MOMENTUM
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News & Viewpoints
for Eastman Dental Center
Alumni & Friends

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From The Director's Chair

The New Building

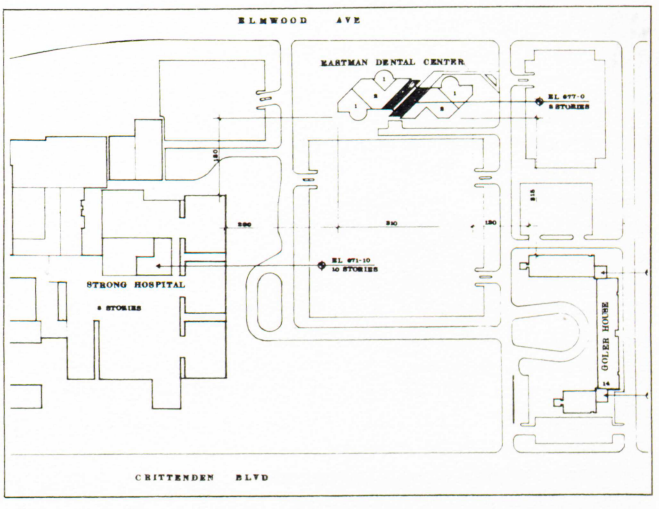
A great deal of planning and preparation has taken place in the two and a half years since the final decision to build a new facility for Eastman Dental Center was made. A site has been selected, an architect chosen, the building designed, and a start made on construction.

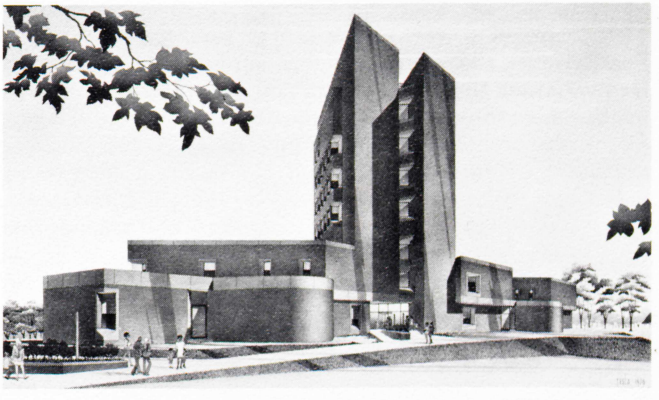
Since the importance of maintaining a separate and distinct identity for the Center was recognized from the outset, great care was taken to select an architect who could design a building of distinction as well as one which is perfectly fitted for its functional requirements. Mr. Richard Foster of Greenwich, Connecticut, who was chosen after an extensive search, has designed many important buildings including the N.Y. State Theater, the Bobst Library and the Tisch School of Commerce at NYU, and the Kline Biology Tower at Yale. He spent a good deal of time in meeting with Center staff to define our present and future programs and designed a building which shows every indication of being attractive and exciting, as well as being highly functional.

Before selecting the site for the building, a number of alternative locations were considered. The final site was chosen because, as can be seen from the attached plan, it is very close to the University Medical Center, occupies an important position on Elmwood Avenue, and has space for its own parking lot.

The building will have approximately 84,500 square feet of which just over 14,000 will be "unfinished" basement space for future expansion. The present buildings on Main Street have just over 60,000 square feet of usable space. All clinical areas will be on the first and second floors and most research laboratories will be located in the slender tower which rises seven floors above them. Rotundas, in which operatories are arranged in a radial design, will be a major feature of the Orthodontic, Pedodontic, and General Dentistry areas. An auditorium, seating approximately 100, is included, as is a library, seminar rooms, and many other facilities.

Construction started in January 1976 and the concrete shell for the basement and first floor is almost complete. It is expected that the building will be complete by the end of 1977.



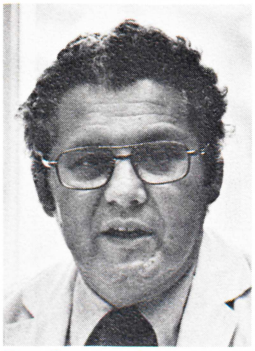


An artist's rendering of the new facility at 625 Elmwood Avenue. The basic building will be two stories high. Part of the structure will be a seven-story tower, with half of the tower rising to eight stories.

An aerial view of the site, taken June 26, clearly shows the shape of the lower floors of the new building. Elmwood Avenue is in the background.

The General Dentistry Resident - An Overview

Fifteen to seventeen dentists are accepted each year into the Center's General Dentistry program. The quality of our current applicants is very high: with few exceptions, all are in the top third of their class at dental school and have strong faculty recommendations. As most who apply are specifically interested in our type of program, there is a large degree of preselection on the part of the candidates and many first hear about the Eastman Dental Center from former graduates.



Dr. Stanley L. Handelman

"The environment of the Dental Center is quite different from the atmosphere at dental school," comments Dr. Stanley L. Handelman, Chairman of the Department of General Dentistry. "The General Dentistry program has a strong academic orientation and, to that extent, fits in with other specialty programs here."

The objectives of the program are to provide additional training opportunities in clinical dentistry and to develop skills for research and teaching. Faculty members, all of whom have private practices as well as teaching duties, and many of whom do research as well, provide models for students to emulate.

Carol Scuro, Edward Thibodeau, and Domenick Zero are completing their first year in the program and in many respects typify the general dentistry resident. They are attractive, intellectually alert, and determined to establish careers that will let them combine teaching and research with clinical practice.

Dr. Scuro, who received her D.M.D. from the University of Pennsylvania, enjoys the academic approach at the Eastman Dental Center. She feels she has learned well how to evaluate the literature. She chose to enter dentistry because the field offered her the opportunity to practice while teaching and doing research, and provided her with a degree of independence. She is currently "looking at the internal textures of various composite restorative materials." She believes that, once in practice, her training here will enable her to handle 80 per cent of the problems she encounters. Further, her education has taught her that the other 20 per cent ought to be sent directly to specialists.

She is married to a dentist, and plans to combine a family with dentistry. She enjoys tennis, sailing on Lake Ontario, cross-country and downhill skiing, jogging, and racquetball.

Dr. Thibodeau, a native of Auburn, Maine, is a graduate of Tufts Dental School. He came to Eastman "to build and enhance the knowledge and expertise" Tufts' new three-year program afforded him. His first year at EDC has given him a respect for quality dentistry both clinically and academically. He is pleased with the encouragement he has received to do research and with the opportunity to gain skill in teaching. He is now studying the effects of low intensity direct electric current and its application to deep caries and pulpal therapy. Dentistry allows him to combine his academic and research interests with his desire to work with people on an individual basis. An active sportsman, he swims every night, enjoys cross-country skiing, tennis, and racquetball. He is also interested in photography, and enjoys playing contract bridge. He shares these interests with his wife, who teaches reading in the Rochester City School District.

Dr. Zero, who was born in Brooklyn, holds a D.D.S. from Georgetown. The second of five children, he was encouraged by his family to become a dentist. He won't say he liked going to the dentist as a child, but seeing dental equipment always fascinated him.

He says, "Fate brought me to the Dental Center." One day during his senior year at Georgetown, he spoke to a Pedo alumnus, Dr. Michael J. Ternisky, who suggested he apply. His interest in research and education has been fostered and stimulated here. He is doing research on the microbiology of plaque and sees a possibility of fighting dental disease by diet. He thinks, for instance, that, within a generation, the government may exert pressure on food companies to reduce the amount of refined sugar in foods.

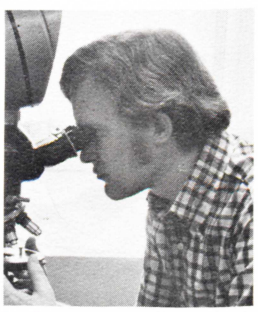
He claims the diversification of the program has rounded out his education. A sports-oriented bachelor, he is an avid tennis player and an enthusiastic water and snow skier.

Recent Theses

Progression of Experimental Gingival Inflammation to Alveolar Bone Resorption in Squirrel Monkeys

by Lars Heijl

Lars Heijl, who was born in Visby, Sweden, was graduated from the University of Gothenburg School of Dentistry in 1972. Dr. Heijl was admitted to the Department of Periodontology, EDC, the following year. This September he will start his appointment as Assistant Professor in the Department of Periodontology, University of Gothenburg School of Dentistry.



A "gentle giant" of a man, Dr. Heijl enjoys sports, is a "listener to music," goes camping, and has traveled extensively in Europe and the Arab countries.

One of the principal features of inflammatory periodontal disease is destruction of alveolar bone, yet there is little information available as to how an inflammatory cell infiltrate in the periodontal tissues can mediate such bone resorption. This ultrastructural study of inflammatory induced alveolar bone resorption was planned to improve our understanding of the pathogenesis of bone resorption in periodontal disease.

Previous investigators at Eastman Dental Center have described a model for progressive marginal periodontitis in the squirrel monkey. This model was used in the present investigation to study alveolar bone resorption. Biopsies were

Commencement

Dr. Robert B. Shira, President of the American Dental Association and Dean of the School of Dental Medicine of Tufts University, gave the 1976 commencement address at a ceremony in the auditorium of EDC on Friday, June 11.

Dr. Shira's address, "The Challenge of Progress," was warm, witty, and wise. It delighted the 29 graduating residents, their families, friends, and the staff.

Dr. William D. McHugh made the opening remarks, after which Dr. Shira spoke. Each department chairman then presented certificates to students in his specialty. Congratulatory remarks by Dr. Robert L. Berg, President of the Center's Board of Trustees, concluded the ceremony.

Dr. Robert B. Shira (standing), as he gives the 1976 EDC commencement address. On the dais with him are Dr. William D. McHugh, Director, and Dr. Robert L. Berg, President of the Center's Board of Trustees.

Caught in a pensive moment during graduation, a handful of General Dentistry residents who received their certificates: (back row, from the left) are Drs. Carol A. Scuro, Rodney O'Connor, and Edward Novrogroski; (front row, from the left) John Dane and Stephen Cottrell.

Reunion News

Pedo

Dr. Gerald Rosen, EDC '71, was elected chairman of the organizing committee of the new EDC Pedo Alumni Association at the department's first reunion last fall. In a letter to Pedo alumni, Dr. Rosen said:

"Speakers at the meeting were interesting and diversified with equal emphasis on research and clinical aspects. Dr. Ivar Mjör spoke on pulpal reactions. Dr. Robert Gorlin gave a great fun-filled talk on genetics. Eastman regulars Drs. Michael Buonocore, Basil G. Bibby, James B. King plus Drs. Roland Hawes and Louis Ripa informed us of the latest in their fields. The table clinics filled out the program." The next reunion is scheduled for 1977.

The department is sending out a newsletter. The first appeared in April. If you have not received it, please write directly to Dr. Odd. B. Sveen.

Ortho

Dr. Justin Martin, EDC '66, outgoing president of the Orthodontic Alumni Association, reports that 50 graduates attended the department's highly successful alumni reunion, held June 6 through 9, at the Marriott Motor Inn.

The meeting was dedicated to the memory of Dr. Edgard Debanne, of Beirut, Lebanon, who died last year. Dr. Debbane, a member of the first Ortho class, was at the Center from 1954-1958.

A cocktail mixer opened the reunion on Sunday, June 6. The following day, second year students and alumni reported on research and presented table clinics. Tuesday was devoted to an all-day lecture by Dr. Andrew Haas, of Cuyahoga Falls, Ohio, who spoke on "Mixed Dentition Treatment." Again on Wednesday, research papers were presented.

New officers elected to the Association are Dr. Howard Starnbach, EDC '64, of Cincinnati, Ohio, president; Dr. Roscoe Mason, EDC '61, of Mesa, Arizona, vice-president. New members chosen to the Board of Directors are Dr. Thomas Hanewald, EDC '71, of Elmira, New York; and Dr. John Anthony Quinn, EDC '74, of Scranton, Pennsylvania. Dr. Albert H. Guay, EDC '66, continues as executive secretary.

The next reunion is planned for June 1978.

Please let us know your new address/new position/new practice/new professional or civic honors/new books/or other items of interest to fellow alumni!

Name _____ Dept. _____ Year _____

New Home Address _____

New Business Address _____ New Title or Position _____

Other News _____

_____

_____

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Stamp

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sampled prior to, and 1, 3, 7, and 14 days after, placing plaque-retentive silk ligatures around the necks of teeth in eight squirrel monkeys.

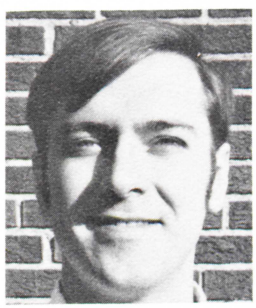
The biopsies taken before placement of ligatures showed small foci of inflammatory cells, predominantly plasma cells, in the connective tissue adjacent to the sulcular epithelium. The alveolar bone showed absence of osteoclastic activity. One day after the placement of ligatures, the gingival tissues showed a shift in cell population to a marked infiltration of polymorphonuclear leucocytes (PMNs) accompanied by ulceration of the epithelial lining in the gingival sulcus. The PMNs dominated throughout the rest of the experimental period, during which the microbial flora developed from a sparse gram-positive supragingival plaque into a subgingival plaque with an abundance of gram-negative organisms and spirochetes. The extent of the cellular infiltrate within the connective tissue gradually increased during the experimental period. At day 7, PMNs were seen to migrate into the connective tissue at the surface of the alveolar crest. Changes ranging from early and very subtle alterations in the periosteum and at the periodontal ligament surface to a pronounced osteoclastic resorption of bone were now initiated. PMNs were commonly found close to osteoclasts and bone surface in areas of resorption. Degranulation of these PMNs and, on occasion, of mast cells was also observed. At day 14, fewer PMNs and osteoclasts were seen while macrophages and other mononuclear cells, including young fibroblasts, increased in number indicating the beginning of a reparative phase.

The results from the present investigation and results from further investigations using the squirrel monkey model could provide valuable information toward better understanding of some mechanisms of bone loss in periodontal disease.

The results of this investigation indicate that bone resorption in periodontal disease may occur through a burst of osteoclastic activity triggered by an acute cellular infiltrate.

The Effect of Trace Elements on Dissolution of Hydroxyapatite by Cariogenic Streptococci

by Richard J. Herbison



Richard J. Herbison, a graduate of the Georgetown University School of Dentistry, was the first student to complete the Center's new General Dentistry program. He had planned to go into full-time practice upon graduation, but was tempted to stay at Eastman by the chance of using his educational background for teaching and research, and combining this with private practice. An avid sportsman and devoted ecologist who exercises muscles not motors, he is a zestful cross-country skier, an accomplished bicyclist, and a skillful skipper of sailboats.

From 1958 to 1968, the Naval Dental Service at Great Lakes, Illinois, examined more than a quarter of a million recruits. Only 360 were caries-free, and 36 of these came from an area surrounding Rossburg in northwestern Ohio. Water from that area contains relatively high levels of strontium, lithium, boron, and molybdenum, in addition to 1.5 ppm fluorine.

In 1971, Handelman and Losee found that, when Rossburg water was incorporated into the bacteriologic culture medium, there was a significant reduction in the dissolution of synthetic hydroxyapatite by acidogenic streptococci. This medium contained synthetic hydroxyapatite, and was designed to differentiate between acidogenic bacteria in plaque samples. The reduction in dissolution could be partially explained by the presence of the fluorine, but Dedhiya *et al.* (1974) offered a possible alternative explanation for this effect by showing that fluorine and strontium have a synergistic action in reducing hydroxyapatite solubility.

Handelman and Losee left three questions unanswered: 1) What elements or combination of elements produced this inhibitory effect? 2) Did the inhibitory effect result from direct reduction in hydroxyapatite solubility, or was there some alteration in bacterial acid production? 3) To what extent did the low levels of trace elements used alter the buffering capacity of the medium?

The investigations described in this thesis dealt with the effect of low levels of fluorine, alone and in combination with boron, molybdenum, lithium, and strontium, as the results of earlier *in vitro* studies of the effects of trace elements on bacterial function suggested that both bacterial growth and acid production are reduced by the presence of fluorine in dental plaque.

The trace element compounds evaluated in this study were reagent grade sodium fluoride, sodium borate, sodium molybdate, lithium chloride, and strontium chloride. Each trace element was tested alone and in combination at three levels: 1/10 Rossburg level; Rossburg level; and ten times Rossburg level. In addition, 1.5 ppm fluorine plus the three levels of boron, molybdenum, lithium, and strontium were tested for a total of thirty-one formulations. Five identical experiments were done, one for each of the five antigenic types of *S mutans*.

In general, increasing levels of fluorine tended to reduce hydroxyapatite solubility. Fluorine plus strontium proved to be a stronger inhibitor than either fluorine or strontium alone. Boron, molybdenum, and lithium did not have a significant effect on reducing hydroxyapatite solubility at the levels tested.

The results show that the combination of low levels of fluorine and strontium can significantly reduce demineralization of synthetic hydroxyapatite by *Streptococcus mutans, in vitro*. Boron, molybdenum, and lithium had no effect alone. Strontium alone had a slight effect.

This study has shown that 1.5 ppm fluorine in combination with 17 ppm strontium produced the maximum reduction in solubility of synthetic hydroxyapatite.

The next step will be to find the minimal levels of fluorine and strontium in combination that produce significant reductions in demineralization. If animal studies verify these results, a clinical trial will be planned. A reduction in dental caries over and above the approximately 60 per cent reduction in caries that has already been achieved by community water fluoridation might be anticipated.

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Alumni News

Dr. John Branson Chrispens, the first student to receive a certificate in the joint EDC/UR teacher training program, now has a full-time position in the Department of Biochemistry and Nutrition at the University of Southern California School of Dentistry.

Dr. Leonard S. Fishman, who received his certificate in orthodontics in 1961 and was visiting instructor at EDC from 1971-1974, is now Assistant Clinical Professor and Director of the Cleft Palate and Orthodontic Programs, at the Upstate Medical Center in Syracuse, New York.

Dr. Mamoru Sakuda, a research associate from 1963-1964 in the Department of Orthodontics, was recently appointed Professor and Chairman of the Orthodontics Department at Osaka (Japan) University Dental School.

Dr. Charles Kolthoff, who received his general dentistry certificate in 1974, has been appointed assistant professor at the University of Wisconsin School of Dentistry.

Dr. Glenn Clark, who received his general dentistry certificate in 1975 and completed his M.S. in 1976, has been appointed assistant professor at UCLA.

Dr. Dorothy Ann Malcolm Geddes, who came to EDC on a Fulbright Fellowship in 1963 and received her M.S. in microbiology in 1968, is now a lecturer in oral medicine (preventive dentistry and periodontology) at Glasgow Dental Hospital and School of the University of Glasgow. She was awarded a Ph.D. from the University of Newcastle last year.

Dr. Flavio Pinto is returning to Guatemala where he will enter private practice, continue doing research, and teach part-time at the University of San Carlos. Dr. Pinto received his certificate in Pedo in 1974 and his M.S. this year.

The Editor's Corner

We plan to publish Momentum quarterly. Please keep us up-to-date on your activities - promotions, appointments, opening of a new office, honors and awards, and personal information. Tell us what you would like to see in future issues. The deadline for the next issue is November 1.