the journal of the

AMERICAN COLLEGE OF DENTISTS

APRIL 1978 VOLUME 45 NUMBER 2

Challenges to the Dental Profession

Dental Schools in the Seventies

The Role of State Boards

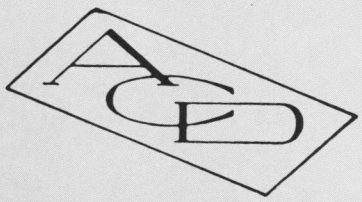
Can Academic Distress be Predicted?

The Plight of Scientific Journals

MEMBER PUBLICATION
AMERICAN ASSOCIATION OF DENTAL EDITORS

THE JOURNAL OF THE AMERICAN COLLEGE OF DENTISTS
is published quarterly — In January, April, July, and October — at
Crescent & Mulberry Streets, Harrisburg, Pennsylvania 17104
Second class postage paid at Washington, D.C. and additional points.

Send Change of Address and Form 3579 to the American College of Dentists,
7316 Wisconsin Avenue, Bethesda, Maryland 20014.



NEWS AND COMMENT

SECTION NEWS

Illinois Section

The annual midwinter luncheon was held in the Lower Summit Room of the Conrad Hilton Hotel in Chicago on Sunday, February 4, 1978, the opening day of the 113th Midwinter Meeting of the Chicago Dental Society.

The luncheon speaker was Frank P. Bowyer, president of the American Dental Association. Dr. Bowyer, always a dynamic speaker, discussed some of the problems facing dentistry today.

Officers of the Illinois Section are Herbert C. Gustavson, chairman; Syrus E. Tande, vice chairman and Margaret E. Swanson, secretary-treasurer.

New Jersey Section

The New Jersey Section met on October 20, 1977 at the Ramada Inn, Clark, New Jersey, with Chairman David B. Alterman presiding. There were 27 members present including three new Fellows.

Dr. Schwartz read the announcements of the death of two of our dear colleagues, Edward Zlonczewski and Albert Klein, and the letters that were sent to their respective families by the Central Office of the College, acknowledging their deaths and announcing that a memorial gift in Dr. Zlonczewski's and Dr. Klein's names had been entered into the registry of the Foundation. A moment of silence was observed by the entire assemblage.

As of October 18, 1977, we have 131 paid up members.

The after dinner speaker was Dr. Mitchell Canter, a periodontist, who spoke on "Transformation in Dental Practice" - an experience which creates an opportunity to realize your potential to transform the quality of your life. His talk was most provocative.

Metropolitan Washington Section

The Metropolitan Washington Section met on November 2, 1977 at the Holiday Inn, Chevy Chase, Maryland. Chairman Israel Shulman presided. Albert G. Paulsen presided at the Rechartering ceremony and Regent Balfour G. Mattox presented the Charter to Dr. Shulman. The speaker of the evening was Alfred Lindeman, Esq., Senior Staff Attorney for the San Francisco Regional Office of the Federal Trade Commission, who spoke on "The Federal Trade Commission Concern in Dentistry." The talk, followed by a question and answer period, was most informative regarding the Government's quest into the learned professions' possible violation of Anti-Trust Regulations.

The Section met again on January 31, 1978 at the National Naval Medical Center. Over seventy members were in attendance. David Beaudreau was nominated and elected to the position of secretary Regent Bal Mattox installed the new officers; Robert W. Elliot, Jr., chairman; Jeanne Sinkford, vice-chairman; David Beaudreau, secretary-treasurer and Irving M. Rothstein, member at large to the executive committee.

The various committee reports included commitment for over forty package libraries to be donated this year by the Section and individuals. A decision was made to award $250 annually to a deserving Junior student at each of the local dental schools.

Dr. Beaudreau, dean of the dental school at Georgetown University and Dr. Sinkford, dean of the dental college of Howard University joined forces to give a stimulating presentation on "Dental Education - Quo Vadis". There was a great deal of discussion on the problems facing us today and speculation about what lies ahead.

Oregon Section

The Oregon Section, at its annual meeting honored two new members elected recently to Fellowship in the College. They are Joseph Schwartz of Portland who is a periodontist and clinical associate at the University of Oregon Health Sciences Center, and Martin Kolstoe of Eugene, past president of the Oregon State Board of Dental Examiners.

The new officers elected for 1977-78 are James Tinkle, chairman; Evelyn Strange, vice chairman and Jim Marshall, secretary-treasurer.

Maryland Section

After a year of preparation the Maryland Section of the College conducted "American College Day" at the University of Maryland dental school on October 26, 1977. The committee for "American College Day" met with Dean Reese in the spring of 1976 to select a day for the affair and included it in the school calendar of the senior class this year.

Section chairman Walter Dorn and Dean Reese welcomed the students. The following topics for discussion were selected and members of the section assigned as listed.

TOPIC	*CLINICIAN*
Auxiliary in the Dental Office	Harry W.F. Dressel, Jr.
Continuing Education	Charles T. Pridgeon
Crown & Bridge	Norton I. Brotman
Dental Organization	William T. Strahan
Diagnosis & Treatment Planning	William R. Patteson
Drugs in Dentistry	Frank Dolle
Endodontics	Irving I. Abramson
Office Records	Joe N. Price
Oral Surgery	Lloyd E. Church
Orthodontics	Joseph H. Seipp, Jr.
Pedodontics	Saul M. Blumenthal
Periodontics	Lawrence F. Halpert
Public Health Service	R. Berton McCauley
State Boards	Gerson A. Freedman
The Day After Graduation	Eugene L. Pessagno, Jr.
Third Party Dental Insurance	Marvin Sheldon

The seniors were allowed to select the topic of their choice. Tables and chairs were set up in the student lounge of the school. All tables were filled and the students participated by asking questions concerning their topic of choice. One hour was allotted for the discussion. The program was well received by the seniors and many discussions were held after the allotted time had elapsed.

After the presentation refreshments were served. The section is planning to serve a lunch next year which will precede the clinics.

NEWS OF FELLOWS

Michael Turoff of Brooklyn, New York has been elected General Chairman of the 54th Annual Greater New York Dental Meeting, which is the largest dental education seminar in the world. Dr. Turoff, a private practitioner, is chief of prosthodontics at the Jewish Hospital and Medical Center of Brooklyn.

Edwin M. Collins was named acting dean of the dental school at the University of Texas Health Science Center at San Antonio recently. A member of the dental school faculty since October 1974, Dr. Collins served as professor of community dentistry, coordinator of the dental outpatient clinics, and coordinator of research and planning prior to his selection.

Ira Franklin Ross, of Milburn, N.J. was presented the Doctor Isador Hirschfeld Memorial Award by the Northeastern Society of Periodontists at its recent meeting in New York City. This memorial award is presented for contributions to the advancement of periodontology through research, dental education, and periodontal literature, and outstanding service to the profession and the Northeastern Society.

Keith P. Blair of San Diego, California has been appointed editor of the Journal of the California Dental Association.

Sidney B. Finn, a pioneer in fluoride studies and professor emeritus of dentistry at the University of Alabama in Birmingham (UAB) School of Dentistry, has received the honorary degree of Doctor of Odontology from the University of Umea in Sweden.

The degree was presented recently in recognition of his many contributions to dentistry, both as a teacher and scientist.

Dr. Finn, who retired in 1974, after serving for 23 years on the UAB School of Dentistry faculty is an internationally recognized authority in pedodontics and clinical dental research.

Karl J. Foose of West Palm Beach, Florida, was given the Distinguished Service Award for 1977 by the American Society of Dentistry for Children, "in recognition of his efforts as a general practitioner of dentistry in promoting more and better dentistry for children."

Leon Herschfus of Detroit, Michigan has been elected president of the American Academy of Oral Medicine.

(continued on page 124)

the JOURNAL of the AMERICAN COLLEGE of DENTISTS

A QUARTERLY PRESENTING IDEAS IN DENTISTRY

ROBERT I. KAPLAN, *Editor*
One South Forge Lane
Cherry Hill, New Jersey 08002

ROBERT J. NELSEN, *Business Manager*
Journal of the American College of Dentists
7316 Wisconsin Ave.
Bethesda, Maryland 20014

April 1978

Volume 45—Number 2

THE JOURNAL OF THE AMERICAN COLLEGE OF DENTISTS is published quarterly—in January, April, July, and October—by the American College of Dentists, Inc., McFarland Co., Harrisburg, Pennsylvania • Subscription $12.50 a year; $13.50 overseas; single copies $4.00 • Second class postage paid at Harrisburg, Pa. and additional points •

Correspondence relating to the JOURNAL should be addressed to the Editor, One South Forge Lane, Cherry Hill, New Jersey 08002. Changes of address and subscription requests should be addressed to the Business Manager, JOURNAL OF THE AMERICAN COLLEGE OF DENTISTS, 7316 Wisconsin Avenue, Bethesda, Maryland 20014. Reprint requests should be directed to the author.

The JOURNAL is a publication member of the American Association of Dental Editors.

For bibliographic references the JOURNAL title is abbreviated J Am Col Dent and should be followed by the volume number, page, month, and year. The reference for this issue is J Am Col Den 45:69-128, April 1978.

CONTENTS

George E. Mullen
Treasurer 1977-78

The Treasurer of the College

George E. Mullen, a general practitioner of New Milford, Connecticut has been installed as Treasurer of the College at its last annual meeting. A graduate of Fordham University and Columbia University School of Dental and Oral Surgery, Doctor Mullen has had a lengthy career of service on all dental organizational levels. He served as chairman of the Finance, Budget and Audit Committee of the Second District Dental Society and later as treasurer and then president of this organization. He was treasurer and later general chairman of the Greater New York Dental Meeting, and also was treasurer of the New York Chapter of Psi Omega dental fraternity.

Doctor Mullen served on the Board of Governors of the Dental Society of the State of New York, followed by a term as its president. He has also been treasurer and president of the New York State Association of the Professions, and is currently president of the New York Dental Service Corporation. He is a Fellow of the New York Academy of Dentistry, the Long Island College of Odontology, and the International College of Dentists, and formerly served on the dental staffs of St. Mary's and Brooklyn Hospitals.

On the national level, Doctor Mullen has been a delegate to the American Dental Association for eleven years, served on four reference committees, three times as chairman, and has been a consultant to the Council on Annual Session for six years. He has also held the presidency of the National Federation of St. Appolonia Guilds.

Doctor Mullen is married to the former Lillian Parks, an attorney. They are the parents of five sons and two daughters. One of their daughters is a dental hygienist and formerly Director of the School of Dental Hygiene at Westbrook Junior College in Maine. Doctor Mullen practices with his son, Robert in New Milford, Connecticut.

The College is fortunate to have someone with the background and experience in financial matters as George Mullen to follow in the footsteps of Hank Heim and Fritz Pierson in the traditional role of "watchdog of the treasury." We wish George all success as he assumes his new responsibilities.

Editorial

Activity vs Achievement as Criteria for Fellowship

The American College of Dentists represents less than four percent of the nation's dentists. Its Fellows include most of the leading figures in the profession, many who have made outstanding contributions to its advancement. Election to Fellowship is often the culminating honor of a dentist's career. As we know, one may not apply to join; membership is by invitation only. Any Fellow in good standing may initiate the process by completing the required form, and having the nomination supported by a second Fellow, both of whom are expected to be well acquainted with the character and accomplishments of the person being proposed.

Each year the office of the College receives a few hundred Fellowship nomination forms. And each year, after they have gone through the careful selection process which the College employs, a somewhat diminished number of invitations to Fellowship are extended to the nominees whose qualifications are considered most worthy.

At times, a Fellow will present a nomination for a friend or a relative—a son, nephew or brother—oblivious of the fact that although the one so proposed is a fine person, he has not accomplished very much beyond his regular expected "line of duty" services.

A wise man once said, "Do not confuse activity with achievement" and perhaps this advice could well be a guideline for Fellows who consider preparing nominations. It is not enough for a dentist to be a member of or hold office in many dental, social or fraternal organizations. The sponsor must ask himself, "What was the significance of the positions this individual occupied? What contributions did he make to these groups? Were his services over and above what would usually be expected of him? What was the significance of his achievements? Is his home town a better place to live in because of him? Has he advanced the cause of dentistry in his community? What did he accomplish in his local or state dental society? In dental literature? In his religious affiliation or service club or civic group? Has it been a sustained or long term accomplishment? In other words, were his achievements of sufficient merit to qualify him for Fellowship?

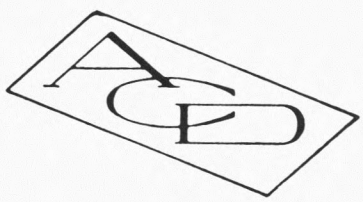
When the time comes to fill out the nomination form, the sponsor needs to present his nominee in the best possible light, taking time to prepare his statements. Judgement can be made only on the basis of the evidence presented. Too many nominees are poorly served by hastily prepared forms, put together at the last minute to meet the February first deadline.

The College has no quota system for any racial, religious or ethnic group. It is open to all dentists who meet its high standards. Fellows need to seek them out—the leaders and achievers in the profession—and, while maintaining the necessary secrecy, initiate the process that will bring them into Fellowship. The future of the College depends on its selecting the best available nominees.

R.I.K.

Are They Trying To Tell Us Something?

It is interesting to note that in the classified advertising section of the Philadelphia Inquirer, the ads for Attorneys-at-law are right next to those for Massage Parlors.



The Challenges to the Dental Profession as an Integral Part of the Health Service

GERALD H. LEATHERMAN, D.M.D., FDS.RCS (Eng. & Edin).
FFD RCS (Ire) D.Sc., D.Odont.

To set the scene for this paper, I would start by quoting Dr. H. Mahler, Director General of the World Health Organization who, in a paper called "Habitat - health and human settlements", wrote:

> "Health Services throughout the world are now confronted with new challenges resulting from economic growth and technological advance, which manifest themselves in social disruption and in the pollution of the environment. Nevertheless, in many developing countries the paramount needs of the health services still focus on such traditional problems as communicable disease, nutrition and maternal and child health. Rapid population growth continues to outpace the capacity to provide even these minimum services to people. A high rate of rural-to-urban migration exacerbates the situation by depleting the younger and more productive members of the rural population, while simultaneously creating an overwhelming demand for the extension of urban services.
>
> The result is a pitiful situation where hundreds of millions of people lack the basic essentials of life, including nutritious food, safe water and proper means of waste disposal, decent shelter and the opportunity for intellectual and moral growth."

I have used this quotation as a reminder that the problems of the dental profession in the Western developed world are different from those of the African and Eastern countries, excepting Japan. Where dental health has some priority in the developed countries, in the developing countries, apart from the relief of pain, dental health comes low on the priority list, admittedly because of the population explosion, scarcity of dental personnel and scarcity of equipment.

I would further quote from an article in the WHO Chronicle April 1977, called "Health Challenges for 1978 - 83".

> The ultimate instrument for the delivery of health care is a comprehensive national health system or service.
>
> In each society, various public and private resources may be used in different proportions and may be concentrated on solving different problems, but world experience has shown that there are a

---

Dr. Leatherman has been for many years Executive Director of the Federation Dentaire Internationale.

number of basic principles, observance of which can ensure optimum development of national health systems. These include:

1. the recognition of the responsibility of the State and society for the protection of the health of the population;
2. the organization of rational training of national health personnel at all levels;
3. the development of the preventive approach both for the community and for the individual, the setting up of an appropriate system of easily accessible preventive, curative and rehabilitative services;
4. the extensive application of the results of progress in world medical research and public health practice, as well as
5. the health education of the public and community involvement."

Now let us see how these five basic principles present challenges to the dental profession on an international basis.

THE RESPONSIBILITY OF THE STATE AND SOCIETY

The recognition of the responsibility of the State and Society for the protection of the (dental) health of the population. There is taking place in most of the countries of the world social development and economic growth. These stem from a move from ignorance to knowledge, poverty to wealth and sickness to health. The provision of health care is an essential part of the social services in any country and is a political factor in influencing government. A part of health care is the provision of dental health services, and although this is being increasingly recognized by governments, organized dentistry, particularly in the developed countries, where private practice flourishes, seems slow to recognize that the State, being responsible for their peoples dental health, must provide some form of dental health service, which takes account of public need and within which the dental profession must make itself accountable to the people it serves. The challenge to the dental profession is to influence Governments and the community that the type of Dental Health Service which dentists and their auxiliaries are asked to provide, must be based on the:

1. Comprehensive individual and community measures for the prevention of dental caries and periodontal disease, with special emphasis on the health of the new generation;
2. proper facilities for diagnosis and restorative and replacement treatment;
3. adequate facilities for education and research.

The development of dentistry from a craft to a biologically oriented, technically sound and socially conscious health profession, has, until

comparatively recently, been through education in private schools and practice on a private patient/dentist basis by payment of fees and with little or no organization of social dentistry as a community service and, with this development, the profession has been granted a monopoly by most of the recognized countries in the world, in that dental practice could only be conducted by properly registered dentists.

This situation is now challenged in the developed, non-communist countries of the world by Government, supported by Trade Unions and Big Business, who are taking over the organization and delivery of health services. The introduction of third party payment is a direct challenge to private practice, and even the Ethics of organized dentistry are being contested, in that prevention of advertising stops competition and protects a monopoly to the detriment of the patient.

What is interesting is that in Communist controlled countries, where the health professions are servants of the State, there is evidence that private practice exists and is increasing.

The basic challenge to private practice is whether it has supplied effective dental services to the populations of the world, and the answer in my view is *no,* nor is there any likelihood of such a system doing so in the future. Dentistry has not fulfilled the basic challenge of providing comprehensive individual and community measures for the prevention of dental disease, with special emphasis on the protection of the dental health of the new generation.

TRAINING OF NATIONAL HEALTH PERSONNEL

The next challenge is the organization of rational training of national health personnel at all levels. I would call your attention to a very interesting paper "A Curriculum for Primary Dental Care" by Sheldon Rovin, dean of the School of Dentistry, of the University of Washington, Seattle. His principle thesis is: "Dental curricula should be restructured to train the dentists and auxiliary personnel required for the practice of 'primary care dentistry'." He further states "dental training programs are not geared to fulfilling public need." Dental Schools in most countries have based their curricula on the demands and pattern of the more affluent societies, particularly in the USA and Western Europe. This has led to the dentists they qualify providing expensive services for the privileged few, rather than being prepared to give a minimally adequate service for the people as a whole. This constitutes a challenge to dental schools to change their curricula, in order to produce dentists able to render primary care dentistry which, to quote Dr. Rovin again, means "a range of services provided by a general dentist as part of a team delivering oral health care. Primary

health care by definition entails teams of health workers sharing the responsibility of patient care."

The oral health team is undoubtedly the future pattern of dental practice and will enable the dentist to expand and improve his services to the world's population. The composition of the team will vary with its objectives and environment. Basically it will be composed of two or more dentists and an appropriate number of auxiliary personnel.

The challenge to the dental profession is to decide what auxiliary personnel it requires, define their duties and educate them properly for the tasks they will be expected to carry out. It must also encourage the proper organization and control of auxiliaries, allow for career ladder mobility whereby an auxiliary can progress to a dentist with due allowance for previous education. All this should be done without pressure from the State, but by wise and careful planning within and under the control of the dental profession and the auxiliary organizations. In my view the World Health Organization's categories of non-operating and operating auxiliaries should be accepted internationally.

Non-operating - to include administration staff, chairside assistant, dental health educators and other titles for persons who under no circumstances work in the mouth but assist the dentist with his work.

Operating - to include the Dental Hygienist, the New Zealand Dental Nurse, the Dental Therapist and the Dental Auxiliary in the United Kingdom.

I have not included the Dental Technician, for this represents another challenge to the dental profession as to whether he or she is restricted to work solely under the prescription of a dentist as a non-operating auxiliary, or whether, in certain circumstances, he may practice as an operating auxiliary, now commonly known as a Denturist.

TEAM (training in expanded function auxiliary management) is being experimented with in many schools. I think Dr. Rovin sums the auxiliary problem up well: "Dentistry does not need a proliferation of different types of auxiliaries, but it does need a more rational utilization of existing auxiliaries".

I would call your attention to a statement by Senator Harrison A. Williams of New Jersey, one of the most influential voices in the US Senate who, in an address given in 1976 entitled "The Challenge of Tomorrow in Dental Care Delivery" said:

> I must say in all candor that I was surprised and a bit disturbed to learn of the recent action of the ADA House of Delegates in approving a resolution against the utilization of certain kinds of

dental auxiliaries. This action has the public appearance of putting severe limits on the amount of services the dental profession seems willing to make available to the public.

All of the evidence points to a clear showing of increased productivity and the maintenance of the highest standards of quality care. It must be concluded therefore that expanded function dental auxiliaries are safe, effective, and financially feasible in the private sector. The only remaining barrier is the willingness of the dental profession to throw its weight behind the training and more widespread utilization of such personnel.

To return to the future pattern for dental education, I suggest that (1) basic and clinical sciences must be taught side by side and the application of basic sciences not only to the systems within the body, but to clinical practice must be clearly defined and demonstrated to the dental student during his preclinical studies. Dentistry must produce clinical teachers who have been trained to teach the basic sciences, and to close the gap between the scientist and the clinician. Both full-time teachers and part-time clinicians should be on the faculty, and both should have the privilege of clinical practice within the confines of the university. Secondly, clinical dentistry must be taught as a community health service, making the student aware of the needs of the population in relation to prevention and early treatment, as well as emergency treatment. The major problems in dentistry which have a public health significance are dental caries, periodontal disease (both of which can be controlled), and dentofacial anomalies, including malocclusion and oral tumors.

THE DEVELOPMENT OF THE PREVENTIVE APPROACH

Dental personnel must be taught the principles of human behavior and management. The challenge of the future is for the dental team to understand how to guide large numbers of people towards a desired level of oral and general health, which brings us to the third challenge - the development of the preventive approach, both for the community and the individual, with the setting up of an appropriate system of easily accessible preventive, curative and rehabilitative services. To attain this the members of the dental team must be trained to delivery primary health care with the following order of priority:

1. All children's treatment, including orthodontics, must be an absolute priority and taught and practised as primary prevention.
2. After the relief of pain, the condition of the supporting structures must be considered before the detection of caries. Students must learn the value of simple prophylaxis, i.e. scaling and good oral hygiene and

plaque control, prior to surgical intervention, such as gingivectomy and gingivoplasty, curettage, etc.

3. The early treatment of caries and the maintenance of a healty pulp are required rather than the creation of root-filled teeth. Dental research, in cooperation with industrial research, should develop better filling materials, and should also place for emphasis on the healing of an infected pulp rather than the creation of a germ-free root canal.

4. The teaching of oral surgical procedure.

5. A study of local and general anesthesia, particularly as the latter is now being used for multiple restorative treatment.

6. The restoration of function by the insertion of partial, fixed, or removable prostheses and full dentures. The study of occlusion in relation to the maintenance of healthy supporting structures.

7. A course of radiology and diagnosis including radiation hazards to the patient and the community.

Now alongside the basic and clinical science teaching and practice broad parallel courses in the social sciences should be taught and practised. These would include:

a. A study of antisepsis and sanitation,
b. Community health and social welfare and the laws, functions and objectives of health authorities;
c. Nutrition, including fluoridation;
d. The influence on physical and mental health of environment, economic circumstances, personal hygiene and safety;
e. Health education methods;
f. The broader aspects of epidemiology and the preparation of statistical data.
g. Visits to centers and institutes of importance to public health, especially hospitals where the dental student must be familiar with procedure. With the introduction of national health services, insurance and welfare programmes has come a vast expansion of hospital services which the public recognize as a centre for health resources and treatment, including dentistry. This will necessitate in the future a much closer appliance between dental schools, dentists and auxiliaries and their hospitals as part of a community health service.

Having discussed the training of personnel, the challenge then is how to provide appropriate systems of easily accessible preventive, curative and rehabilitative dental services. To quote again Dr. Mahler, the Director General of the World Health Organization, in addressing the Faculty of Medicine of the University of Geneva (October 1976) he said:

"What kind of health system am I talking about? A system which is accessible to all members of the community, which is concerned with the promotion of the health of the whole community, and in which major decisions concerning health are taken and implemented by the community. A system in which the doctor (dentist) is only one component of a team whose every member does what he or she has been trained for and which is oriented towards identifying and solving the priority health problems of the community.

Medical (dental) education, the development of health manpower is only one integral element of the development of health services. "Health manpower" has neither meaning nor purpose in isolation: it is solely an instrument for affecting health care. . .and must be trained in terms of the health services within which it will operate; it follows, too, that the health services will develop according to the type of manpower available to them. No country can any longer afford the haphazard growth of health services, with its attendant waste of human and financial resources, that we have seen in the past. Those services must be carefully planned, and the success of the planning will depend in large measure on developing manpower appropriately fitted to every stage in the development of the health services. Obviously neither the pattern of the services nor the plans for their development can be the same for all countries. National or local health conditions and political and cultural systems will dictate the particular needs and demands that each health service must meet."

Let me give you some statistics of dental health services in Europe (taken from a report presented to the WHO Regional Committee for Europe, Athens, September 1976).

"In Europe as a whole there are 25 dentists for every 100 physicians. At the same time in Scandinavia there are 50 dentists for every 100 physicians; and in Sweden there were in 1965, 70 dentists per 100 physicians. In fact, the utilization of a dental health service seems to be proportional to the living standards of an individual, his family or his community.

The dental health service now accounts for about 7%-10% of the total budget of health services (including the hospital service), a fact which is due to the enormous frequency and great severity of dental disease in the European population. In highly developed parts of Europe, dental caries is universal, and in adults it affects most of their teeth. In children, it reaches its peak in Scandinavia. In central Europe, its severity is about half of that existing in Scandinavia, and in the

Mediterranean area it is half again. The prevalence of periodontal disease, whose symptoms include bleeding gums and loose teeth, is also very frequent but it has not yet been reliably measured in Europe. Only a minor portion of this disease is dealt with and most cases require treatment at a later stage. Some 10%-30% of all children, probably need orthodontic treatment.

Last, but not least, the problem of missing teeth should be considered. In some of the European countries the situation is grave. In the United Kingdom, for example, 37% of all individuals over 16 years of age have lost all their natural teeth. According to a British study, complete dental treatment of a regular patient requires three-and-a-half times as much treatment as emergency treatment where the patient attends only once. If, therefore, the remaining 30% of the population became regular dental patients, the service would need to double its present dental manpower."

APPLICATION OF RESULTS OF RESEARCH AND PRACTICE

Another basic principle which presents a challenge to a health profession is the extensive application of the results of progress in world dental research and public health practice. The basic foundation of progress in any health profession is research and its application for the benefit of the patient and community. In dentistry there are no less than 30 disciplines involved, ranging through the social services, preventing and controlling dental diseases, preventing dento-facial anomalies, the early detection of oral tumors, statistical surveys and studies in the different countries of the world. The application of research directly affects education and clinical practice.

In the current delivery of dental health services, a few examples of the progress resulting from research are as follows:

Examination and Diagnosis A better knowledge of the basic sciences and the use of advanced X-ray equipment and techniques, the use of laboratory tests, caries scores, periodontal indices has enabled the dental team to interpret data and make better judgement for programme planning.

Primary preventive teaching and practice which makes the dental team motivate their patients to understand that they must maintain their own oral health by proper oral hygiene practice and a better understanding of how their diet assists in producing dental disease. The value of water fluoridation - and when this is not possible the use of alternatives - for whole communities. The understanding of plaque and its control, the application of sealants.

In practising *primary dental care* with the improved functional

simplicity of equipment which has been developed on ergonomic principles, the dental team can use new and better restorative materials, carry out more controlled pedodontic, periodontic and endodontic treatments.

The *control of pain* resulting from improved local and general anesthesia, coupled with the use of sedation and relaxants, has made the delivery of dental services much easier. The relief of anxiety and the control of pain are important factors in the improved delivery of dental services.

Social Science has helped the dental team to understand the behaviour and acceptance patterns of communities and consequently how to manage patients.

HEALTH EDUCATION OF THE PUBLIC

Finally the dental profession has a constant and in many ways an unsolved challenge of how to educate the public effectively in dental health care and how to activate communities to participate in dental health programmes.

I would again quote from the WHO Chronicle Health Challenges in 1978-83.

> "In the midst of preoccupations with the establishment of health policies and the formulation of health programs, sight must never be lost of the fact that health cannot be imposed; it can only be attained. For individuals and communities to attain a desired level of health they have to be enlightened. However, the dissemination of health information will not by itself improve the health status of a population. Such information has to be accompanied by the necessary motivation to apply its lessons, and in order to stimulate this motivation, relevant social, cultural, economic and religious factors have to be taken into account. Improved ways must be sought of gaining individual and public confidence and of encouraging greater community participation in the promotion of health, through integrated approaches to individual health education and general information of the public on health matters. In no field is community participation a more important element for success than in disease control."

As stated earlier, it is almost essential for the dental team to study behavioural science and then to persuade governments, communities and the individual to apply its principles to a better understanding of dental health.

The FDI developed in 1967 its policy for developing dental health education programs - a brief survey of the guiding principles for such programs follows:

1. The dental disease problem must be defined.
2. The characteristics of the people must be understood.
3. The resources available to help solve the dental disease problem must be inventoried.
4. Methods, techniques and materials for dental health education must be adapted to the needs and level of understanding of the audience.
5. Dental health programs should be part of a total health program.
6. Planning should be done with the people of the community involved.
7. Coopertion and assistance should be sought from other health workers, educational personnel and community leaders and other organizations and agencies.
8. Dental Health Education should be a part of any dental treatment program.
9. Financial support is necessary.
10. Objectives of the program should be established early.

There are other challenges facing the dental profession, but these are of an internal nature, such as continuing education, over specialization, registration and reciprocation between states and countries as is now being developed between the nine countries in the European Economic Community.

I hope I have convinced you that the social revolution in health has brought many important challenges to the dental profession.

I would conclude by quoting Dr. Lambro, Deputy Director of WHO in his address "The World Situation" to the centenary meeting of the Royal Society of Health in England last year. He said:

> "Man, today, has come to find himself in a particular situation which has its own characteristics, different from those of any other historical period. We need to pay more attention to the psychosocial, political and socio-economic factors which affect the health of individuals and the community - indices which are not tied to morbidity and mortality. There is room for social revolution in health which should pave the way to a more equitable distribution of health resources. Health policies, doctrines and activities of the future could become powerful instruments of social change, of promotion of total well-being and therefore must be an integral part of the total strategy of development.

Flat A
46 Devonshire Street
London UIN 26P
England

Dental Schools In The Seventies

ARTHUR VAN STEWART, D.M.D., Ph.D.

JOHN M. YANCEY, Ph.D.

RANDOLPH LAWRENCE, D.M.D.

Many dentists see the dental schools of the seventies as an enigma. Faculty salaries are rising, old buildings are being replaced with new structures and total operating budgets are impressive compared with those of previous decades. On the other hand, there is concern within the profession that dental schools are not as effective and efficient as they might be.[2] Concern for the quality of dental educational programs may be evidenced by three phenomena. One is the increased frequency of "conditional" accreditation reviews of these programs, the second is the joint decision by the A.D.A. and the A.A.D.S. to do a national survey of dental education to determine what is happening in our dental schools,[3,4] and the third is the increasing failure rate on licensing exams.[5] Many dentists believe that dental schools seem determined to teach everything but dentistry and that dental school administrators seem concerned about everything but dental education.

The pressures which shape today's administrative operation of dental schools are as different from those faced by previous administrators as the problems confronting modern private dental practices are different from those faced in similar offices only a few years ago. To a very large degree, schools of dentistry have become what they are as a result of factors which emanate from sources outside of the "Dean's Office," and often from outside of the school itself.[6,7,8] Many of these factors are not clearly understood by practitioners or, indeed, by many dental educators. The purpose of this paper is to review some of the important changes that have taken place in dental schools during the past decade and to identify several of the major forces that have fostered these changes.

CHANGES IN THE INFLUENCE OF STATE AGENCIES

Since World War II, many dental schools have found it necessary to turn to their respective state legislatures for much needed financial

Dr. Stewart is a professor and assistant dean, University of Louisville, School of Dentistry. Dr. Yancey is a professor and Director of Education, University of Louisville School of Dentistry. Dr. Lawrence is an assistant professor, University of Louisville School of Dentistry.

support.[9,10,11,12] The list of such schools includes several dental schools previously considered completely "private" and others which had some support from city or county treasuries. These state funds have provided much needed resources to the schools, but have simultaneously placed these previously independent schools under both formal and informal pressures from their respective state agencies. Three of the most common of the pressures from these agencies are: 1) restrictions on tuition increases, 2) mandatory state residency requirements for a fixed (and high) percentage of admitted students, and 3) forced participation in state-wide planning and budgeting procedures.

State funds which are provided to schools in the form of tuition subsidies allow students to pay a decreasing percentage of the actual cost of their education.[13] Funds used in this fashion are popular with students (and voters); yet this form of support merely replaces private tuition with state funds and provides little or no direct benefit to the schools themselves. In theory, such tuition maintenance prevents dentistry from becoming an educational program limited to "select" segments of our population and therefore is not intended to assist the schools, but rather to meet broad based societal needs.

Many dental educators believe that mandatory state residency requirements changes the composition of classes and effectively blocks consideration of all but a few out-of-state applications. State residency requirements reduce the size of the pool of applicants for a dental program; and, necessarily, reduce the school's ability to control the characteristics of its entering students. Increasing the large in-state component of an entering class creates a more culturally homogeneous student body. This policy may, in some instances, result in the acceptance of students who would not be accepted if the applicant pool was larger. An increasingly important predictor of whether any individual college student will gain admission to a dental school is his/her state of residence. On the national level, this trend may eventually disenfranchise dental candidates from those states that do not have their own dental school.[14]

Dental schools which accept funding from state agencies may also be required to participate in state-wide planning procedures and otherwise inherit problems associated with being part of a much larger organizational unit. Dental schools in some states, for example, cannot add or significantly modify their basic educational programs without formal prior approval by their departments of higher education. In some cases, program changes require two to three years of negotiation with state representatives. This constraint drastically reduces the flexibility and reactivity of the planning process within the

dental school. At times it also may force the schools to agree to solutions for their educational problems that are in fact more acceptable to the state agencies than they are to the faculty, students or administrators of the school itself.

Another dilemma for dental school administrators is posed by the frequent and sometimes severe fluctuations in state appropriations. Such fluctuations may be related to the general economic status of the state, to changes of key personnel within the state government or to redefinitions of priorities within the state-wide system of higher education. On many occasions, broad ranging decisions and priorities may be closely tied to the larger programs (e.g., the community college system or the liberal arts programs) which largely ignore the specific problems faced by a professional school. Often the priorities and planning which make sense on the "macro" level have little in common and may even be antithetical to the specific needs of dental schools. When this happens, the dental school is forced to operate under general guidelines and regulations which it might prefer to reject if it were independent of state aide.

Involvement in a statewide system also adds another bureaucratic level of reporting and additional administrative activities to those traditionally borne by dental schools. If these reporting systems and other associated responsibilities are sizable, a measureable and perhaps significant percentage of state funding may be unintentionally consumed by the state itself through increased administrative demands on school officials, staff and faculty. One of the major reasons for larger administrative budgets is the rapidly proliferating reporting requirements by various state and federal agencies. As practicing dentists easily recognized, state funding of any activity usually means state control or state influence over many decisions formerly in the hands of the profession alone.

In spite of these several difficulties associated with the acceptance of state monies for dental education it is clear that without such state support, few dental schools would be able to stay open. Neither federal support nor increased tuition could replace the funds currently provided to those schools reliant on state resources. Participation in state wide planning units most definitely has many advantages to the students enrolled in the D.M.D. programs, especially in the areas of interdisciplinary or cojoint programs.

CHANGES IN THE INFLUENCES OF THE FEDERAL GOVERNMENT

Federal funds provide a significant portion of a typical dental school's finances. While less predictable than tuition income and

clinical income, federal funds are somewhat more predictable than the funding produced by the legislative mechanisms in some states. Federal dollars have been the basis for the modernization of older dental schools and the birth of the many new schools. Federal funds have also been important for "special projects" for a wide variety of educational training programs, research grants and numerous other programs common to most dental schools. The priorities of the federal agencies, however, change as the government itself changes and as the perceived needs of the population are interpreted and projected on to the dental training programs. Such goals as shorter (three-year) programs, increased production of new dentists (larger classes) and the creation of more socially sensitive dentists (off campus training programs) are all priorities which have been established by the federal government and pursued through its agencies.

In addition to these clear influences and pressures is a host of less obvious pressures. Affirmative action policies are now in place in every dental school in the country. These policies govern in detail how faculty and staff positions are developed, recruited and filled. The process is designed to give every citizen an equal opportunity to apply for every job, but these policies clearly pose new demands upon school administrators. The task facing deans and their search committees is now two or three times more difficult than it has been previously. Schools must now file a "recruitment plan" for each major position. These plans not only call for clear job descriptions, proposed titles, training requirements and related information, they also require balanced search committees and clearly identifiable "minority advocates" for each search committee. These plans are approved outside of the schools themselves and require a substantial amount of administrative time and effort even before the position can be announced publicly. Each position must also be advertised in the journals, which delays the initial stages of the search and adds extra costs to the school. In some cases, the search committees must provide detailed written evidence of why each candidate was rejected and how the final choice was made.

Just as there has been a dramatic increase in the number of court cases involving practicing dentists, there have also been numerous legal actions involving students and student rights. The 1974 federal "open records law" now requires schools to allow their students to review all of their student files if they petition to do so.[15] Because of this policy, many faculty now refuse to write letters of recommendation for students, since these letters eventually enter a student file which is open for inspection by the student. If a letter of recommendation includes negative comments which are viewed as disparaging or

defaming, the teacher or administrator who wrote the letter of recommendation could be sued by the student. In addition to reviewing his file, a student may request a copy of his complete student file. This same sort of constitutional guarantee has been extended into proceedings relating to hearings on cheating or academic deficiencies. After schools have spent many faculty hours developing extensive policies and procedures, the policies must be reviewed or approved by their school's legal affairs office to assure that actions affecting students cannot lead to any legal action against the school.

The list of federal influences over decisions in the schools is too long and too subtle to ever complete. In fairness, many of these changes clearly have helped the schools to do a better job. However, they have also added another administrative burden to the schools and consume important resources which otherwise could be used to improve educational programs. Still more serious is the extent to which these regulations force school administrators into apparent conflicts between organized dentistry, alumni, their own faculty and the government.

CHANGES IN STUDENT BODY

The student body of the typical dental school has also changed over the past decade.[16,17] First, most schools have agreed to increase the size of their classes substantially in order to be eligible for certain kinds of federal funding. Almost every dental school in the country has increased its student body by more than 10%. Those schools which accepted federal support for new construction grants agreed to even greater increases in the number of students they enrolled.

The composition of these classes has also changed significantly. As a result of increased social awareness, along with prodding by minority advocates and federal agency guidelines, there has been a large increase in the number of women students[18] and in the number of minority students enrolled.[19] As the composition of classes has changed, the issues requiring administrative resolution have increased in variety and complexity.

Another pressure on dental school administrators and dental school faculty is the changing role of students in the governance of dental schools. Students now regard themselves as full members of the dental school community. Frequently students are allowed, indeed encouraged, to work on major committees (such as curriculum committees and search committees). Students also have strong and viable government organizations of their own, which may be provided

with an annual budget from the school and secretarial assistance. Many schools have been compelled to establish formal (almost legalistic) student grievance procedures to help resolve differences among students and between students and faculty (or students and administrators). In a large number of schools, students have a strong and clear voice in personnel decisions pertaining to the continuance, promotion and tenure of faculty. Lack of student support can bode ill for any instructor, clinician or dean. Students are no longer the passive recipients of administrative or faculty decisions. External legal requirements based upon constitutional and human rights now specify in detail due process requirements for student dismissal proceedings or other disciplinary actions to be taken against students. Although student activism seems to have subsided somewhat since the Viet Nam War era, dental school administrators generally recognize that students have a great deal more influence within the dental school than was true a few years ago.

Students also have begun to constitute a more potent consumer group. In some schools, students have the right to have a course cancelled by documenting serious problems in the course and reporting these perceived deficiencies to the appropriate committee or administrator. Another aspect of this consumerism is the demand for more detailed information about their courses and their curriculum. In an increasing number of schools, students have grown to expect clear information on courses they are entering. This information may include the objectives of the course, the exact schedule of examinations and due dates for laboratory projects and the specific criteria used to determine the final grade. In some instances a students may contract at the beginning of a course for a certain grade. In other instances, he/she may request (and be granted) a nongraded course instead of a graded course.

These changes have combined to erode the traditional authority of the teacher and also the authority of the dean and his administrative staff. It is not unusual for the faculty and the administration to be more sensitive to student pressures than they are to pressures from alumni and other similar groups which historically had a very large influence over certain decisions within the dental schools.

CHANGES IN CURRICULUM

Many factors have contributed to the changing curriculum in dental schools. One of these, of course, is the constantly changing base of scientific knowledge used by the professions. It is not necessary to discss here the much heralded explosion of knowledge except to note that is *has* drastically changed instruction in almost every major

course found in the dental curriculum. Some scientists claim that approximately one half of all information taught in the evolving disciplines is inaccurate within a period of seven years. New discoveries in their fields add new information and improve the utilization of earlier information. Changes in curriculum are also closely related to changes in the character of the faculty responsible for conducting the educational program. In many ways the faculty teaching in today's dental schools are quite different from those who taught many of today's practitioners. For example, today's schools include many more instructors with specialty training and with second doctoral degrees than has been true in the past.[20] The PhD/DDS teacher was relatively uncommon until after the 1960's. Now almost every dental school has more than one such faculty member. Faculty who have advanced training (either research or specialty) are clearly more likely to include advanced concepts and new information in their courses, in addition to the basic data taught previously. Because of the expanding literature produced by dental researchers and the increasing training possessed by members of the faculty, contemporary curricula contain a large number of courses and clinical activities that were uncommon (or nonexistant) a few years ago.

Student interest have also contributed to the changing complexion of the contemporary curriculum. In many schools students now have the right to request the development and addition of new courses which they wish to take. Much has been said about student demands for relevancy. Student demands for other kinds of curricular change are seldom mentioned in the literature, although they are common. There is evidence that student members of curriculum committees often ask for advanced concept instruction and other demanding courses in their schools. It is also true, of course, that student pressure is sometimes in the direction of reducing requirements in areas that they do not perceive as being essential to their training.

The American Dental Association exerts a major influence on curricula in dental schools. The ADA, through its Councils and Commissions, has a clear and highly significant control over the programs offered by dental schools. This influence is most clearly demonstrated by the accrediting process but is also evident in the form of numerous guidelines, policy statements and related position documents which are developed within the ADA and sent to the schools. In some instances, the schools find themselves in the middles of a three-way confrontation between the state agencies (who help fund the schools), the ADA (which accredits them) and the federal government (which also helps fund them). On some occasions the students and/or faculty attempt to move the curriculum in directions

different from any of these three forces, causing even more discomfort and uncertainty.

As the scope of modern dental practice changes, so too do the schools. In recent years, schools have added time to their programs for Oral Medicine, Behavioral Science, Patient (and auxiliary) Management, Hospital Dentistry, Physical Diagnosis, Periodontology, Community Dentistry, Clinical Orthodontics, Oral Biology, and many other disciplines which were not taught at all (or as extensively in the past). These additions have almost universally produced a concomitant decrease in the percentage of time and effort allocated to the traditional dental courses.

The federal government has had both overt and subtle influences over curriculum content through the process which awards grants and contracts to the schools. Historically, federal requirements were only tied to specific kinds of grants and contracts and there were no conditions on the basic (capitation) grants which almost every school utilized to support major parts of its program. Federal legislation now has been developed which, for the first time, requires specific curriculum changes in all schools seeking these basic grants.[21,22] There are many "Washington watchers" who feel that there will be more federal involvement in curricular matters in the near future.

In addition to these forces, there are educational as well as economic factors at work in curriculum planning. For approximately 15 years dental schools have been trying to adopt proven educational techniques that will help students to more fully understand and to more effectively retain that which they are taught. Pedagogic concepts have changed both the time commitments to various activities and the kinds of processes by which students learn. For example, dental schools today rely much less on the traditional lecture format than they did a few years ago. Seminars, clinical laboratories, closed circuit television modules and several modes of self-instruction have all supplemented or resplaced portions of the traditional lecture series. Some of the new approaches which have proven to be educationally effective are, unfortunately, also proving to be too costly. Schools have always made efforts to conserve their limited financial resources, but today there is a great deal of pressure to used educational techniques which are not "labor-intensive." More and more dental school administrators are selecting educational systems which are cost effective. This means that schools are attempting to find ways to minimize the use of expensive faculty and to transfer as many of the duties of highly paid teacher/clinicians as possible to less costly para-professional staff personnel.

In an effort to make curricula economically practical as well as

educationally effective, many schools are adopting managerial systems patterned after those in profit/incentive driven businesses and which are validated by cost-benefit analyses. The results of these analyses frequently determine the continuation, termination or need for extensive modification of portions of the curriculum. Those portions of the curriculum which are the most costly, but which can not be eliminated, are carefully monitored by the officers of the school while various alternatives are explored which might reduce their costs to the school.

If each of the various components of a typical dental curriculum were to be classified as either having resulted from internal administrative action or from those external influences discussed above, a substantial portion (perhaps a majority) of the curricular changes would prove to be exogenous in origin.

CHANGING ROLES OF DEANS, FACULTY AND ALUMNI

For perhaps three quarters of a century, deans of dental schools had almost complete authority and responsibility for their schools. Deans tended to be omnipotent and patriarchal. Typically, once a man became dean, he could plan to serve in this capacity until he chose to retire or until he voluntarily resigned. The individual faculty members considered themselves to be the employees of the dean and were subject to his wishes and his displeasures. The deans, in turn, were subject to control by their direct superiors and very frequently by the collective voice of their alumni, who (if they provided an important source of revenue to the school) were clearly a force to be considered.

A variety of forces seem to have combined to reduce the traditional authority of today's deans; and for this reason, the dean of the nineteen seventies is in many ways quite different from the deans that preceded him. For example, "deaning" is now more likely to be a short term position. A man who has been dean of a school for more than ten years is the exception rather than the rule. Some schools have consumed deans at the rate of almost one each year.

Deans tend to have less inherent authority than they had historically. One of the major reasons that deans can no longer "run" their schools is the greatly increased role of the faculty in school governance. This stronger role for faculty is itself related to several factors. One of these is the growing power of such organizations as the American Association of University Professors (AAUP) and similar organizations which serve as faculty advocates. The inclusion of dental school faculty in collective bargaining units has also strengthened their position within the schools. Another factor which strengthens the voice of the faculty is the mobility of the faculty.[23]

Mobility is enhanced by the larger number of schools which are bidding for a teacher's skills. When these skills are in short supply and there is a willingness to "move on" if demands are not met, a dean can ill afford to ignore the wishes of his key faculty. Unlike most university colleges, schools of dentistry still face severe competition in the recruitment of qualified faculty. The supply/demand ratio generally favors the faculty in any confrontation with the dean.

A seldom noted, yet very important, cause of the changing role of dental faculty is the incorporation of dental schools within the greater university community. This has resulted in dental instructors adopting the collective self concept, perceptions, attitudes and role in school governance which have developed over the centuries by faculty in other colleges in the university. Briefly stated, these notions embody the concept that the true trustees of any school are the *current faculty* rather than the dean. As an example of this change, dental professors now sit on Boards of Trustees, meet directly with university presidents and sometimes negotiate directly with state agencies and their officers. In each case, the authority of the teacher may supervene that of the dean himself.

Faculty are also more likely to be included in long range planning, in fiscal planning, and in the short term allocation of school funds. Although each school handles its affairs differently, there is some evidence that the faculties of some schools consider the dean a designated caretaker of their school, a caretaker who is subject to their wishes as well as to the wishes of the university president and of the state and federal agencies. The availability of tenure, of course, provides extensive protection for those faculty who disagree with a dean. When the individual members of a faculty are well represented by the AAUP or similar organizations, a dean may find that his options are severely restricted and that members of the faculty may be extremely independent as long as they properly fill their academic responsibilities. In such a setting, the collective voice of the faculty can command the immediate attention of the central administration of any university. Some deans have been forced to resign from their appointed offices as a result of a vote of no confidence by their faculty.

The voice of the alumni, on the other hand, has eroded over the years. This phenomenon is not unique to dentistry and would seem to be related to a decreasing reliance on alumni donations and a general diminution of alumni interest in their alma maters.

The diminished power of the office of the dean, the increased role of the faculty and the decreasing role of alumni have produced important changes in the systems of governance and administration of the dental schools in the seventies.

SUMMARY

As these examples have shown, the forces which shape the activities within the dental schools of this country have changed a great deal over the past decade. These forces are frequently unseen by those who are not themselves active in dental school affairs. Yet these factors are often the reasons behind major administrative decisions and behind many of the seemingly strange or apparently illogical activities within our schools. It is important for all members of the profession to recognize that these forces do exist, that they are in many cases very substantial, and that many of them were not present a few years ago. As dental school alumni, all dentists should try to determine if these forces are being helpful or harmful to their schools, to the profession and to the public. In the vast majority of cases, decision making in the schools is a logical product of the various forces brought to bear on each decision. In order to understand these actions, it is necessary to recognize these forces and to understand their impact on the school's decision-makers.

In his often cited book on organizational management, Douglas McGregor states, "If there is a single assumption which pervades conventional organizational theory, it is that authority is the central, indispensable means of managerial control."[24] Max Weber has defined "authority" as "the probability that a command with a given specific content will be obeyed by a given group of persons."[25] Today's dental school dean no longer has the authority he enjoyed in the recent past. As Chester Barnard has observed, an administrator has only that authority granted to him by those affected by his administrative decisions—and this includes subordinates as well as superiors.[26] The contemporary dental school administrator may only exercise authority in those areas not clearly the province of some other groups or agency. His degrees of freedom have been so reduced that with increasing frequency decision-making is largely a matter of adjudicating the conflicting demands of others. Contrary to a recent article by F. Reif, we are not without leaders in higher education; rather, our educational administrators are almost never free to lead![27]

Although this article has presented only a few examples of the major forces at work in our schools today, it should assist both practitioners and faculty to understand that school administrators need informed suggestions and enlightened advice. Suggestions and criticisms which are based upon previous models of dental education, which no longer exist in the seventies, can only serve to divide the profession and ignore the common goal of both practicing dentists and dental educators.

REFERENCES

1. _____, U.S. Dental Schools Build Firm Foundation in Education, Journal of the American Dental Association, 94:826-841, May, 1977.
2. Ingram, Rex, Are Schools Providing Adequate Clinical Preparation of Dental Students?, Journal of the American College of Dentists, 44:116-128, April, 1977.
3. Brown, William E., National Dental Curriculum Study, Journal of Dental Education, 40:592-594, September, 1976.
4. _____, Dental Curriculum Conference, Journal of the American Dental Association, 94:1088-1090, June 1977.
5. Division of Educational Measurements, Licensing Examinations of Recent Graduates by State Board 1950-1974, 1975-1976 Annual Report on Dental Education, Supplement #11 (Trend Analysis), p. 17, 1976.
6. Dunn, Winfield C., Public Pressures on Dental Manpower Production: A State Perspective, Journal of Dental Education, 40:711-715, November, 1976.
7. Abelson, Philip H., Federal Intervention in Universities, Journal of Dental Education, 40:71, February, 1976.
8. Bruce, Harry W., The Need for Standard Methodologies for Determining Individual Dental School Educational Costs as a Basis for Federal Support, Journal of Dental Education, 39:209-220, April, 1975.
9. Redig, Dale F., The Dollar Crunch: Implications for Dental and Auxiliary Education, Journal of Dental Education, 39:225-229, April, 1975.
10. Johansen, Erling, The Private Dental Schools - An Uncertain Future, Journal of Dental Education, 39:513, August, 1975.
11. Galagan, Donald J., The High Cost of Dental Education, Journal of Dental Education, 39:199, April, 1975.
12. Gonyea, Meredith A., The Cost of Dental Education - The Challenge and the Methods of Response, Journal of Dental Education, 39:202-208, April, 1975.
13. Division of Educational Measurements, Average Institutional Cost per Dental Student Compared to the Average Annual Dental School Tuition 1965-1975, 1975-1976 Annual Report on Dental Education, Supple. #11 (Trend Analysis), p. 16, 1976.
14. _____, Hawaii Authorizes Funds for Dental Education of Hawaii Residents, Journal of the American Dental Association, 93:227, August, 1976.
15. Federal Registrar, Vol. 41, #118, Thursday, June 17, 1976.

16. Division of Educational Measurements, First Year Enrollments in United States Dental Schools 1950-1975, 1975-1976 Annual Report on Dental Education, Supplement #11 (Trend Analysis), p. 3, 1976.
17. Division of Educational Measurements, First Year Enrollment Projections 1976-1980, 1975-1976 Annual Report on Dental Education, Supplement #11 (Trend Analysis), p. 4, 1976.
18. Division of Educational Measurements, Women in Dental and Medical Schools 1968-1975, 1975-1976 Annual Report on Dental Education, Supplement #11 (Trend Analysis), p. 10, 1976.
19. Division of Educational Measurements, Minority Students Enrollments, 1975-1976 Annual Report on Dental Education, Supplement #11 (Trend Analysis), p. 14, 1976.
20. American Association of Dental Schools, 1974-1975 Directory of Dental Educators, 1975.
21. Doerr, Robert, Another Step Backward, Journal of the Michigan Dental Association, 58:601, December, 1976.
22. Packer, Merrill W., Federal Legislation Affection Dental Education, Journal of the Alabama Dental Association, 60:35-38, October, 1976.
23. Till, Michael J. and Hinding, John H., Faculty Mobility in Dental Education, Journal of Dental Education, 39:155-158, March, 1975.
24. McGregor, Douglas, The Human Side of Enterprise, (New York:McGraw-Hill Book Co., 1960, p. 18.
25. Weber, Max, The Theory of Social and Economic Organization, ed. Talcott Parsons (New York: The Free Press, 1947), p. 152.
26. Barnard, Chester I., The Functions of the Executive, (Cambridge: Harvard University Press, 1938), Chapter 12.
27. Reif, R., Where are the Leaders in Higher Education?, The Chronicle of Higher Education, February 28, 1977, p. 32.

University of Louisville
School of Dentistry
Louisville, Kentucky
40201

Quality and Perceived Usefulness and Utilization of Continuing Dental Education: A Response

RICHARD ADELSON, D.D.S.
FRAN WATKINS, Ed.D.

Weinstein, Milgrom, Ratener, Read and Morrison are to be commended for their recent article "Quality and Perceived Usefulness and Utilization of Continuing Dental Education" which appeared in the October, 1977 (44:4) issue of the Journal of the American College of Dentists. The authors have made an important contribution by attempting research in an area of dental education in which many opinions have been stated about the expectations and potential outcomes of continuing dental education, but where there has been very little objective investigation to substantiate or refute these statements. Since future studies will be oriented increasingly to the effect of continuing dental education on the quality of dental care, this particular paper will provide not only an important citation, but a research methodology for future studies as well. It is for these same reasons that we feel it essential to take issue with a number of aspects of this study related to the author's interpretation of their results and features of their methodology. Our concern is based on the possibility that the less than careful reader of this article might conclude that the participation in continuing education activities will produce an increase in the quality of dental care.

The study finds that practitioners who attend continuing education courses are also the ones who demonstrate a higher technical proficiency. This is not surprising, for continuing education directors have often said that, "the people who show up for continuing education need it the least" and "it's the same faces year after year who participate in continuing education." However, it should be emphasized that finding this correlation between the variable, CDE involvement, and the level of proficiency, shows only that a

---

Dr. Adelson is Coordinator of Medical and Dental Education, Veterans Administration Northeast Regional Medical Education Center, Northport, N.Y. Dr. Watkins is Director of Continuing Education, College of Dentistry, University of Oklahoma, Oklahoma City, Oklahoma.

relationship exists and that increasing one of the variables will not necessarily cause a comparable increase in the other. It is possible that both attending continuing education courses, whether active or passive types, and quality dentistry are indications of still a third variable.

If they had chosen to do so, the authors might also have found a similar correlation between those practitioners who are state dental association officers and higher technical proficiency; or dentists involved in upgrading the community's understanding of dentistry and higher technical proficiency. One could also make the case that attendance at continuing education courses, participation in dental society and community activities and provision of quality care are all the result of a different factor called professionalism. In effect, professional participation and quality care may be indications of the ways the dentist relates to the role of being a member of the dental profession. Furthermore, since these individuals are already among the fifteen to twenty percent who currently participate in continuing dental education, one could not expect that mandating continuing education for the currently non-attendees would enhance the level of patient care.

Another questionable aspect of the study was the choice of the measure of technical proficiency. Diagnosis of active decay and producing quality margins on crowns and amalgams are basic dental procedures. One would expect any dentist who has attended an accredited dental school and passed a state board examination to have achieved competency in these areas at the time of graduation. Their continued proficiency or lack of it would more probably be related to internal motivation and interest in their work rather than the number of continuing education courses they may have attended. If there was an attempt to demonstrate that proficiency in these basic ares were the result of continuing education activity it would have been more meaningful to examine whether the dentists in the study had taken courses in the diagnosis of decay or basic techniques or crown and bridge procedures.

The authors also conclude that "active learning" in any form, seems to be the mode best suited to practical application. It appears that they were implying a cause-effect relationship of active involvement guaranteeing a higher level of proficiency. It must be pointed out that all the forms of continuing education involvement which were included on the list are legitimate, useful forms of continuing dental education. It has been our experience that dentists may use all these forms when they go about solving a problem. Their potential application and usefulness must be put in proper perspective and will

vary even among participants in the same course. For example, lectures may be at the level, in the taxonomy of education, of recognition for one practitioner and may provide the level of analysis and evaluation of information for another. Or, consulting with detail men may be an active pursuit on the part of the practitioner who sees that as part of an overall schema to solve a particular practice problem. The reasons a practitioner attends lectures may be categorized at a number of levels. For example, he may be (1) attending the lecture to satisfy the need to identify with members of the dental profession who exhibit a professional level to which one aspires; (2) the attendance may be based on the desire to obtain more information about an individual's work, and thus be able to pursue it at greater lengths and with other methods; (3) the attendance may be based on the need to compare and make judgments about his/her techniques vs. the clinicians' techniques; or (4) the information may be used to decide how to continue—we refer to this as continuing motivation in the pursuit of information to apply it in some sense in the dental practice. In continuing professional education, the uses made of the information will depend on individual need. The purpose, therefore, of continuing education is to respond to professional needs rather than attempting to solve the problem of quality care.

The current situation in which continuing dental education is being treated more and more frequently as some type of quality control measure is based upon assumptions regarding its effect. The literature available provides little assistance. Descriptions of continuing education ranges from one context as a punitive measure for those who have behaved unethically in the practice of dentistry to opportunities for social gatherings. The dental profession has proceeded to concern itself with standards and regulations for implementing mandatory programs of continuing education and setting up guidelines that could be used to enforce this requirement based on relicensure with little attention given to the fact that continuing education should serve the profession and not be used as a measure of the competency of their members.

Emanating from this situation has been, and will continue to be, considerable interest to document the effect of continuing education upon practitioners' competence. Unfortunately, the question this raises is somewhat analogous to asking "what effect did a single elective course at the senior level of undergraduate training make in the level of patient care provided by the person in dental practice?" It is impossible to sort out courses and isolated activities and attempt to judge a dentist's quality care on that type of involvement. Although we do feel that this research study has provided additional data which

(continued on page 110)

The Role of State Boards of Dentistry

J. EARL WILLIAMS, D.D.S., Dr. P.H.
THOMAS J. ZWEMER, D.D.S., M.S.

> *"Knowledge, skill and judgment are used by tradesman, craftsman and the financier in their affairs as well as by the professional in his. However, the consequences of a professional act are personal, not material, and because of this, the use of knowledge, skill and judgment by the professional has moral values. It is upon this basis singularly that society accords special privilege to the learned professions in areas of law, health, religion and engineering."*

So said Dr. Robert J. Nelsen in an address to the American College of Dentists in Houston, Texas, on October 27, 1973. A trade becomes a profession when society is willing to delegate those particular functions to a special group rather than accept the responsibility themselves. With this delegation society grants special privileges such as self-government, control of its own educational requirements, its own literature, and establishment of practice credentials. In this arrangement, personal self-interest is the antithesis of a professional.

According to the wishes of society, Dentistry as a profession is not an industry or trade and therefore does not consist of "providers" and "consumers". Professional service is not a commodity. The doctor-patient relationship is not a sentimental ideal. It is a special arrangement based on practicality which has evolved from the days of Hippocrates. No patient is willing to accept a "lowest-bidder" approach to his very personal life-affecting needs. No doctor is willing to substitute impersonal contracts for a personal, trusting, ethical involvement with his patient. Dentistry is not a business.

Dr. Zwemer is Associate Dean for Academic Affairs and Dr. Williams is Chairman of the Department of Community Dentistry at the School of Dentistry of the Medical College of Georgia, Augusta, Georgia.

REGULATORY OVERVIEW

The term "regulatory" is inappropriate when used to describe the health professions and dentistry in particular. To use terms such as "regulatory boards", "regulations", and similar phrases, implies that dentistry is an industry or trade and as such should be governed accordingly. Dentistry is a health profession and has been granted self-governance by society. This fact does not place dentists "above the law" without accountability. To the contrary, every dentist is totally accountable to each individual patient. And the Boards of Dentistry within each state are accountable to the Governor who appoints them within the criteria of the Dental Practice Act formulated by the State Legislature. Thus through the representative process, which is the cornerstone of democracy, society stipulates who will practice dentistry and under what conditions. Boards of Dentistry exist for the protection of the public.

Another facet of dentist accountability exists at the local or community level. Peer review committees (grievance committees) mediate doctor-patient disagreements and misunderstandings. Such methods have worked successfully although not perfectly. Most dentists can and do represent the public in cases where professional and public interest diverge. Some cannot. But it was the dental profession that provided for public protection in the first place. The self-serving dentist is the exception and not the rule.

COMPOSITION OF STATE BOARDS

It is appropriate that Boards of Dentistry be composed primarily of dentists within the philosophy of professional self-governance. Highly specialized skills and experience are necessary for recognizing and promoting good patient treatment through licensing. Similar practices exist in other professions. Judges serving on high courts are not legal neophytes. By the same token, a Justice of the Peace with 30 years experience would not be a candidate for the Supreme Court. Traditionally society has been willing to delegate responsibilities to the professions for making wise judgements. The best, most experienced professionals should have this responsibility.

However, experience and competence do not ensure infallability. Boards of Dentistry must make every effort to be open and accessible to the public they serve. "Sunshine" policies should exist in Board operations. Lay representation on Dental Boards would help in this regard. But such lay positions should be well-defined and limited to the non-technical aspects of the Board's functions. However, the presence of a lay person(s) does not guarantee a "virtuous" Board. It is possible that lay persons could introduce their own biases.

Dentists are not reluctant to add Dental Hygienists to Dental Boards to examine Dental Hygienists. It should be remembered however, that Dental Hygiene is an auxiliary function to Dentistry. Dental Hygienists are not permitted to establish their own practices independently of a dentist supervisor. Therefore, since dentists are responsible for their competence and performance, it is reasonable that dentists act as licensing examiners for Dental Hygiene applicants.

It is more important to maintain separation of powers than for dental educators to be present on the Board. However, a good liaison arrangement is both necessary and desirable between the Board and the dental schools within its jurisdiction. The dental schools and the Boards have separate but distinct contributions to make to the profession.

Dental specialists should not be excluded ipso facto from Board membership but no attempt should be made to have specialty representation. Boards examine the broad range of skills of dentist candidates which are the purview of the well-qualified general practitioner.

METHOD OF SELECTION AND REMOVAL OF BOARD MEMBERS

Selection of Board members should be made by the Governor from an acceptable list of nominees. The dental nominees would come from the constituent districts of the State Dental Association representing qualified dentists who have demonstrated both public and professional concern. This process would preserve representation from the profession and society. Lay representative(s) would be nominated by an appropriate lay-advisory group to the Governor on health matters.

Removal from the Board would be by the Governor for cause utilizing criteria based on the Dental Practice Act and the By-Laws of the Board.

FUNCTIONS OF STATE BOARDS

The three functions of dental licensing boards are admission to licensure, renewal of licensure, and discipline. Authority for these functions comes from the State Practice Act which includes policies on licensure and relicensure. The main function of the Board is for testing and credentials.

Individual state boards are not involved directly in accreditation of dental schools. This function is performed by the Commission on Accreditation of the American Dental Association. Some indirect influence exists through the constituency of the Council. It is made up of four members of the American Dental Association, four members of

the American Association of Dental Schools, and four members of the American Association of Dental Examiners. It is this latter association that provides input from state boards.

The method of examination by Board examiners has evolved through experience and rational judgement. Most Boards employ two important validation techniques. Cognitive skills are evaluated by the National Board Examinations under the auspices of the American Dental Association. Candidates take this extensive examination in biological and clinical sciences as dental students. Based on the satisfactory results of this examination, the Board may waive any additional testing on knowledge. The balance of the Board's examination of the candidate is based upon clinical skills. Here it is important that the examiner observe the candidate's performance directly in order to determine the management of the diagnosis, health history, and treatment plan. The patient has considerable influence on the outcome of treatment through his own level of cooperation. Hence in fairness to the candidate, it is important that the examiner be aware of the patient-doctor interaction during the entire examination procedure.

The higher failure rate in general that is observed among out-of-state applicants, cannot be glibly attributed to "racial and other forms of discrimination". Many out-of-state applicants are relocating after several years in practice and considerable time after graduation. Others are moving because of personal and/or professional problems. Both categories carry high risks of failure. Non-resident applicants are faced with the additional complications of travel, unfamiliar surroundings, and difficulties in securing suitable patients.

The majority of the Board's membership should be dentists since the preponderance of the Board's activities deal with technical matters relating to patient treatment. The development and evaluation of scientific knowledge and technical competence must be the domain of the dental profession through education institutions and licensing boards. Other matters of mutual competence and concern could be addressed by both lay members and dental members of the board. Some of these matters would be to ensure nondiscrimination, to determine levels and distribution of professional manpower, to assess moral and ethical qualifications of professional manpower, and to discipline professional manpower for incompetence, fraud, etc.

The Board should promote professional competence among the practitioners within the state. However, some of these functions are best performed through the state and local dental societies. Continuing education is essential for practitioners. This activity lies within the state dental association as it establishes minimal standards

as requirements for its membership renewal. The Board reviews these Continuing Education activities periodically as an integral part of the relicensure process.

In a similar way, the Board promotes professional discipline and quality control through local dental societies. At this level, peer review and grievance committees are established to monitor and serve a defined area of dentists and patients. Through the appeal process the Board can be involved. However, the majority of actions are resolved at the local level. Decentralized peer review leads to faster resolution of patient-dentist misunderstandings.

BOARD RESOURCES

The opportunity and availability of Board service should not depend upon the financial status of the board member, ie., the ability to cover his own expenses while participating in official business of the Board. Hence members should be adequately supported financially during times of Board duties. Also, they should be encouraged and assisted to attend continuing education courses that would benefit the public by improved accomplishment of Board activities.

Regional boards conserve both financial and professional resources. They should be supported and encouraged. However, federal licensure would be too centralized and non-responsive to state and local enforcement needs. The desirable educational-board relationship that now exists in most states could not adequately function in a federal context.

HOW SHOULD BOARDS BE HELD ACCOUNTABLE?

Terms of Board members should not expire at the same time as the term of the Governor who appointed them. They should be staggered to minimize the impact of possible political bias.

The best insurance against potential improprieties of the Board is the constant operation of the "sunshine" principle. All meetings and procedures of the Board should be open to the public. An exception would be any deliberations that might damage the reputation of a candidate by the release of private information to the public. In this manner accountability would have come full-circle. Society which grants professional privilege would have unlimited access to professional deliberations.

SUMMARY AND CONCLUSIONS

1. Society has granted to the professions special privileges of self-government, control of its own educational requirements,

responsibility for its own literature, and establishment of practice credentials (licensure).
2. There is no health industry. Dentistry is not a business. Health professions are made up of doctors and patients - not "providers and consumers".
3. The profession of dentistry cannot be regulated by definition. However, it can and must be accountable to society which established it.
4. The majority of Board members should be dentists. Lay representatives would be acceptable although their presence would not guarantee "virtue".
5. Boards should be accountable through the "sunshine" principle. The public should have access to all Board activities except those which would endanger the reputation of candidates or practicing dentists.

School of Dentistry
Medical College of Georgia
Augusta, Georgia 30902

The authors wish to acknowledge the invaluable contribution to the manuscript preparation by Drs. Judson C. Hickey, Leon Leonard, Carl O. Davis and Jack D. Zwemer. Their background briefings, conceptual input and manuscript review materially aided the authors in bringing the manuscript to maturity.

Continuing Dental Education
(continued from page 104)

recognizes a relationship between continuing dental education preference and proficiency, the basic question regarding the potential outcomes of mandatory continuing education remains unresolved. The conclusion, drawn by the authors of this study, that imply that their research results might begin to form the basis for "quantitative requirements for professional development" we feel are unwarranted.

Veterans Administration
Northeast Regional Medical Education Center
Middleville Road
Northport, New York 11768

Can Academic Distress be Predicted Prior to Dental School

PHILIP S. HORTON, D.D.S., M.S.

Dental students are selected chiefly on the basis of their academic record - cumulative grade average, science grade average, and dental aptitude tests (DAT) scores. This practice is defended on the basis that pre-dental grades are the best predictor of dental school grades. Therefore, one would assume that students with the lower pre-dental grades would be the ones most likely to "drop-out" or be dismissed. This study will attempt to look at dental students having irregular progress and see if they are, indeed, in the academic "low end" of the class.

Admission committees also concern themselves with non-grade attributes of students, usually to a lesser degree than grades and with much less precision. The full page AADSAS application form that asks the reasons why the applicant is interested in dentistry and the space devoted to extra-curricular activities attempts to convey non-grade attributes. One might assume that the more outgoing applicant, one who is active in extra-curricular activites and who likes to be around other people, will have the greatest success in communicating with and relating to patients. It is possible that students having distress with their dental curriculum may be having communication or personal interaction problems. This study also intends to look at non-grade factors of those students having irregular progress.

A search of the literature offers little help to describe those dental students who have been terminated prior to graduation. A medical student attrition study[1] revealed that the average MCAT scores and premedical grades of academic drop outs are lower than that of successful students and that most medical students choose medicine as a career because of interest in science and interest in people. Successful students also tend to be influenced by a desire for independence and prestige, whereas unsuccessful students are more likely to be influenced by such additional factors as reading, and by religious and service motivations, but these factors certainly are difficult to measure at the time of admission.

Dr. Horton is Assistant Professor, Department of Oral Pathology and Diagnosis, College of Dentistry, University of Iowa, Iowa City, Iowa 52240.

The purpose of this study was to investigate student records to determine if those who have had academic distress can be identified prior to admission.

METHOD

Since December, 1971, a total of 27 students at the College of Dentistry, University of Iowa, have either been dismissed from school, have dropped out of school, or have been granted a leave of absence The 27 students amounts to a percentage of approximately 6 percent of the total student number that have been admitted since 1971. Of the 27 students, 6 were dismissed, 7 dropped out, and 14 asked for a leave of absence. This investigation inspected their pre-dental cumulative and science grade point average, their academic and PMAT scores in the dental aptitude tests, their reason for leaving the school, their reasons why they chose dentistry as a career, their involvement in extra-curricular activities, and their rank in the class while in dental school. The information was gathered from dental student records maintained in the Office of the Dental Registrar.

The leave of absence arrangement was initiated in 1973 by the collegiate academic and professional performance committee at the request of students who were uncertain about their future role as a dentist and wanted time to think it over. Prior to this arrangement a student would have either continued his study in school as a distressed student or dropped out of school permanently. Some return with renewed vigor - others never come back. The leave of absence concept is for the student who is having problems and needs time to work them out.

Tables IV and V, regarding extra-curricular activities and reasons for choosing dentistry, include a representative sample of the class in order to compare the leave-of-absence students with other members of the class. The representative sample was selected systematically by choosing every fourth folder from the files that included the last three classes of students.

The information given by the students was obtained from the AADSAS forms in which the student described his reason for choosing dentistry and his involvement in extra-curricular activities. Only ten of the fourteen students that received a leave-of-absence completed the AADSAS form that gave their answers. Those that started dental school prior to 1973 did not complete the AADSAS form. Since only one or two of the dismissed or dropout students were involved in the AADSAS program, their groups are not included in the table.

RESULTS

The results of the various segments of the study will be presented in tabular form. Table I compares the pre-dental grades and dental aptitude scores with the mean of their class. The grades or scores that are above the mean are circled. Of the six students that were dismissed from school, one was above the mean in science and two were above the mean in both the academic and PMAT parts of the DAT scores.

The dropout category shows that four students out of seven were in the upper half of their class in their science grade point, while two were above average in their cumulative grade point. In the DAT scores, four students were above the mean relative to the academic and two were above the mean in the PMAT.

The students that asked for a leave of absence represent a significant increase in grades and aptitude scores. Nine of fourteen students are above the mean in science grades and eleven are above the mean in cumulative grades. The same number, eleven, are above the mean in the academic DAT while eight out of fourteen are above the mean in the PMAT.

Table II reveals the students' rank in their class while in dental school. The students are grouped in quarters, with the first quarter considered the highest and the fourth quarter considered the lowest group. Four out of six students that were dismissed were in the fourth quarter, one in the third quarter, and one in the second quarter of their class. Four out of five students in the dropout category were in the fourth quarter, while one was in the third quarter. Two students that dropped out were not in school a sufficient length of time to be given a grade. The leave-of-absence category shows three out of the fourteen to be in the first quarter with a similar number in the fourth quarter. Four students are in the second quarter, with a similar number noted in the third quarter.

Table III lists the reasons why the students left school. Of those dismissed, four had academic problems, one lacked manual dexterity, and one cheated. Of those that dropped out, three were not sure they wanted to be a dentist, one had academic difficulties, one considered dentistry to be too demanding, one could not relate to people, and one did not give a reason. Of those that asked for a leave of absence, eight were not sure they wanted dentistry as a career, and six listed health consideration, both mental (or emotional) and physical, as their reason.

Table IV lists the reasons why leave-of-absence students (10) chose dentistry. Also listed are the reasons given by a representative sample of the class.

TABLE I

Pre-dental Grades and Dental Aptitude Scores

Year Admitted	Grade Point Science Stud.	Science Mean	Cum. Stud.	Cum. Mean	DAT Acad. Stud.	Acad. Mean	P.M.A.T. Stud.	P.M.A.T. Mean
Dismissed								
1971	2.74	2.84	2.94	2.93	4	4.25	3 & 2	4.80 & 4.53
"	2.68	"	2.66	"	5	"	6 & 5	"
"	2.62	"	2.53	"	4	"	4 & 4	"
1973	2.41	3.10	2.72	3.15	7	4.72	3	4.72
1975	3.47	3.33	3.49	3.35	4	5.09	4	5.13
"	2.98	"	3.12	"	5	"	8	"
Drop-outs								
1970	3.22	2.93	3.34	2.87	4	4.30	4.22	4.55 & 4.35
"	2.95	"	2.50	"	8	"	6.24	"
1971	2.38	2.84	2.65	2.93	6	4.25	5 & 4	4.80 & 4.53
"	2.57	"	2.58	"	6	"	3 & 3	"
"	2.96	"	2.78	"	6	"	3 & 3	"
"	2.64	"	2.62	"	2	"	6 & 7	"
1975	3.41	3.33	3.61	3.35	5	5.09	5	5.13
Leave of Absence								
1972	3.17	3.08	3.34	3.03	5	4.50	3 & 2	4.50 & 4.00
"	4.00	"	3.72	"	6	"	3 & 3	"
"	2.38	"	3.00	"	4	"	2 & 1	"
"	4.00	"	3.97	"	6	"	6 & 5	"
1973	3.17	3.10	3.25	3.15	6	4.72	5	4.72
"	3.50	"	3.07	"	6	"	6	"
	2.80	"	3.28	"	6	"	3	"
	3.80	"	3.80	"	5	"	2	"
	2.91	"	2.86	"	4	"	7	"
	3.44	"	3.48	"	5	"	5	"
	3.00	"	2.94	"	7	"	7	"
1974	4.00	3.37	3.95	3.39	5	5.20	5	4.90
	3.39	"	3.47	"	6	"	6	"
	3.17	"	3.46	"	6	"	4	"

TABLE II

Student Rank In Dental School

	1st quarter	2nd quarter	3rd quarter	4th quarter
Dismissed		1	1	4
Drop-out*			1	4
Leave of Absence	3	4	4	3

*Two drop-out students left school prior to the finish of the first semester of their freshman year, so no grades were included in their records.

TABLE III

Reasons for Academic Distress

	Dismissed	Dropped Out	Leave of Absence
1. Not sure wanted to be a dentist	0	3	8
2. Health (mental or physical)	0	0	6
3. Academic	4	1	0
4. Lack of manual dexterity	1	0	0
5. Dentistry too demanding	0	1	0
6. Could not relate to people	0	1	0
7. Cheating	1	0	0
8. Did not give reason	0	1	0
Total	6	7	14

Table IV

Reasons for Choosing Dentistry

Reason*	Leave of Absence Group (N=10) Frequency	%	Comparison Group (N=67) Frequency	%
1. Interest in science or health related field	6	60.0	24	35.8
2. Wants to help people	5	50.0	34	50.7
3. Life style	4	40.0	13	19.4
4. Wants to work with people	2	20.0	9	13.4
5. Influenced by a dentist	2	20.0	27	40.3
6. Likes to work with hands	1	10.0	7	10.4
7. Worked in a dental office or dental laboratory	0	0.0	7	10.4
8. Will do my best work	0	0.0	7	10.4
9. Wants to work in a profession such as dentistry	0	0.0	6	9.0

*The two main reasons were taken from each student record.

Table V

Participation in Extra-Curricular Activities

	Leave of Absence Group (N=10)				Comparison Group (N=67)			
	Leader		Participant		Leader		Participant	
	Frequency	%*	Frequency	%	Frequency	%	Frequency	%
1. Music	0	0.0	2	20.0	1	1.5	17	25.4
2. Athletics	2	20.0	4	40.0	14	20.9	29	43.3
3. Debate/Writing	0	0.0	0	0.0	1	1.5	5	7.5
4. Stud. Gov't.	0	0.0	1	10.0	11	16.4	14	20.9
5. Health Services	0	0.0	1	10.0	6	9.0	8	11.9
6. Art/Drama	0	0.0	1	10.0	1	1.5	8	11.9
7. Frat./Soro.	2	20.0	4	40.0	16	23.9	14	20.9
8. Religious Group	0	0.0	2	20.0	4	6.0	21	31.3
9. Comm. Survice	1	10.0	0	0.0	5	7.5	29	43.3
10. Political Group	0	0.0	2	20.0	1	1.5	15	22.4

*The total of the percentages may not equal 100 since some people may be involved in more than one activity.

The responses show that an interest in science or health related fields, a desire to help people, and an appeal for the lifestyle of a dentist are the most common reasons for leave-of-absence students to choose dentistry. The comparison group responses include a greater variety of reasons. A desire to help people, influence by a dentist, and an interest in science or health related fields are given most frequently as the reasons.

Table V reveals the involvement in extra-curricular activities of ten leave-of-absence students and those of a comparison group. Athletics and fraternity/sorority involvement were the most popular extra-curricular activities of both groups; community service was more prevalent among the comparison group, however.

DISCUSSION AND CONCLUSION

Of particular interest in the study was the reasons given by the leave-of-absence group for interrupting their studies at the dental school and also their academic record while in both pre-dental and dental school. The majority of these students were ranked in the upper half of their class in their pre-dental academic record and their rank while in dental school was spread uniformly across the class. Uncertainty of dentistry as a career figured prominently in their decision to at least temporarily terminate their dental education. A comparison of the leave-of-absence students to other classmates as to their participation in extra-curricular activities seems to reflect a similarity, with the exception that the leave-of-absence student has experienced less involvement in community service and student government. With regard to reasons for choosing dentistry, the leave-of-absence student seems to have a greater interest in science and his future lifestyle, but has had less exposure to dentistry as a profession prior to admission. A conclusion that could be drawn from this study is that dental students would be difficult to identify with a career crisis of sufficient seriousness to ask for a leave of absence. Attempts to detect evidence of their academic distress prior to admission has not been forthcoming.

In contrast to the leave-of-absence group, academic difficulties were shown to be a major problem in dental school for the dismissed and dropouts. A majority of the students in the dismissed group had pre-dental grades and aptitude scores that were below average.

From this study it appears that the typical dismissed student could be characterized as one who is below average in pre-dental grade point and DAT scores, is in the bottom quarter of his dental class and is having dental school distress because of academic reasons. The

average dropout is above average in his pre-dental science grade point and the academic portion of his DAT score, is below average in his cumulative grade point and the PMAT portion of his DAT score, is in the bottom quarter of his dental class, and has an uncertainty about a career in dentistry as his reason for dropping out of school. The leave-of-absence student is above average in his pre-dental grade point and DAT scores, ranks in the middle of his dental class, is not sure he wants to be a dentist, his reason for entering dental school was an interest in science or health related fields, and his extra-curricular activities include interests in athletics and fraternities.

While pre-dental grades and DAT scores might reflect non-success of the six students in the dismissed group, it could not be considered a prediction for the success or non-success of the twenty-one students in the dropout or leave-of-absence groups. A recommendation as a result of this study would be that pre-dental students obtain better exposure to the profession by carefully observing a practicing dentist or a dental clinic in their day by day working activities. This would allow the student better insight into the profession and the possible realization that he or she might be better suited for a different career.

REFERENCES

1. Johnson, Davis G.: Doctor or Dropout. J Med Educ, 41:1097-1204, December, 1966.

The University of Iowa
College of Dentistry
Iowa City, Iowa 52242

The most striking contradiction of our civilization is the fundamental reverence for truth which we profess and the thorough-going disregard for it which we practice.

Vilhjalmur Stefansson

The Plight of Scientific Journals

EARL J. SCHERAGO

From the beginning of Scientific Research, the accepted method of recording results has been through Peer Review Scientific Journals. Each area of scientific specialty has its own Journal and serves as a means of communication with other scientists in the same field. These scientists of like interest often banded together into groups which ultimately grew into scientific societies. Such societies range in size from a few members to the 140,000 constituency of the American Association for the Advancement of Science.

Early in the history of organized science, it became apparent that a system of assuring the authenticity of the scientific work appearing in Society Journals was essential, for the scientific community was not without some charlatans. Since each piece of research in a given area served as a basis for further work in the same scientific field, an erroneous piece of information could cause untold damage to the whole field. To protect themselves, scientists established the Peer Review Doctrine. In its simplest form, this doctrine says that no piece of scientific research can be considered valid unless it has been reviewed by at least two recognized authorities in the field of science involved. Furthermore, these reviewers can have no financial or academic involvement in the work reviewed and in most cases are to remain unknown to the performer of the work. Through the years, scientists have tenaciously stuck to the Peer Review System of Journal Editing. The tremendous strides in science and medicine of the last hundred years would not have been possible without strict adherence to Peer Review and the use of Society Journals as a means of communicating Peer Review information to other scientists. Once a piece of scientific work is published in a Peer Review Journal, it becomes forever a part of the archives of Science. Consequently, Peer Review or Society Journals are often referred to as archival or scholarly journals. Most archival journals are published by non-profit medical or scientific societies. That is because commercial publishing

From testimony presented before the Subcommittee on Monopoly, Select Committee on Small Business of the United States Senate, Washington, D.C., May 24, 1976. Mr. Scherago is president of Scherago Associates.

firms have found that it is very difficult to make a profit with Peer Review Journals.

Peer Review Journals as a group, are in serious financial difficulty. So much so, in fact, that more and more meetings are being held by Society Journal editors to discuss the problem. One such symposium took place at the annual meeting of the American Association for the Advancement of Science in February of last year. In a paper delivered to this meeting, Robert Day, managing Editor of the publications of the American Society for Microbiology, made this statement. "But will the current trend of rising costs continue? If they do, the scientific journal as we know it today, that is a package of research papers which is distributed each month directly into the hands of many of the scientists who are peers of the authors and into virtually all of the departments and laboratories involved with similar research will no longer be endangered, it will be extinct." Mr. Day is not alone in his concern. Virtually every Peer Review Journal has seen its number of scientific pages dwindling to half their former number. Most societies have increased membership fees to the point where fewer and fewer scientists can afford them. Mr. Day says that the subscription price for the *Journal of Bacteriology* has tripled since 1968 and by 1985 will triple again. Most society officials agree that they have reached the point where no further reduction in scientific papers and increases in membership dues and subscriptions can be made.

Each year this country spends almost 18 billion dollars on scientific research. A substantial portion of those research funds are supplied by the federal government. The National Institute of Health alone spends almost 2 billion dollars in grants and intramural research. This colossal investment in research activity has in recent years produced an avalanche of new important scientific and medical information. Dr. Donald S. Fredrickson, Director of the National Institute of Health said in a speech at the recent meeting of the American Association for the Advancement of Science, "Biomedical knowledge, like all scientific knowledge, has been accumulating at an exponential rate, as reflected in the output of scientific literature. One sampling of biomedical publications suggests an average annual increase in scientific papers of between 4 and 5% for each year from 1965 to 1973. Not all papers which are delivered before a society are published in Peer Review Journals. Some authorities estimate that less than 60% of significant scientific papers ever appear in established scientific or medical journals. It is ironic to think that much of the productive research generated by this enormous expenditure in research dollars is never seen by the scientists and doctors who could best utilize it. What then

has led us to this state of affairs in scientific publishing? Four factors have been at work during recent history, which have created this dilemma.

The first of these is the tremendous increase in the number of scientific papers competing for the available pages in scientific journals.

The second is the rapidly spiraling costs of journal production. The cost for printing a page of material in the average journal has increased 30% in the last two years. Postage too has increased substantially. Increases in labor and salaries due to inflation are well known facts. Most societies have sought to fight these spiraling costs by increasing membership dues. This in turn has led to a downturn in association members which keeps the net increase in society revenue small. Reduction in scientific pages published is also an unsatisfactory solution. All things considered, however, attempts at cost reduction and increases in subscriptions and dues will not solve the problem.

The third factor and by far the most critical is the decrease or lack of increase in advertising revenue in Peer Review Journals. Societies have traditionally subsidized a good portion of their publication costs with paid advertising from firms selling products used by doctors and scientists. However, these advertisers are never allowed to influence the scientific content. This is because the control of the scientific material published is in the hands of reviewers who do not participate in the revenue from advertising. True Peer Review Journals have steadfastly refused to let advertisers influence their scientific content. This policy has led advertisers to seek other means of communicating with their customers which would allow them more input. The business trade press, recognizing this need, provided that service in the form of controlled circulation magazines often called "Throw Aways" by doctors and scientists.

Controlled circulation magazines constitute a serious financial problem for Peer Review Publishers. Furthermore, the scientific articles in them do not undergo a stringent review process as do scholarly journals. Consequently, they add no new information to the scientific or medical archives. Each year, such publications attract sizeable amounts of advertising revenue from Peer Review Journals. Last year, as a group, 10 publications distributed to the research and laboratory field alone collectively billed over 7 million dollars in advertising revenue, money that could have been used to publish Peer Review Scientific material, had those ads appeared in scholarly journals. Essentially, there are three types of controlled circulation journals.

1. Product tabloids which publish as their sole non-advertising content, product descriptions supplied by advertisers which are essentially free ads. In general these publications are newspaper size and it is often accepted in the trade that one must advertise in a tabloid in order to get articles published about one's products.

2. Clinical or Research Type Journals, these have the appearance of scholarly journals, but do not utilize any accepted review process for their scientific content. It is not unknown for these journals to allow an advertiser to write an article or to accept an article from an individual designated by the advertiser.

3. News Publications, these contain news releases from industry, reviews or abstracts of articles appearing in Peer Review Journals or interviews with scientists who give papers at scientific meetings. It is often possible for a scientist or doctor to obtain publicity, in such a magazine about scientific theories or drugs which are held in disrepute by most scientists. In this manner, an unscrupulous scientist or doctor may circumvent the traditional Peer Review Process.

Scholarly publications have great difficulty competing effectively in the advertising market place with Throw Away Journals because they are not willing to make the compromises with established scientific practice necessary to interest advertisers. To do so would mean there would no longer be any Peer Review Journals. Better to preserve the few that survive under the old system, than to have no communication system for authentic scientific material.

Another reason that learned journals cannot compete with Throw Aways is that no Peer Review Journal will allow an advertiser or prospect to influence its scientific content. Furthermore, learned journals often print adverse references to advertisers' products or present views which are unpopular with groups of advertisers. In no instance, will an authentic scholarly Journal ever agree to run articles or product descriptions in exchange for advertising.

A prime reason for the popularity of Throw Aways with advertisers, is that it is easy to understand the articles in them. In general, non-scientists do not believe that scientists or doctors would read articles written in scholarly style. Advertisers see them as dull and uninteresting. One other advantage Throw Aways enjoy is that society journals , on limited budgets, usually have drab and uncolorful formats while Throw Aways make ample use of expensive graphics, color and artwork to make their journals more attractive. So it is easy to see that in the classic sense of providing the customer with what he wants, Throw Aways have done a much better job of serving the advertiser. Scholarly journals have concentrated on the other hand, on giving the

scientific and medical community what it needs. It is interesting to note that in virtually every case, where Throw Aways are competing with society journals for advertising, the society journal was in existence long before the Throw Away. Usually, it was the Scholarly Journals' volume of advertising which it accumulated because there were no other journals in the field, that attracted the Throw Away in the first place. History has shown that every time a controlled circulation publication enters a field served by a learned journal, it drains off a substantial portion of its advertising. This often produces disastrous results. One scholarly chemical journal has lost 40% of its advertising revenue to two Throw Aways.

For the last 10 years, business publishers have lobbied intensely to force learned societies to pay tax on their advertising. In 1969, the IRS established new guidelines which have resulted in many societies having to pay taxes on advertising revenue.

Thus, the society uses money to pay taxes that otherwise would go to publish more scientific information. The paradox here is somewhat ludicrous. On the one hand, the government creates a non-profit status for scientific societies so that continued scientific excellence will be assured, and then takes away a substantial portion of its money in taxes. The business publishers have insisted that the tax free status of societies constitutes unfair competition. They say this even though the society was there first and, as we have seen, it is very difficult for Scholarly Journals to compete effectively against the Throw Away.

If science is to survive, we must find some way to help them, for the problem is jeopardizing the scientific and technical capabilities of our nation.

News of Fellows
(continued from page 72)

Executive Director **Robert J. Nelsen** has been reappointed to the Budget and Finance Committee of the National Council on Radiation Protection.

Arthur I. Steinberg of Phoenixville, Pa. has been named vice-president of the Fulbright Alumni Association.

Supporters of Project Library

The following Fellows have contributed to the support of Project Library since its inception:

NAME OF DONOR	ADDRESS	NUMBER OF DONATIONS
ABERNETHY, G. SHUFORD	Hickory, N.C.	3
AGINS, THEODORE C.	Great Neck, N.Y.	1
AGUILAR, E.A.	El Paso, TX	1
AHLSTROM, FAE T.	Las Vegas, NV	1
AITA, C.R.	Boynton Beach, FL	1
ALDRICH, JOHN E.	Columbus, OH	1
ALFORD, FRANK O.	Charlotte, NC	1
ALPER, MORTON O.	Arlington, VA	1
ALPERT, C.C.	Washington, D.C.	1
AMBROSE, JAMES A.	San Vicente, CA	2
ANDERMAN, IRVING I.	New York, N.Y.	1
ANDERSON, ARNETT A.	Washington, D.C.	1
ANDREWS, VICTOR L.	Mocksville, SC	2
ARMBRECHT, EDWARD C.	Wheeling, WV	1
AUGUST, GEORGE S.	Silver Spring, MD	1
BARNES, FRANCIS P.	Waterbury, CT	1
BARR, VINCENT A.	Frankfurt, KY	1
BAUMANN, T.H.	San Diego, CA	1
BAZOLA, FRED N.	Berwyn, IL	1
BENNETT, GLENN	Wisconsin Rapids, WI	1
BENTON, JACK R.	Appleton, WI	1
BERGH, INGAVALD	Janesville, WI	1
BERMAN, MARTIN H.	Floral Park, NY	1
BLUMFIELD, WILLIAM	Union, NJ	1
BOYD, RUSSELL C.	Huntington, WV	1
BOYDEN, DON	Mitchell, SD	4
BOTWINICK, LEO	New York, NY	1
BRECKENRIDGE, C. ROBERT	Lodi, CA	4
BRESSMAN, EDWARD	Maplewood, NJ	1
BRO, RAYMOND	Chicago, IL	1
BROADLICK, ROBERT C.	Riverside, CA	1
BROWN, COLEMAN T.	Tampa, FL	1
BUHNER, W.A.	Daytona Beach, FL	1
BURKMAN, N.W.	Birmingham, AL	1
BUTLER, EDMUND	Lebvanon, TN	1
CALDER, CHARLES A.	Danville, NY	4
CALLERY, VINCENT	Pottsville, PA	1
CALKINS, EARLE D.	Racine, WI	1
CAMPBELL, H.M.	Tupelo, MI	1
CAMPBELL, OLIVER	Planfield, NJ	1
CAPLAN, HERB	Montreal, Quebec, Canada	1
CARLSON, DONALD	Midland, MI	1
CARRIGAN, WILLIAM A.	Tiffin, OH	2
CASE, HAROLD T.	Santa Maria, CA	1
CASSIDY, JAMES L.	Macon, GA	1
CAVIN, EUGENE	LaCross, KA	1
CHAVOOR, ASHUR G.	Falls Church, VA	1
CHERTOFF, ALEX	Bayonne, NJ	1
CHRISTY, J. MERLE	Pittsburgh, PA	1
CLARKE, ALAN	Portland, OR	1
COFFEE, JAMES L.	Baton Rouge, LA	1
COLLINS, WILLIAM K.	Washington, D.C.	1
COLQUITT, WALTER T.	Shreveport, LA	1
COMPTON, DUANE E.	Indianapolis, IN	1
CONE, GEORGE MITCHELL	Osceola, AR	1
DARBY, HUBERT	Vidalia, GA	1
DAVIS, JOHN D. & DUPREE	Dotham, AL	1
DOLEZAL, WILBUR F.	Morris, IL	1

NAME OF DONOR	ADDRESS	NUMBER OF DONATIONS
DAVIES, C. LINDALE	Worcester, MA	1
DORN, WALTER C.	Silver Spring, MD	2
DRUMMOND, S.L.	London, England	3
DUDLEY, WILFORD	Washington, D.C.	1
DUKES, HOWARD H.	St. Louis, MO	1
DZIEJMA, RAYMOND S.	Maspeth, NY	1
ELLIOTT, R.W.	Potomac, MD	1
ENGLISH, LEON J.	Arcadia, WI	1
ENRIGHT, CHARLES M.	Holyoke, MA	1
FAIR, C.W.	Daytona Beach, FL	1
FARBER, E.M.	Delray Beach, FL	1
FIXOTT, RUPERT E.	Los Altos, CA	1
FLEUCHAUS, P.T.	Daytona Beach, FL	1
FRANK, WILLIAM S.	Los Angeles, CA	1
FREEDMAN, JOEL B.	Pittsburgh, PA	1
FREEDMAN, MAURICE J.	Little Rock, AR	1
GARABEDIAN, HENRY C.	Long Beach, CA	2
GEORGE, W. ARTHUR	Pittsburgh, PA	1
GERTLER, COLEMAN	Milwaukee, WI	4
GOODE, MORTON	Washington D.C.	2
GILL, J. RAYMOND	Cupertino, CA (dec'd.)	1
GRAHAM, STANLEY E.	Coal City, IL	1
GRAHAM, WAYNE F.	Morris, IL	1
GIUDITTA, NICHOLAS A.	Westfield, N.J.	1
GREENSPAN, SIDNEY N.	Washington, D.C.	1
HALEY, BRYNAL M.	Warrenton, VA	1
HALPRIN, ARTHUR	Caldwell, NJ	1
HAMILTON, RICHARD H.	Topeka, KA	1
HAMPTON, C.L.	Galax, VA	1
HARPER, TED L.	Spokane, WA	2
HARRELL, JAMES A.	Elkin, NC	1
HEIM, HENRY J.	Washington, D.C.	3
HERBERT, FRANK L.	Metairie, LA	1
HESTER, H. CURTIS	Upper Montclair, NJ	2
HILLS, DALE A.	Minneapolis, MN	3
HIPPLE, JAMES W.	Trenton, NJ	1
HOPPLE, JAMES D.	Dearborn, MI	1
HOROWITZ, JEROME	Millburn, NJ	1
HORTON, THOMAS	Columbus, GA	15
HOYT, CHARLES D.	Fair Haven, NJ	1
HUBBELL, ADRIAN O.	Long Beach, CA	1
HUGHLETT, ROBERT B.	Tampa, FL	1
HUMPHREY, GEORGE L.	Moorehead, MN	1
HUNLEY, THEODORE R.	Bethesda, MD	1
JACOBSON, BAILEY N.	Northbrook, IL	1
JASPER, WILLIAM J.	Dallas, Texas	1
KALEY, ROBERT H.	Johnson City, NY	1
KEAHEY, T.R.	Canton, TX	1
KENTUCKY SECTION	Louisville, KY	1
KERSHAW, A. JAMES	Warwick, RI	1
KLEIN, SANFORD	Roslyn, NY	1
KLINE, JOSEPH M.	Arlington, VA	1
KLOEHN, S.J.	Appleton, WI	1
KOSTER, SEYMOUR	Port Chester, NY	2
KRAMER, J.G.	Martins Ferry, NY	1
KRIPPAEHNE, JOHN V.	Portland, OR	1
LADY, WILLIAM H.	Washington, D.C.	1
LAMACHI, WALTER F.	Burbank, IL	1
LARSON, GILBERT H.	Brookfield, WI	1
LEATHERS, LINDELL L.	Washington, D.C.	1
LEISHEAR, SAMUEL A.	Washington, D.C.	1
LEITCH, JOHN M.	Farmington Hills, MI	1
LIPKIND, MAXWELL	Cargary, Alberta, Canada	1

NAME OF DONOR	ADDRESS	NUMBER OF DONATIONS
LONG, J.H.	Daytona Beach, FL	1
LOVESTEDT, STANLEY A.	Minneapolis, MN	1
LUSTERMAN, EDWARD A.	Rockville Centre, NY	1
LUCAS, L.A.	Oklahoma City, OK	2
MACALUSO, ALFRED	Chicago, IL	1
MARKOS, SIMON G.	Dover, NH	1
MASTER, E. BYRON	Maplewood, NJ	1
MATTOX, BALFOUR D.	Washington, D.C.	2
McKINLEY, THEODORE	Lakewood, OH	1
McLEAN, L. DECKLE	Jersey City, NJ	2
MEMPHIS DENTAL SOCIETY	Memphis, TN	1
MILAS, V.B.	Chicago, IL	1
MILOBSKY, LOUIS STANLEY	Washington, D.C.	1
MITCHEM, JOHN C.	Portland, OR	2
MISHLER, ERNEST G.	Greenwood, IN	1
MLINAR, DALE G.	Austin, MN	1
MON PERE, JOHN V.	Fresno, CA	1
MORLOCK, WALLACE J.	Hastings, MN	1
MOSMANN, WALTER A.	Ridgewood, NJ	2
MULLEN, GEORGE E.	New Milford, CT	1
NEELEY, ARNOLD	Portland, OR	1
NELSEN, ROBERT J.	Bethesda, MD	1
NICHOLSON, MILTON E.	Pittsburgh, PA	2
NICKELS, C.W.	Walnut Ridge, AR	1
NUTTING, EDWIN B.	San Diego, CA	1
O'KEEFE, JOHN A.	Washington, D.C.	1
OKLAHOMA SECTION	Regency Five	1
OLIVER, H.T.	Montreal, Quebec, Canada	1
OSWALD, HAROLD	Bellingham, WA	1
WESTERN PENNSYLVANIA SECTION	Regency Two	1
PARKER, L. WILLARD	Nashville, TN	1
PAULSEN, ALBERT G.	Falls Church, VA	2
PERDIGON, GUSTAVE J.	Tampa, FL	1
PERLOWSKI, S.	Kerrville, TX	1
PERRY, HAROLD T. JR.	Elgin, IL	2
PESSAGNO, EUGENE L.	Baltimore, MD	1
PRICE, C.B.	Temple, TX	1
PRICE, MARK A.	Monroe, LA	1
PRUDEN, K.C.	Ridgewood, NJ	1
RADKE, RYLE A.	Ft. Richardson, AK	1
RAASCH, FRANK O.	Kearney, NE	1
RATNER, PAUL	Poughkeepsie, NY	1
REDPATH, GEORGE	Portland, OR	1
REESE, WILBUR T.	Springfield, IL	1
REITER, PHILIP J.	Portland, OR	1
REUTER, WALTER J.	Napa, CA	1
REYNOLDS, RICHARD J.	Memphis, TN	1
RICHARDSON, RICHARD E.	Chapel Hill, NC	1
RIDGELEY, GARRETT V.	Washington, D.C.	1
RIPP, GERALD A.	Troy, NY	1
RITCHEY, W.H.	Bryan, TX	1
ROGERS, JEROME A.	Riverhead, NY	1
ROHRER, CLAYTON A.	Winona, MN	1
ROTHSTEIN, IRVING	Washington, D.C.	1
ROUSS, ANGELO S.	Birmingham, AL	1
SACCONE, NICHOLAS D.	Scranton, PA	2
SAEGER, E.A.	Pittsburgh, PA	1
SALCETTI, JOSEPH R.	Washington, D.C.	1
SANDLER, EUGENE S.	Lynn, MA	1
SANDERS, SAM G.	Jackson, MI	1
SAUSEN, ROBERT E.	Morgantown, WV	3

NAME OF DONOR	ADDRESS	NUMBER OF DONATIONS
SAY, JOHN N.	Prineville, OR	1
SCHROEDER, FRANK A.	Arlington Heights, IL	1
SCHROEDER, T.W.	Daytona Beach, FL	1
SCHULTE, GEORGE N.	Moorehead, MN	1
SCHULTZE, HERBERT E.	Navasota, TX	1
SCHWARTZ, J. LEON	Tampa, FL	6
SCRIBER, LEONARD C.	Stevens Point, WI	1
SELBE, JANE W.	Glenview, Il	1
SHUFORD, FRANK L.	Washington, D.C.	2
SHULMAN, ISRAEL	Washington, D.D.	2
SHUMPERT, WILLIAM O.	Ft. Lauderdale, FL	1
SKAALEN, L.O.	Stoughton, WI	1
SLAUGHTER, FREEMAN C.	Kannapolis, NC	1
SMITH, ROBERT E.	Washington, D.C.	1
SMITH, WILLIAM B.	Albany, N.Y.	1
SMITH, WILLIAM THOMAS	Tifton, GA	1
SOUTHERN CALIFORNIA SECTION	Regency Seven	14
STEINBERG, ARTHUR	Phoenixville, PA	3
STILLWELL, EDWARD C.	Glen Ridge, NJ	1
STOLLER, STANLEY M.	Bethesda, MD	1
STUTTS, W.F.	Dallas, TX	1
SVENSON, SVEN O.	Chatham, MA	1
SWANSON, HENRY A.	Washington, D.C.	1
SWEET, THOMAS O.	Syracuse, N.Y.	1
TAPP, NICHOLAS E.	Milwaukee, WI	2
TAYLOR, JOHN R.	Long Beach, CA	1
TAYLOR, T. EARL	Columbus, GA	3
TERKLA, LOUIS G.	Portland, OR	1
THOBURN, ROBERT	Daytona Beach, FL	1
TIGANI, PASQUALE	Bethesda, MD	1
TINTHOFF, LOUIS F.	Peoria, IL	2
TRICE, WILLIAM B.	Erie, PA	1
TRINWARD, JOHN W.	Bethel, Me	1
TYLMAN, STANLEY D.	Lombard, IL	2
UNGER, ROBERT M.	Chicago, IL	1
VAN SCOTTER, DONALD E.	Milwaukee, WI	1
VAN EEPOEL, EDWARD F.	Tampa, FL	1
VASON, ROBERT F.	Mt. Dora, FL	1
VERNETTI, JAMES P.	San Antonio, TX	2
WADE, GEORGE W.	Washington, D.C.	1
WALLACE, A. LEIGH	Palm Springs, CA	1
WASHINGTON - BRITISH COLUMBIA SECTION	Regency Eight	1
WEBB, DON R.	Jackson, TN	1
WEILER, LESTER	Dobbs Ferry, NY	1
WEINSTEIN, SIDNEY	Birmingham, AL	1
WEISE, DAVID R.	Columbus, GA	1
WEST VIRGINIA SECTION		6
WHITAKER, JOHN O.	San Pedro, CA	1
WICK, ASHTON O.	Sheboygan, WI	3
WILLENS, SUMNER H.	Lynn, MA	1
WOLFORD, LLOYD W.	Olympia, WA	1
WONG, COLIN C.	Mill Valley, CA	2
WOODWARD, H. ELTON	Tampa, FL	1
METROPOLITAN WASHINGTON SECTION	Regency Two	30
YANOWITZ, BERNARD	Washington, DC	1
YOUNG, DANIEL R.	Pomona, CA	1
YOUNGER, CHARLES J.	Tampa, FL	1
YUDKOFF, IRVING	New York, NY	1
ZIELINSKI, JOSEPH B.	Elmhurst, Il	2

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;

(d) To encourage, stimulate and promote research;

(e) 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;

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

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

(h) 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;

(i) 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.

Revision adopted November 9, 1970.

American College of Dentists
7316 Wisconsin Avenue
Bethesda, Maryland 20014

Return Postage Guaranteed

Second Class Postage
PAID
Washington, D.C.
and Additional Mailing Points