLOWS

November, 1983–October, 1984

\*BENJAMIN H. ACKERMAN  
*Hollywood, Florida*

\*FRANK ALFORD  
*Charlotte, North Carolina*

\*GEORGE M. ANDERSON  
*Baltimore, Maryland*

\*WILLARD F. ANDES  
*Miami Shores, Florida*

WALLACE ARMSTRONG  
*Minneapolis, Minnesota*

\*NORRIS H. ATKINS  
*Washington, D.C.*

\*HERMAN F. BERNSTEIN  
*Washington, D.C.*

\*SAMUEL L. BOBBITT  
*Raleigh, North Carolina*

\*LEROY R. BOLING  
*St. Louis, Missouri*

\*NAYSH C. BRENNAN  
*Shenandoah, Pennsylvania*

HARRY W. BRUCE  
*Bethesda, Maryland*

\*WALLIS D. CASWELL  
*Jacksonville, Florida*

\*EDWARD S. CHAPMAN  
*Columbus, Ohio*

OSAMU CHIONO  
*Gardena, California*

\*D. R. CLARK  
*Mesa, Arizona*

\*WALLACE W. CLOYD  
*Livingston, Montana*

\*LIFE FELLOW

\*RALPH D. COFFEY  
*Morgantown, North Carolina*

GEORGE A. COLMER  
*North Miami Beach, Florida*

\*VIVIAN D. COOPER  
*Birmingham, Alabama*

\*HARRY C. COY  
*West Hartford, Connecticut*

\*WILLIAM CURRAN  
*New York, New York*

\*GEORGE C. DARTS  
*White Rock, BC, Canada*

\*C. LINDALE DAVIES  
*Worcester, Massachusetts*

\*MERVYN I. CONNER  
*Honolulu, Hawaii*

\*WILLIAM H. DERRER  
*Westlake, Ohio*

\*EMET P. DICKSON  
*Las Cruces, New Mexico*

\*FRED W. DIETRICH  
*Camden, Arkansas*

GEORGE D. DORE, JR.  
*Seattle, Washington*

\*JOHN W. DOUGLASS  
*Blackstock, South Carolina*

\*BERTRAM H. DOWNS  
*Colorado Springs, Colorado*

\*R. L. DUNTON  
*Edina, Minnesota*

\*GEORGE A. ELLSPERMAN  
*Bellingham, Washington*

\*E. LLOYD EVERLY  
*Bellevue, Kentucky*

\*CLAUD M. FRALEIGH  
*Coralville, Iowa*

\*JACOB B. FRANKLIN  
*Hallindale, Florida*

\*ROBERT C. FRATES, SR.  
*Burlingame, California*

\*ARTHUR E. FRY  
*Sandpoint, Idaho*

BENJAMIN J. GANS  
*Chicago, Illinois*

\*S. BERTON GERSTNER  
*San Diego, California*

\*LEWIS V. GIESECKE  
*Denver, Colorado*

\*ALVIN H. GRUNEWALD  
*Mayville, Wisconsin*

\*G. FRED HALE  
*Raleigh, North Carolina*

\*DONALD E. HARKEY  
*Russellville, Arkansas*

\*HOWARD B. HIGGINS  
*Spartanburg, South Carolina*

\*HERMAN S. HARRIS  
*New York, New York*

\*W. SCOTT HAMILTON  
*Edmonton, Alberta, Canada*

\*MYRON E. HENDERSON  
*Roanoke, Virginia*

\*JAMES M. HIXSON  
*Fallbrook, California*

\*HERBERT A. HOGLUND  
*Willmar, Minnesota*

\*WILLIAM K. HOLT  
*Honolulu, Hawaii*

\*JAMES W. HOWARD  
*Venice, Florida*

JOHN H. HUEY  
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*FRITZ JACKSON <i>Jacksonville, Florida</i>	*PRESTON D. MILLER, SR. <i>Blacksburg, Virginia</i>	*HUTTON A. SHEARER <i>Fredericksburg, Texas</i>
*ARTHUR L. JENSEN <i>Berkeley, California</i>	*MARION L. MILLS <i>San Antonio, Texas</i>	NATHAN A. SHORE <i>New York, New York</i>
*KENNETH L. JOHNSON <i>Raleigh, North Carolina</i>	*FRED L. MOORE, JR. <i>Cincinnati, Ohio</i>	*WILLIAM J. SIMON <i>Rosemount, Minnesota</i>
*LEROY JOHNSON <i>Columbus, Ohio</i>	*SANFORD M. MOOSE <i>Foster City, California</i>	WALTER SOLTANOFF <i>Montclair, New Jersey</i>
VERNON S. JOHNSON <i>Houston, Texas</i>	JOSEPH N. MORRIS <i>Portland, Oregon</i>	*SIDNEY SORRIN <i>New York, New York</i>
*STEPHEN T. KASPER <i>San Francisco, California</i>	*CARL T. OSTREM <i>Des Moines, Iowa</i>	RILEY E. SPOON, JR. <i>Winston Salem, North Carolina</i>
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JOHN O. LANE, JR. <i>Ridgefield, Connecticut</i>	*RAE D. PITTON <i>Canoga Park, California</i>	*CLYDE C. THOMPSON <i>De Queen, Arkansas</i>
*THEODORE CHEUNG LEE <i>San Francisco, California</i>	*WENDELL D. POSTLE <i>Columbus, Ohio</i>	*STANLEY D. TYLMAN <i>Lombard, Illinois</i>
*DANIEL F. LYNCH <i>Silver Spring, Maryland</i>	*JACOB RAMM <i>Bestun, Norway</i>	*HOMER C. VAUGHAN <i>New York, New York</i>
HARVEY W. LYON <i>Stoughton, Wisconsin</i>	*WILLIAM J. REAM <i>Akron, Ohio</i>	*THEODORE H. VERMEULEN <i>Chicago, Illinois</i>
*HERBERT I. MARGOLIS <i>Newton, Massachusetts</i>	*ALFRED L. REHFELD <i>Grosse Ile, Michigan</i>	*PAUL W. VINTON <i>Tinton Falls, New Jersey</i>
*ARTHUR M. MARIS <i>Bella Vista, Arkansas</i>	*JOHN W. RICHMOND <i>Shawnee Mission, Kansas</i>	*NEWTON H. WALLACE <i>Canton, Mississippi</i>
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*ROBERT W. MCELDOWNEY <i>Lancaster, Pennsylvania</i>	*PHILIP SCHWARTZ <i>Livingston, New Jersey</i>	*WALTER E. WRIGHT <i>Columbus, Ohio</i>
*ERBIE M. MEDLIN <i>Pinehurst, North Carolina</i>	*LEONARD C. SCRIBNER <i>Stevens Point, Wisconsin</i>	*LOUIS E. YERKES <i>Allentown, Pennsylvania</i>
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# THE DENTAL EDUCATOR

Robert N. Moore\*

During the 1980s academic dentistry is being confronted with decreasing financial resources and production of more graduates than are needed for the current demands of the United States population. To determine the present status and future needs of academic dentistry as perceived by today's full- or part-time dental faculty members, a national survey of one-fourth (3,142) of the dental educators in the United States was conducted during 1982. The questionnaire focused on the issues of the 1980s, the academic market-

**Geographically, there appears to be little difference between the faculty of public and private schools.**

place, and part-time faculty.<sup>1</sup> The purpose of this article is to present a *profile of the dental educators*

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who responded to the questionnaire and who are representative of the full- and part-time faculty currently teaching in the dental schools in the United States.

In any study, the percentage of questionnaires which is completed and returned is a critical factor in establishing the validity of the data base from which statistical profiles and projections to the population are made. The acceptable percentage of response for a specific research project with a specific group depends, to a large extent, on the differences between responders and nonresponders and on the subject matter of the study. If there is little difference between these two groups, a smaller percentage of responses is more acceptable than if the difference is large. The non-response bias of dentists in Maryland has been investigated by Hovland *et al.*<sup>2</sup> and their results indicate that dentists may be considered to have sufficiently similar educations, incomes, and interests to be considered a homogeneous group.

In the present study a return of

A national survey of one-fourth (3,142) of the dental educators in the United States was used to obtain a profile of the full- and part-time faculty teaching in today's dental schools. Geographically, there appears to be little difference between the faculty of public and private schools. This study revealed that while there are few differences between public and private schools, there are marked differences between full and part-time clinical and basic science faculty in regard to their backgrounds, interests and goals.

30.5% was achieved. Of the 3,142 initial questionnaires, 55 were returned as undeliverable, 11 were returned by the addressees who stated that they were no longer in dental education, and 12 were returned after the cut-off date of January 1, 1982. As the data was being processed, it was noticed that



there were no responses from one private and three public schools. Two of the schools were in the South and two were in the West. Three individuals in each school who were sent questionnaires were contacted, and none of them had ever received a questionnaire. Therefore, it was assumed that the 166 questionnaires were lost in the mail. Thus the actual number of questionnaires assumed to have been received by the current dental faculty was reduced to 2,910. Of these, 887 were completed and returned, giving a response of 30.5%. Since not all people answered all questions, the "N" values as reported in the tables vary. Student's t-test was used for all statistical evaluations.

In view of the size of the sample, its homogeneity, and the lack of any apparent bias as to geographic, institutional, or departmental factors, this response was deemed to be of sufficient magnitude to allow valid statistical analysis and projection of the results to the total population of dental educators. Most likely a greater percentage

response could have been achieved by using a much shorter questionnaire, but the homogeneity of the sampled facilitated obtaining as

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**Full time clinical faculty in public schools spend two to three times as many hours in clinical teaching and administration as they do in research.**

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much information as possible on these complex issues.

Classification of dental schools as public or private was based on the type of institutional financial support as published in the Annual Report of Dental Education of the American Dental Association.<sup>3</sup> Those schools which are traditionally considered to be private, but currently are receiving some public funding, were included in the list of private schools. Classification of dental schools by geographic area and the definition of full-time faculty were based on information provided by the American Association of Dental

Schools (Table 1). Statistical evaluation was by Student's t-test.

## **Results**

*Demographics:* Dental educators are predominantly male (91%) and are, on the average, seven years older than their female colleagues (Table 2). There were very few members of minority ethnic groups in the sample with 94.9% of those responding being white. Of the women responding, 37.5% had dental degrees and 32.5% were dental hygienists. In contrast, 85.1% of the men had dental degrees and none were dental hygienists. There was no significant sex difference in the percentages of those with M.D., Ph.D., Ed.D., or master's degrees. Women had significantly ( $p < 0.05$ ) greater numbers of other degrees, principally bachelor's. A significantly greater percentage of the men had internships ( $p < 0.05$ ) or residencies ( $p < 0.01$ ), which is in keeping with the fact that a greater percentage of the men were specialists.

Geographically, there appears to be little difference between the

faculty of public and private schools. The only statistically significant difference ( $p < 0.05$ ) occurred in the central region where 44.2% of those responding from public schools had master's degrees as opposed to only 30.4% at private schools.

In a study of this nature, it is far more meaningful to separate the clinical faculty from the basic science faculty and from those with joint appointments in both areas. These groups tend to have different backgrounds, interests, and goals which may be undetected in a combined sample. The demographics of these groups and their relation to public and private schools are tabulated in Table 2.

There were no statistically significant differences between public and private schools when the sample was grouped by faculty appointment with one exception: a greater percentage of clinical full-time faculty in public schools had master's degrees than did their counterparts in private schools ( $p < 0.05$ ). The mean ages were very similar for all faculty groups ranging only from 44.1 to 48.0 years. Minority groups were very poorly represented with 92.0 to 97.7% of the sample being white. The largest minority group was Asian, comprised less than 4% of the sample, and was concentrated in the West.

As would be expected, most of the clinical faculty had dental degrees while most of the basic science faculty had either Ph.D. or Ed.D. degrees. Those identifying themselves as having a joint appointment tended to have a dental degree and an M.S., Ph.D., or Ed.D. degree. All dental specialties recognized by the American Dental Association were represented in the sample. Oral pathologists and public health dentists more frequently reported having joint appointments, while the other specialists had mainly clinical appointments.

**Previous Experience:** Most of the faculty responding to the questionnaire have been at only one dental school (Table 3). Thirty-nine per-

cent have been on the faculty at two schools, 13% at three schools, 4% at four schools, and 1% at five schools. One faculty member was at his sixth school and was seeking another position. On the average, men were on the faculty at more dental schools for a longer period of time than were women ( $p < 0.01$ ). No marked geographic differences were evident. Because of their private practices and therefore less mobility, the part-time clinical faculty tended to be at a fewer number of schools for a longer period of time.

Forty percent of both men and women dental educators had not

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**Seventy-five percent of the part-time clinical faculty earned less than \$10,000 and 92 percent earned less than \$20,000.**

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received any research funding in the past five years. Private schools in every region but the West had a significantly ( $p < 0.01$ ) greater percentage of faculty without research funding. Of those individuals with research funding, the largest percentage received institutional support. Federal funding was the next largest source and was significantly greater in public schools in every region but the West (East  $p < 0.001$ ; Central and South  $p < 0.05$ ). Approximately 20% of the faculty had received research funding from private foundations and 10% had been supported by state or local grants. The latter were significantly greater in public schools in the central ( $p < 0.05$ ) and southern ( $p < 0.01$ ) regions. Twenty-eight individuals received grants from industry or professional organizations and five people used their personal funds. When analyzed by discipline it is apparent that the basic scientists are receiving more research funding in all categories than are those faculty members with clinical or joint appointments.

Private schools have significantly more full-time clinical faculty with no financial support and fewer basic science faculty with federal research grants ( $p < 0.01$ ).

When asked how many articles they had published, 20% of the dental educators indicated no publications and 33% indicated 1-5 articles. The rest were almost evenly divided, with approximately 15% publishing 6-10, 11-25, or 26-100 articles. Only 3% had published more than 100 articles. Women tended to have fewer publications than men ( $p < 0.01$ ). Geographically, there were no marked differences in the number of articles published except in the East where 26-100 articles had been published by 35.1% of the public school faculty compared to only 8.4% of the private school faculty ( $p < 0.001$ ). As would be expected, full-time clinical faculty published more than part-time clinical faculty, but not as much as the basic science faculty. As would also be expected from the nature of their education, the faculty with joint appointments published in a range intermediate between the clinical and basic science faculty. Full-time clinical faculty in public schools published significantly more articles than their colleagues in private schools ( $p < 0.05$ ).

Immediately preceding their appointment, the largest number (19.9%) of dental educators responding to the questionnaire were in private practice within 100 miles of the dental school (Table 4). Approximately an equal number of the educators were full-time faculty at another institution. A smaller percentage were graduate students at that institution (10.4%) or another institution (13.3%) or had a governmental or military position (12.5%). Only about 5% of the educators were dental students or part-time faculty at that school or were in private practice more than 100 miles away. Very few (0.6%) were dental students at another dental school immediately preceding appointment to their present position. Sex and geo-



graphic differences appear to be minor.

Part-time clinical faculty were more frequently dental or graduate students at that school, in governmental or military service, or were in private practice within 100 miles before accepting their position at the dental school. In contrast, the full-time clinical and basic science faculty tended to be graduate students at other programs or full-

time faculty at other institutions immediately preceding their appointment. Approximately 17% of the full-time clinical faculty came from governmental or military service and an equal percentage of full-time basic science faculty were post-doctoral fellows. Faculty with joint appointments were most frequently graduate students or were on the faculty at another institution.

**Present Position:** The sample was

evenly divided by academic rank with instructors or assistant professors, associate professors, and professors each accounting for approximately one-third of the total (Table 5). Women held significantly less academic rank ( $p < 0.001$ ) with two-thirds of them being instructors or assistant professors. The part-time clinical faculty most frequently held the rank of instructor or assistant professor while the full-

**Table 1. Classification of Dental Schools by Region, Financial Support, and Faculty Appointments**

	FULL-TIME* (DAYS/WEEK)		FULL-TIME (DAYS/WEEK)
EAST		SOUTH	
Public		Public	
Connecticut	5	Alabama	5
New Jersey	4	Florida	5
SUNY, Stony Brook	5	Med. Col. Ga.	5
SUNY, Buffalo	5	Kentucky	5
Private, Private-State		Louisville	4
Related		LSU	4
Harvard	4	Maryland	5
Boston	4	Virginia	5
Tufts	5	Mississippi	5
Fairleigh Dickinson	4	North Carolina	5
Columbia	4	Texas, San Antonio	5
New York	4	Texas, Houston	5
Temple	4	Oklahoma	5
Pennsylvania	4	South Carolina	5
Pittsburgh	4	Tennessee	4.5
		West Virginia	5
CENTRAL		Private, Private-State	
Public		Related	
Southern Illinois	4	Emory	4
Illinois	5	Georgetown	2.5
Indiana	4	Howard	5
Iowa	5	Baylor	5
Michigan	5	Oral Roberts	4
Minnesota	4	Meharry	4
Missouri	4		
Nebraska	5	WEST	
Ohio	4	Public	
Private, Private-State		UCLA	5
Related		UCSF	4
Loyola	4	Colorado	4
Northwestern	4	Oregon	4.5
Marquette	5	Wash., Seattle	4
Detroit	4	Private, Private-State	
Wash., St. Louis	4	Related	
Creighton	4.5	Pacific	4
Case Western	4	USC	4
		Loma Linda	4

\* If a school states that full-time is five days per week, but allows extramural practice one day, this table records full-time as four days.

**Table 2. Demographic Data by Sex, Region, and Appointment**  
(Values Are Percentage of Total Unless Indicated)

	TOTAL SAMPLE		SEX		GEOGRAPHIC REGION				CLINICAL, F-T		CLINICAL, P-T		SCIENCE		JOINT	
	N	Percent Of Total	Female	Male	East	Central	South	West	Public	Private	Public	Private	Public	Private	Public	Private
SEX																
Female	80	9.0			8.3	9.6	9.1	8.6	8.2	9.3	5.7	8.5	9.1	8.2	16.3	16.0
Male	807	91.0			91.7	90.4	90.9	91.4	91.8	90.7	94.3	91.5	90.9	91.8	83.7	84.0
AGE ( $\bar{x}$ Yrs.)	870	45.5	39.2	46.1	46.4	44.7	45.6	45.7	46.2	46.8	44.1	44.3	45.0	48.0	44.3	45.3
ETHNIC ORIGIN																
White	839	94.9	93.7	95.0	94.0	96.9	94.3	93.9	95.1	92.5	96.8	94.9	92.2	95.9	97.7	92.0
Black	9	1.0	0	1.1	2.4	0.4	0.9	0.9	0.4	0.9	1.3	2.5	0	0	0	4.0
Asian	17	1.9	2.5	1.9	2.4	1.8	0.9	3.5	1.5	3.7	0.6	1.7	3.9	4.1	0	4.0
Hispanic	12	1.4	2.5	1.2	0.6	0.7	2.2	1.7	2.2	1.9	1.3	0	1.3	0	2.3	0
Oriental	4	0.5	1.3	0.4	0.6	0.4	0.6	0	0.4	0	0	0.8	2.6	0	0	0
American Indian	3	0.3	0	0.4	0	0	0.9	0	0.4	0.9	0	0	0	0	0	0
EDUCATION																
D.D.S., D.M.D.	716	80.8	37.5	85.1	83.9	81.9	76.6	85.3	90.7	92.6	96.8	96.6	19.5	26.5	74.4	80.0
M.D.	16	1.8	1.2	1.9	1.8	1.4	1.6	3.5	2.2	1.9	1.3	1.7	1.3	2.0	4.7	0
Ph.D., Ed.D.	190	21.5	21.2	21.5	22.6	19.9	24.4	14.8	10.4	9.3	1.3	2.5	89.6	87.8	39.5	28.0
R.D.H.	26	2.9	32.5	0	1.8	3.5	3.2	2.6	3.7	3.7	0.6	1.7	1.3	0	9.3	12.0
M.S., M.S.D.	264	29.9	32.5	29.6	14.9	39.7	27.0	35.7	39.9	25.9	23.4	26.3	16.9	10.2	46.5	36.0
Other Degree	197	22.3	31.2	21.4	19.0	22.7	23.8	21.7	28.4	37.0	20.1	14.4	3.9	4.1	16.3	36.0
Internship	137	15.5	6.2	16.4	20.8	12.4	16.5	11.3	17.5	20.4	14.9	19.5	5.2	4.1	18.6	8.0
Residency	167	18.9	7.5	20.0	21.4	14.5	20.6	21.7	21.3	23.1	20.8	16.9	3.9	6.1	30.2	20.0
Specialty																
Public Health	21	2.4	2.5	2.4	3.0	1.8	2.9	1.7	1.9	2.8	3.9	0.5	0	0	7.1	12.0
Endodontics	30	3.4	1.2	3.6	6.0	3.9	2.2	1.7	3.0	4.6	3.2	8.5	0	2.0	0	0
Oral Pathology	39	4.4	0	4.9	4.8	3.6	4.4	6.0	4.1	2.8	0	0.8	5.2	8.2	23.8	12.0
Oral Surgery	50	5.7	0	6.2	7.1	5.0	5.7	5.2	4.9	7.4	9.0	6.8	0	0	2.4	0
Orthodontics	42	4.8	3.8	4.9	5.4	4.3	3.8	7.8	4.5	2.8	5.2	11.0	0	0	2.4	8.0
Peodontics	41	4.6	3.8	4.7	2.4	7.1	4.1	2.6	7.5	7.4	5.2	2.5	0	0	4.8	0
Periodontics	56	6.3	1.2	6.8	6.0	7.1	6.3	4.3	9.0	9.3	5.2	6.8	0	0	7.1	8.0
Prosthodontics	49	5.5	1.2	6.0	4.2	5.0	6.3	6.9	10.8	8.3	2.6	4.2	0	0	2.4	0
Medical	2	0.2	0	2.5	0.6	0	0.3	0	0.4	0	0	0	0	0	0	4.0



**Table 3. Institutional Experience by Sex, Region, and Appointment**  
(Values Are Percentage of Total Unless Indicated)

	TOTAL SAMPLE		SEX		GEOGRAPHIC REGION				CLINICAL, F-T		CLINICAL, P-T		SCIENCE		JOINT	
	N	Percent Of Total	Female	Male	East	Central	South	West	Public	Private	Public	Private	Public	Private	Public	Private
NUMBER OF SCHOOLS ON THE FACULTY ( $\bar{x}$ )	844	1.6	1.3	1.6	1.6	1.4	1.6	1.6	1.8	1.8	1.3	1.4	1.5	1.6	1.7	1.6
YEARS AT 1st School ( $\bar{x}$ ) Yrs.	819	9.0	7.7	9.2	9.7	10.1	8.3	7.8	8.2	8.6	9.2	10.5	9.1	9.9	8.2	8.7
2nd School	318	7.8	4.8	8.0	9.0	8.5	6.8	7.8	6.8	6.9	5.7	9.8	9.7	12.0	8.2	11.0
3rd School	106	7.8	6.4	7.8	9.0	6.6	7.4	9.7	5.9	7.1	12.6	9.3	10.5	10.2	6.8	12.2
4th School	26	5.8	4.0	5.8	7.0	4.5	4.9	7.2	6.1	5.0	0	4.7	9.0	3.0	3.0	9.5
5th School	8	5.6	0	5.6	12.0	1.0	7.7	4.0	4.8	0	0	0	8.0	0	1.0	12.0
6th School	1	2.0	0	2.0	0	0	2.0	0	2.0	0	0	0	0	0	0	0
RESEARCH FUNDS																
Institutional	871	42.5	33.8	43.3	40.4	37.9	47.1	43.8	55.2	47.2	12.3	13.8	65.8	77.6	60.5	52.0
Federal	871	32.8	29.9	33.1	33.1	30.7	36.2	28.6	38.7	28.3	9.7	5.2	77.6	55.1	60.5	52.0
State-Local	871	10.9	7.8	11.2	7.2	9.7	14.7	8.0	14.6	6.6	5.2	1.7	21.1	12.2	30.2	4.0
Private	871	21.4	19.5	21.5	21.7	18.1	21.8	27.7	22.6	31.1	7.8	6.9	34.2	36.7	32.6	44.0
Other	871	4.9	3.9	5.0	7.8	2.9	5.2	4.5	6.5	2.8	1.3	7.8	9.2	6.1	2.3	0
None	871	40.4	40.3	40.4	43.4	45.5	34.0	42.0	23.0	39.6	74.0	76.7	3.9	12.2	16.3	28.0
ARTICLES PUBLISHED																
None	174	19.9	29.1	19.0	17.6	22.9	16.3	26.5	12.5	11.4	44.5	37.1	1.3	0	14.0	12.0
1-5	287	32.8	41.8	32.0	29.7	33.7	32.9	34.5	30.7	43.8	38.7	44.8	9.2	14.3	18.6	32.0
6-10	118	13.5	12.7	13.6	13.9	12.2	16.6	8.0	19.7	22.9	9.0	8.6	7.9	6.1	4.7	8.0
11-25	141	16.1	10.1	16.7	21.2	15.1	15.0	15.0	18.6	9.5	5.8	6.9	26.3	40.8	25.6	20.0
26-100	130	14.9	5.1	15.8	14.5	12.9	17.3	12.4	17.4	10.5	1.9	2.6	46.1	28.6	27.9	16.0
100	24	2.7	1.3	2.9	3.0	3.2	1.9	3.5	1.1	1.9	0	0	9.2	10.2	9.3	12.0



**Table 4. Previous Experience by Sex, Region, and Appointment**  
(Values Are Percentage of Total Unless Indicated)

	TOTAL SAMPLE		SEX		GEOGRAPHIC REGION				CLINICAL, F-T		CLINICAL, P-T		SCIENCE		JOINT	
	N	Percent Of Total	Female	Male	East	Central	South	West	Public	Private	Public	Private	Public	Private	Public	Private
<b>PREVIOUS POSITION</b>																
Dental Student																
Same School	49	5.6	7.6	5.4	5.4	6.1	4.8	7.0	5.7	2.8	10.4	9.4	1.3	0	2.3	0
Another School	5	0.6	2.5	0.4	0.6	0.4	0.6	0.9	1.1	0	0.6	0.9	0	0	0	0
Graduate School																
Same School	91	10.4	12.7	10.2	15.0	14.7	4.8	8.8	6.4	6.6	12.3	16.2	9.2	10.2	14.0	24.0
Another School	116	13.3	15.2	13.1	10.2	12.2	16.3	11.4	14.0	7.5	8.4	6.8	25.0	26.5	16.3	20.0
Part-Time Faculty																
Same School	38	4.3	2.5	4.5	5.4	4.7	3.5	4.4	6.0	9.4	1.3	1.7	1.3	6.1	2.3	12.0
Another School	39	4.6	0	4.9	4.8	3.2	4.2	7.0	4.5	8.5	3.9	6.8	1.3	0	2.3	4.0
Private Practice																
Within 100 miles	174	19.9	16.5	20.2	23.4	25.5	12.2	22.8	11.3	11.3	42.9	41.9	0	2.0	9.3	8.0
>100 miles	45	5.1	7.6	4.9	3.6	5.4	5.4	6.1	7.2	11.3	5.2	2.6	0	0	2.3	8.0
Full-Time Faculty	167	19.1	17.7	19.2	16.2	16.9	23.7	14.9	23.8	23.6	1.3	3.4	43.4	32.7	34.9	12.0
Governmental or Military	109	12.5	8.9	12.8	10.2	8.3	18.3	10.5	17.7	17.9	11.7	9.4	1.3	6.1	9.3	8.0
Other	42	4.8	8.9	4.4	5.4	2.5	6.1	6.1	2.3	0.9	1.9	0.9	17.1	16.3	7.0	4.0

**Table 5. Previous Experience by Sex, Region, and Appointment**  
(Values Are Percentage of Total Unless Indicated)

	TOTAL SAMPLE		SEX		GEOGRAPHIC REGION				CLINICAL, F-T		CLINICAL, P-T		SCIENCE		JOINT	
	N	Percent Of Total	Female	Male	East	Central	South	West	Public	Private	Public	Private	Public	Private	Public	Private
<b>ACADEMIC RANK</b>																
Instructor	81	9.4	20.5	8.3	12.1	10.2	6.7	11.3	3.4	2.8	26.1	20.5	2.6	0	2.4	12.0
Asst. Prof.	225	26.1	46.2	24.1	29.7	25.5	25.9	23.6	21.6	27.8	37.3	41.1	9.1	12.2	19.5	20.0
Assoc. Prof.	265	30.7	24.2	31.4	24.2	29.9	33.2	34.0	33.2	36.1	25.4	23.2	36.4	36.7	36.6	20.0
Professor	280	32.5	7.7	34.9	32.1	32.8	33.9	28.3	41.8	32.4	9.2	15.2	50.6	46.9	41.5	44.0
<b>TENURED</b>																
Yes	423	48.1	32.1	49.6	40.4	47.2	53.3	46.0	68.5	56.5	7.7	2.6	83.1	87.8	73.8	56.0
No	222	25.2	33.3	24.4	30.1	25.2	19.7	33.6	11.6	18.5	47.7	59.5	3.9	2.0	2.4	24.0



On Tenure Track	105	11.9	23.1	10.8	6.6	12.8	16.2	6.2	18.0	19.4	5.8	0	11.7	10.2	21.4	8.0
Not Available	130	14.8	11.5	15.1	22.9	14.9	10.8	14.2	1.9	5.6	38.7	37.9	1.3	0	2.4	12.0
USE OF HOURS		(Hrs.)														
Administration/ Committees	847	7.71	7.0	7.7	7.4	7.6	8.0	7.9	11.1	11.8	0.5	1.3	9.2	12.0	9.7	14.3
Research	848	5.48	6.7	5.4	6.5	4.4	6.2	4.8	5.2	2.6	0.5	0.6	19.8	15.7	10.4	6.1
Classroom	847	3.50	4.4	3.4	3.3	3.3	3.7	3.6	3.6	2.8	1.0	1.0	7.3	9.2	7.2	4.8
Laboratory	848	2.12	2.1	2.1	2.2	1.8	2.5	1.8	2.2	2.5	0.5	1.1	4.2	3.9	2.5	2.1
Clinic	848	8.95	9.9	8.8	7.8	8.9	9.6	8.9	13.7	13.0	7.5	6.4	1.3	1.3	8.6	7.5
Intramural Practice	844	1.70	0.8	1.8	1.2	1.1	2.5	1.9	3.5	2.7	0	0.2	0.8	0.8	2.5	2.6

**Table 6. Salary**  
(Values Are Percentage of Total Unless Indicated)

	TOTAL SAMPLE		SEX		GEOGRAPHIC REGION				CLINICAL, F-T		CLINICAL, P-T		SCIENCE		JOINT	
	N	Percent Of Total	Female	Male	East	Central	South	West	Public	Private	Public	Private	Public	Private	Public	Private
GROSS UNIV. SALARY																
None or \$1	35	4.2	2.7	4.3	7.0	4.5	1.7	6.4	0	3.1	9.3	10.9	0	2.1	4.7	0
Below \$10,000	179	21.4	9.4	22.5	25.3	26.0	16.8	17.3	0.4	2.0	64.3	66.4	2.7	2.1	0	0
\$10,001-20,000	68	8.1	29.7	6.0	10.1	10.0	5.1	9.1	3.4	4.1	18.6	14.5	16.2	0	4.7	4.2
\$20,001-30,000	97	11.6	32.4	9.6	10.1	13.0	11.4	10.9	9.9	18.4	6.4	2.7	40.5	21.3	11.6	25.0
\$30,001-40,000	171	20.4	22.8	20.2	17.1	17.5	24.6	20.9	26.7	26.5	1.4	2.7	18.9	40.4	25.6	20.8
\$40,001-50,000	143	17.1	1.4	18.6	17.7	15.6	18.5	16.4	28.6	23.5	0	0.9	18.9	25.5	23.3	25.0
\$50,001-60,000	87	10.4	1.4	11.3	8.9	7.4	14.8	7.3	17.9	11.2	0	1.8	2.7	6.4	16.3	12.5
\$60,001-70,000	38	4.5	0	5.0	1.9	4.5	5.4	6.4	8.0	8.2	0	0	0	2.1	11.6	4.2
\$70,001-80,000	9	1.1	0	1.2	0	0.7	1.3	2.7	2.7	0	0	0	0	0	2.3	4.2
Over \$80,000	10	1.2	0	1.3	1.9	0.7	0.3	2.7	2.3	3.1	0	0	0	0	0	4.2
AMOUNT FROM INTRAMURAL PRACTICE																
None	646	76.6	81.6	76.1	84.4	84.1	67.2	73.6	53.1	72.7	96.4	95.5	91.9	91.7	58.1	72.0
Some, Amount unknown	22	2.6	5.3	2.3	2.5	1.8	4.0	0.9	3.4	2.0	1.4	1.8	2.7	0	7.0	4.0
Less Than 10%	80	9.5	9.2	9.5	5.6	5.2	17.1	5.4	23.3	2.0	2.1	0.9	2.7	2.1	20.9	4.0
11-25%	56	6.6	3.9	6.9	4.4	5.2	8.7	8.2	13.4	11.1	0	0.9	2.7	2.1	7.0	8.0
26-50%	27	3.2	0	3.5	1.9	1.5	2.7	9.1	5.7	7.1	0	0	0	2.1	4.7	8.0
51-75%	8	0.9	0	1.0	0	2.2	0.3	0.9	0.4	4.0	0	0.9	0	2.1	2.3	0
76-99	1	0.1	0	0.1	0	0	0	0.9	0	0	0	0	0	0	0	4.0
All	3	0.4	0	0.4	1.2	0	0	0.9	0.8	1.0	0	0	0	0	0	0

time faculty members were associate professors or professors.

Nearly half the sample was tenured. While more men were tenured, more women reported being on tenure track ( $p < 0.01$ ). Geographically, slightly more faculty members in the South were tenured. Unavailability of tenure was most frequently reported in the East. More of the public school faculty from the East, central region, and South were tenured, and more of the public school faculty from the West were on tenure track when compared to their counterparts in private schools ( $p < 0.05$ ). The vast majority of full-time clinical, basic science, or joint faculty was either tenured or on tenure track. The opposite is true for part-time clinical faculty who were predominantly not tenured.

Use of hours at the university for the entire sample is in the following descending order: clinic, administration/clinic research, classroom and laboratory teaching, and intramural practice. Both men and women spent the largest portion of their time in clinical teaching. While there were no marked geographic differences in the utilization of hours, there were some statistically significant differences in public and private schools in the various regions. Dental educators in public schools in the East spent more time in administration ( $p < 0.05$ ) and research ( $p < 0.001$ ) and less time in the classroom ( $p < 0.05$ ) than did their private school colleagues. Similarly, faculty in public schools in the South spent more time in research and also in intramural practice than did their private school counterparts ( $p < 0.01$ ). In contrast, faculty in private schools in the West spent more hours in administration ( $p < 0.05$ ) and in intramural practice ( $p < 0.01$ ) than those in western public schools.

When the faculty was divided by department and appointment, it is apparent that full-time clinical faculty in public schools spend two to three times as many hours in clinical teaching and administra-

tion as they do in research. At private schools the difference is nearly five times. The time spent in administration and committee meetings is only slightly less than that in the clinic. Full-time clinical faculty in public schools spent an average of 3.5 hours in intramural practice while their colleagues in private schools spent an average of 2.7 hours, a difference which was not statistically significant. The raw data from the survey indicated that only about one-half of those full-time clinicians answering the use of hours question spent any time at all in intramural practice. When the data is recalculated to exclude the non participants, a much different impression is gained. Those public school full-time faculty who actually practice spend an average of 7.0 hours per week in patient care. Their private school colleagues spend an average of 9.1 hours per week in intramural practice.

Classroom and laboratory teaching accounted for five to six hours of the weekly time of full-time clinical faculty in both public and private schools. In proportion to their time at the dental school, part-time clinical faculty in both public and private schools spend more time in the clinic than did their full-time counterparts.

As would be expected, full-time science faculty spent most of their time in research and in administration and committee meetings. The fact that some hours were recorded for the conducting of an intramural practice by a few members of the basic science group reflects the fact that it is composed of some faculty with clinical degrees. The joint appointment group, which is composed of clinicians who have science backgrounds, but less time for research, roughly falls between the clinicians and basic scientists.

Gross university salary to a large extent is dependent upon academic rank, department, and type of appointment (Table 6). It was apparent that in the entire sample, women's salaries were in the lower ranges. Only 2.8% of the women

responding had salaries above \$40,000 and 2.3% reported salaries above \$70,000. A larger percentage of the faculty in the East and central region reported salaries under \$10,000. Such data is consistent with the larger number of part-time faculty in those regions. Full-time clinical faculty and those with joint appointments earned the higher salaries in dental education. Salaries for full-time basic scientists were approximately \$10,000 less. Seventy-five percent of the part-time clinical faculty earned less than \$10,000 and 92% earned less than \$20,000. There were no statistically significant differences between the faculty from public and private schools in regard to salary. Revenue from intramural practice was not a large factor in the gross university salaries. The vast majority of women (96.8%) and men (87.9%) received less than 10% of their income from intramural practice. Faculty in the South and West received a larger percentage of their gross income from intramural practice, a fact consistent with the larger percentage of full-time faculty in those regions. Full-time clinical faculty and those with joint appointments reported similar patterns of revenue from intramural practice. Full-time clinical faculty in private schools more frequently ( $p < 0.05$ ) received no income from an intramural practice than did their public school colleagues. This is consistent with the fact that more private schools consider four days to be a full-time appointment.

### Implications for Dental Education

From the data compiled in this study it is clear that on the whole there are remarkably few differences between analogous faculty in public and private schools. While the clinical and basic science faculty differ in many respects, it does not really matter if they are at public or private schools. This is not to say, however, that differences in public and private schools do not



exist. Each has different systems of governance and financial support which profoundly effect the goals and needs of the institution and thus indirectly influences the faculty. These differences are most evident in the emphasis placed on research and teaching for employment and promotion.

Therefore, it appears that there is little to be gained from emphasizing the differences between schools or faculty members. Rather, these differences, or lack of them, should be evaluated on a local as well as national level and used as a basis for constructively determining the needs of the full- and part-time clinical and basic science faculty. In order to retain their quality junior and senior

faculty members dental schools must integrate their needs with those of their faculty members. For example, if a school recently has placed emphasis on research as a criterion for promotion and has a faculty with few publications, it is unlikely they will meet the new standards without assistance. The dental school would best serve its interest by analyzing the strengths and weaknesses of its faculty members and offering courses in research methodology and techniques supplemented by small research grants. Such an approach will alleviate much of the apprehension about conducting and publishing original research and will strengthen the entire dental educational program.  $\Delta$

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