

MOMENTUM

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News & Viewpoints
for Eastman Dental Center
Alumni & Friends

EDC

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Research

Research: diligent protracted investigation, especially for the purpose of adding to human knowledge; studious inquiry.

Research has been a significant part of Eastman Dental Center's tradition for over thirty years, and is the primary activity of many of the Center's staff. Almost all staff do some research and all students are encouraged to participate in some aspect of the Center's research activities.

Certainly among the most conspicuous contributions to the advancement of dentistry in this century are the notable fluoridation studies by Basil G. Bibby and the leading role played by Michael G. Buonocore in the development of plastic adhesives.

The new building accommodates the needs of the research staff. Laboratories for caries research and microbiology are on the fourth and fifth floors. Facilities for studies of dental materials and periodontics are on the sixth floor. The vivarium is on the seventh floor, which also con-

tains laboratories used currently for periodontal and orthodontic studies. Many of the laboratories have moveable partitions so space may be allocated as needed for a particular study or experiment.

This first in a proposed continuing MOMENTUM column on research at EDC will focus on current interest in the Department of Prosthodontics.



Gerald N. Graser became chairman of the Department of Prosthodontics in 1977 when Allen Brewer, first chairman of the department, retired. Jerry received his D.D.S. from SUNY Buffalo in 1968 and his certificate in Prosthodontics from EDC in 1972. He has been on the Center's staff since he was awarded his Master's from the University of Rochester in 1975.

He is an excellent clinician, a thoughtful researcher and a devoted teacher.

Jerry and Jack Caton, senior clinical and research associate in the Department of Periodontics, collaborated on the following problem.

"The Influence of Overdenture Abutment Tooth Contour Upon the Periodontium"

Overdentures have been used with increasing frequency during the last decade. An overdenture is a complete denture that rests upon and completely covers a few natural teeth. The dentist reduces the remaining teeth to a level slightly above the gingival (gum) tissue to permit a more stable and better fitting denture than can be achieved if all the teeth are removed. At times the covered tissue adjacent to the remaining teeth can be adversely affected.

The purpose of this study was to determine if the shape in which the remaining teeth are reduced might reduce plaque retention and improve gingival health.

Ten subjects, each of whom had two natural teeth remaining, were selected. One tooth was reduced to a dome-shape, while the other was reduced to a flat-top surface. Eight clinical parameters, including attachment loss, pocket depth, gingival index, plaque index and bone loss, were measured at the time the overdenture was inserted. Five subjects have completed one-year evaluations. One has completed a three-year evaluation.



Analysis of the results indicates that after one year no significant differences in the clinical parameters were present when comparing dome-shaped with natural contour abutments. However, an interesting finding was that those subjects with the best oral hygiene showed more wear to the natural tooth structure than those who were perhaps not as scrupulous in their hygiene. This wear, and ways to prevent it, will be evaluated in further studies.

Jerold A. Feldman and Rafael Ganddini are senior prosthodontic postdoctoral students and will complete their studies in June. They and Ayodeji Idowu, a junior student, were awarded Allen A. Brewer Prosthodontic Alumni Fellowships for the academic year 1980-81.

Jerry Feldman received his D.D.S. from New York University. His research involves a technical problem.

"Evaluation of Cement Film Thickness When
Cementing Crowns under Dynamic and Static Loads"

The purpose of this study is to investigate the effectiveness of a commercially produced vibrating unit specifically designed to reduce cement film thickness when a dental crown is cemented to the remaining tooth structure.

Previous laboratory studies have shown that when dynamic pressure (vibrating force with amalgam condensers) is applied to a crown during cementation procedures it has produced a thinner cement film than when static pressure is applied. The new commercial vibrating unit may allow for better marginal adaptation of crowns clinically, resulting in an increased longevity due to less marginal leakage.

Rafael Ganddini comes from Guatemala where he studied to be a dentist. He received his certificate in general dentistry from EDC in 1979. His research is on fluorides and porcelain crowns.

"The Effect of Fluorides on the Surface
of Glazed Porcelain"

The purpose of the study is to evaluate the effects of acidulated phosphate, sodium and stannous fluorides on the glazed surface of porcelain as well as the effect of these topical fluorides on staining that is placed on the porcelain surface to make the crown appear more natural.

It is a laboratory study designed to compare the relative effects of different fluorides on porcelain surfaces that could have adverse effects on the clinical appearance of crowns and bridges.

After Ayodeji Idowu received his D.D.S. from the University of Lagos in Nigeria, he came to Rochester. He received his certificate in general dentistry in 1979 and then spent a year working in general dentistry before entering the prosthodontic program. He is interested in the elderly.

"The Relationship Between Masticatory Efficiency, Aging,
Oral Health and General Health"

The objective of this study is to find out if there are any correlations between a person's masticatory efficiency, aging, the state of the dentition and general health.

The population to be studied will be elderly subjects, 60 years of age and older. One group will be institutionalized; the other, non-institutionalized.

The method to be used to assess the masticatory efficiency will be based on a previous study and involves estimating

the sizes of fragments of nuts chewed by the subjects under study using a sieve system.

It is hypothesized that improved chewing efficiency may lead to better nutrition and general health, an important consideration for the elderly.

Richard D. Gioia was awarded his D.D.S. by the University of the Philippines. He is studying another aspect of overdentures.

"Evaluation of Fluoride Therapy
on Abutment Teeth in Overdentures"

This study is to determine the effectiveness of fluoride treatment on hardening abutment teeth in overdentures. The purpose of the study is to evaluate the effectiveness of fluoride to see if it will decrease the wear of retained teeth caused by the overdentures and/or brushing.

Jean-Marc Ferrando is a graduate of the University of Paris in France. He is evaluating different materials used to restore badly broken down or decayed teeth.

"Comparison of Strength of Amalgam
and Composite Cores under Cast Crowns"

Freshly extracted teeth will be restored with pins and amalgam and composite cores. Cast crowns will be fabricated with finish lines slightly below the level of tooth material, at the level of tooth material, and a little above the level of tooth material. After thermo cycling, each restoration will be submitted to different loads in order to analyze the resistance of the two materials to fracture.

Alumni News

HUGH A.T. KEENAN, who presided at "Chair 19 at the Rochester Dental Dispensary in 1929," is now dental director at Founders Pavilion, a skilled nursing home in Corning, New York. He writes, "After 53 years in dentistry, I'm occupying my time taking care of people my age and older. Last issue was great. It was good to read about people of my era like Don Padelford so will be looking forward to more historical articles."

J.K. ELLWOOD, GenDen '55, says, "My wife and I have been back to the USA to meet friends whom I made whilst doing flying training in Oklahoma 1943/4 in Royal Air Force. Sometime we should make an effort to revisit Rochester where we spent a very happy year." His letter was from Skipton-in-Craven, North Yorkshire, England.

GEOFFREY SPERBER, M.S. '62, writes from the University of Alberta in Edmonton, that the third edition of his book, "Craniofacial Embryology," will be published in June by John Wright & Sons, Ltd., England. Also, an "Atlas of Radiographs of Fossil Hominid Dentitions" has been accepted for publication by Alan R. Liss, New York, and will appear in 1983.

SEUNG HO PAIK, Perio '71, is now clinical professor of

periodontology at Yon Sei University School of Dentistry in Seoul, Korea.

AARON FENTON, Prosthodontics '72, Pat and Sara have returned to Toronto from a six-month sabbatical. He "flip-flopped" around Scandinavia giving many lectures, but regrets he never met up with Bill McHugh who was lecturing at many of the same places either just before or just after Aaron. The Fentons did a lot of traveling and "visited and worked with EDC alumni: Barrie Gillings ('61), 9M2RR Kuala Lumpur; Tony Coyne (GenDen '72), Surfer's Paradise, Australia; Terry Cutress (M.S. '63, Caries Research '71), Wellington NZMRC and Mike Orbell (Ortho '72, M.S.), Invercargill."

RUDI LANTELME, GenDen '74, and Karen announce the birth of their first daughter, Kirsten Fountain, July 13, 1980.

PATRICK TREASURE, GenDen '77, M.S. '81, is working on his Ph.D. in oral biology at the University of Washington in Seattle. He placed second in postdoctoral competition for the Hatton Award at the IADR.

MICHEL PERRIER, GenDen '78, spent part of April at EDC, a visit planned when he was last here in October 1979. A paper about the research he did then will soon appear. He is presently studying some aspects of inflammation and trauma in animal models. He says he was very busy inasmuch as he had "only two weeks and worked from early in the morning till very late. Something my friends won't believe," he adds with a twinkle, "but it's the truth!" Michel is in private practice in Switzerland and also works as a consultant in the Department of Periodontics at the University of Bern with **HANS GRAF**, Perio '62, M.S. '63. Dr. Graf is

chairman of the department and administrative director of the School of Dentistry. Michel and Hans met at the Center eighteen months ago. Michel says, "We became friends at the time and I am at Bern because he was interested in the kind of research I am doing with Alan Polson."

Stan Handelman graciously shares these excerpts from letters:

WILLIAM H. MYONES, GenDen '74, writes from Pembroke Pines, Florida: "I am in newly renovated offices. . . My practice is also progressing at a nice rate and I find private practice a very rewarding experience. I am also working one day a month at the Jackson Memorial Hospital general resident program; however, I will be switching in the fall to the temporomandibular joint dysfunction clinic. It is a periodontist, an oral surgeon, a psychologist and a prosthodontist, trying a group approach to the treatment of this syndrome. I find my attachment to the only academic possibility in the area rewarding and also stimulating. We hope that in the future the Jackson program will grow into something similar to the Eastman Dental Center. . ."

JAMES ROZANSKI, GenDen '78, director of dental services at St. Luke's Memorial Hospital Center in Utica, New York, says, "St. Luke's Memorial Hospital is faring quite well considering the short time our (general practice residency) program has been in existence. The first year of the program is providing both a challenging and a rewarding experience for me. We are constantly reviewing and changing the program for the better. . . I frequently reflect on the excellent training I received at both EDC and The Genesee Hospital. It has provided an excellent basis for my current endeavors."

Staff News

William D. McHugh, EDC's director, was elected vice president of the American Association for Dental Research at the organization's annual meeting held in Chicago in March.

In Memoriam

Richard G. Berman, formerly research assistant in the Department of Microbiology, died in March at the age of 32.

Reunion News

Prosthodontics

The annual EDC Prosthodontics Alumni Reunion will be held at the Center on Friday, June 5, the day after the third annual Allen A. Brewer Upstate New York Prosthodontic Conference.

The conference topic is "Advances in Prosthodontics: TMJ - A Joint Effort." The faculty for this approved continuing education course are Drs. E. David Appelbaum, Allen A. Brewer, Fred G. Emmings, Howard F. Lyboldt, Edward W. Sommers, Ross H. Tallents and George A. Zarb.

The conference, named for the retired chairman of EDC's Department of Prosthodontics, is open to all dentists, auxiliaries and students.

Orthodontics

Jack Posen, new president of the Eastman Orthodontic Alumni Association, is pleased to announce that the biennial meeting of the association will be held in San Juan, Puerto Rico, March 15-19, 1982.

The program will be of general interest with emphasis on functional appliance therapy. The program chairman is Tony Quinn. Jaime DeJesus is the local arrangements chairman.



MEMBER PUBLICATION
AMERICAN ASSOCIATION OF DENTAL EDITORS

From the Director's Chair

I am pleased to be able to report that the Center's financial operations during 1980 were considerably better than expected. Our operating deficit was substantially reduced and, in the second six months of last year, consisted only of sums expended on the old buildings and on interest payments. The burden of maintaining 800 Main Street East was lifted when the property was sold to Jalynn, Inc. After a four-year deficit, the likelihood of a balanced budget seems good.

The Center recorded nearly 43,000 patient visits last year; 10,000 more than in 1979. This dramatic increase was achieved with no staff increase and resulted from outstanding effort by many people. The resulting increase in income from patient care is the largest single factor in the improvement in the Center's finances. While increases were achieved in all departments, the most substantial and significant were in General Dentistry. The Smilemobile recorded an additional 1,110 visits and, as a result of increased clinical activity and improved recovery from Medicaid, it is approaching financial self-sufficiency. Special clinics on Saturdays and in the evenings were extended and proved popular with patients, and with staff involved in them as part of an incentive plan.

Research activities continued at a high level and support from grants and contracts increased. Competition for funds from both the government and private sectors has become extremely keen. I am optimistic, however, that the large number of impressive research proposals generated by our staff in recent months will attract additional support for the coming year.

Bill L. Hugel.

NEW PROGRAM

The first class of students in a new, one-year training program for dental assistants will enter in July. The program, unique in Rochester, will be under the aegis of the Department of General Dentistry.

Phyllis Brunette, the department's clinical administrator, is also assistant administrator for the program. She says, "We are delighted with the calibre of applicants. We had originally planned to admit six to ten students and have accepted seven to date. There is a good cross-section, too. Some will graduate from high-school in June. Others are women wanting to make a career change. Still others are women who have been at home raising children and now want to start a career."

The idea for the Center's program evolved over a period of time. The only other program available locally for the past dozen years has been a private, commercial four-month program.

Phyllis says, "Certification of dental assistants will soon be what licensure is for hygienists. And, in order for assistants to be certified they must be graduates of a one-year or two-year program. Our goal is to have all our graduates certified and all our students will be prepared to challenge the exam."

Stanley Handelman, chairman of the Department of General Dentistry and the program administrator adds, "Our graduates will be diversified, well-trained assistants ready to enter the field of general dentistry or one of the specialties in private practice, a hospital setting or government clinic. They will provide a needed pool of well-trained assistants and will be of significant service to the dental community."

Instructors for the program will be members of the faculty and staff of EDC. The curriculum will include training in assisting for general dentistry and dental specialties like oral surgery, orthodontics, pedodontics, periodontics and prosthodontics; office management; dental laboratory and dental x-ray procedures. The students will work chairside with dentists and become proficient in four-handed dentistry.

Krista Smith, a certified dental assistant with a bachelor's degree in allied health education from SUNY Buffalo, will be educational coordinator for the program. She is coming to Rochester from Zanesville, Ohio, where she helped establish a similar one-year dental assistant program. Her future husband is a general dentistry resident at Strong Memorial Hospital and is planning to practice in the Rochester area.



An assistant at the autoclave.

Recent Thesis



Walter Li, who received his D.M.D. cum laude from the University of the East in the Phillipines, came to EDC to study orthodontics because he "found it a challenging topic in dental school and wanted to learn more about it." He was awarded his Ortho certificate in 1979. After earning his Master's a year later, he returned to Hong Kong. He is setting up a dental clinic in a new hospital and also plans to practice.

Walter owned a car company in Hong Kong before he entered dental school and "likes driving fancy cars and racing." With a twinkle in his eye he mentions a Citroen he used to drive. He enjoys "all sorts of music, except classical" and became an enthusiastic skier during his sojourn here.

Walter has a married sister who lives in England where she works as a secretary. Another sister is an official language translator in Hong Kong. His brother, Ryan, is at EDC and expects to receive his certificate in Pedro in June.

A Comparative Cephalometric and Cineradiographic Study of Speech Produced by hearing and Deaf Women by Walter Li

This study was conducted to investigate deviant resonance in deaf speakers. Subjects included four deaf women and ten women with normal hearing. Cephalometric radiographs were obtained with the teeth on occlusion and during sustained phonation of vowels /i/, /u/ and /a/. Cephalometric cineradiographs were also obtained during production of the sentence, "Peter Piper picked a peck." Selective measurements were obtained from both sets of radiographic records. Means and standard deviations were computed for each measurement secured from normal speakers to provide a comparative basis for studying the four deaf speakers. The cineradiographs were also analyzed so that temporal features in speech produced by normal and deaf speakers could be compared.

The salient results of this investigation are summarized as follows: In deaf speakers, the tongue body neutralizes or centralizes in antero-posterior position within the oral cavity during vowel production. Within the lower pharynx, the root of the tongue retrudes closer to the posterior pharyngeal wall creating a constriction site which is considerably lower than observed in normal speakers. Associated with this constriction, the epiglottis frequently deflects towards the posterior pharyngeal wall and the hyoid bone consistently elevates to a higher level than observed in the normal speakers. The elevated position of the hyoid

bone results in a greater than normal vertical dimension in laryngeal pharynx as defined by respective positions of the hyoid and laryngeal sinus. Most of the deaf speakers also showed greater lip and jaw opening during production of some vowels.

These differences in physiologic relationships during vowels produced with normal and deviant resonances were also associated with marked differences in temporal features. In all deaf speakers studied, the durations of articulatory contacts and the duration of vowels produced between articulatory contacts were quite consistently longer than those produced by normal speakers.

It is hoped that this study will encourage further investigative efforts to define more clearly the physiological bases for the disordered and often unintelligible speech of the deaf.

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Alumni News Notes are due by June 15, please!

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