

# MOMENTUM

Volume 11, Number 1, Winter 1986

## News & Viewpoints for Eastman Dental Center Alumni & Friends

EDC

published by the Eastman Dental Center  
Rochester, New York  
William D. McHugh, D.D.S., Director  
Jo Helfer, Editor

### From the Director's Chair

## Highlights of the 1985 Annual Report

It is a pleasure to report that 1985 was a very good year for Eastman Dental Center with notable achievements in a number of important areas.

**Research** should be highlighted because, in addition to many important discoveries and developments, the Center achieved a record level of extra-mural support from grants and contracts of about \$1.7 million. Of that, approximately 40% was from industry and the remainder was from government. While very many members of the staff were involved in these research activities, I should like to pay special tribute to Dr. John D.B. Featherstone and Dr. Dennis H. Leverett, who attracted the largest amounts of research support. . . Concurrently with substantial increases in research support in some areas, other departments and investigators have lost support and it is one of the great strengths of the Center that endowment income allows us to support these individuals while they seek outside funding.

The projects listed below will give some flavor of the range and focus of the Center's research interests. (Should any reader want a complete listing of the Center publications for 1985, please write.)

- It has been shown that root caries is inhibited by fluorides but that the critical concentrations differ from that most effective against enamel caries.
- Maintaining levels of 0.1 ppm fluoride in saliva will completely inhibit caries, even in patients with greatly reduced salivary flow resulting from radiation of the head and neck for treatment of cancer.
- Peanuts and mature cheddar cheese (but not "regular" cheddar) contain organic materials with antimicrobial properties which reduce caries attack.
- The fluoride rinsing study in Brockport is continuing with good results and rinsing every 2 weeks seems to be as effective as weekly rinsing which was used initially.
- Bacteria which are resistant to fluoride tend to produce relatively little acid and are less likely to produce caries.
- Active destruction of the periodontal tissues is associated with certain specific types of bacteria, notably spirochetes. Some types of the disease may be controlled by anti-

microbial agents.

- Regeneration of damaged periodontal tissues is promoted by treatment of the root surface to expose collagen fibrils, and by procedures which facilitate repopulation by certain specific types of cells.
- Nursing home residents in the Rochester area take an average of 4.1 therapeutic drugs each day and almost half of these are types of mood-altering drugs which depress the flow of saliva. The influence that this has on oral health, taste and smell is being investigated.

**Educational programs** continued along recent lines with two additions. A new one-year program in Temporomandibular Joint Disorders was started in the Department of Orthodontics with major participation by the University's Department of Radiology. A second-year program in General Dentistry, with focus on Geriatric Dentistry, also got off to a successful start.

In view of the reduced national need and demand for specialists in Pediatric Dentistry, resulting from the dramatic fall in the prevalence of dental caries, it was decided to reduce the numbers entering our Pediatric Dentistry Program to four each year. This is half the number accepted five years ago.

The intake to the nation's dental schools has fallen by over 25% since its peak in 1978 and further reductions and closing of more dental schools are likely. This reduces the pool from which we recruit students for the Center's programs but, in spite of that, we continue to receive very large numbers of applications from individuals whose academic records and achievements are as high or higher than any previous group of applicants. It is gratifying to note that a substantial proportion of those who graduate from the Center's programs go on to appointments with a teaching and/or research component. In spite of the cut-backs in

continued on page 2

### IADR ROCHESTER REUNION

Alumni and current and former faculty of the Eastman Dental Center and the University of Rochester who are attending the AADR/IADR meetings in Washington are cordially invited to the reunion to be held:

Thursday, March 13  
5:30-7:00 p.m.  
Executive Room  
Shoreham Hotel  
(across from the Sheraton)  
Washington, D.C.

*N.B. Please check your IADR program to verify time!*



continued from page 1

positions in dental education, virtually all of our graduates who wish to enter full-time teaching or research have excellent offers of faculty positions from which to choose.

No major changes were made in our key programs but there were minor improvements in a number of areas, and new and popular graduate courses in Biostatistics and Data Analysis were given. The Center has participated in the information revolution and a substantial number of microcomputers and word processors have been acquired and put to good use. Further acquisitions are planned so that all of our postdoctoral students can become "computer-literate."

**Patient Care** continues to be one of the cornerstones of the Center's activities with almost 44,000 patient visits in 1985. This is slightly less than the record number in 1984 due mainly to fewer visits by children. We attribute this to the dramatic reduction in the prevalence of dental caries in children, which has occurred in recent years and which has substantially reduced the need for care. Income from patient care increased 8% due partly to increases in fees, improved collections, and partly to some innovative incentive programs. It is interesting to note that the numbers of clinicians treating patients at the Center has not changed significantly in the past decade during which numbers of patient visits and patient care income have increased dramatically. Numbers of ancillary staff have increased considerably during this time but there has been a major increase in real productivity.

We are currently in the midst of a series of appeals against Medicaid reimbursement rates set by the New York State Health Department. Some of these appeals date back to 1977 and while there has been little or no action on many of them for years, it now looks as though the issues will soon be resolved. At this stage, however, it is impossible to predict the outcome.

In addition to care provided within the Center, the Smilemobile has seen increased activity at City schools, thanks to organizational changes introduced by Dr. Ronald J. Billings, who has taken over responsibility for its operation. A new program to provide dental care to the residents of Fairport Baptist Home was developed and has just been

approved by the State Health Department. This paves the way for programs for other nursing homes, and these are currently being planned. The County Dental Health Program continues to focus on case finding, referral and follow-up for children in grades 7-9 in the City School District, and on the fluoride rinsing program for children in kindergarten through Grade 5 in Brockport.

A fascinating new program has been started to provide palatal stabilizing appliances for breathing and feeding tubes in premature, low-birth-weight newborn infants in Strong Memorial Hospital. Demand for this service has grown quickly and Dr. Adair and Dr. Durr now provide several such appliances each week.

A number of distinguished visitors worked at the Center during the year. These included Dr. John W. McIntyre, dean of the Dental School in Adelaide, Australia; Dr. Dennis Nelson and Dr. Donald Beck from New Zealand; and Dr. Youssef Guindy from Sweden. During the year, our staff gave over 100 invited lectures throughout the country and in many other lands, with Dr. John Featherstone and Dr. Alan Polson being most active in this regard.

Nine continuing education courses were given during the year to increasing audiences and the courses by Dr. Graser and Dr. Iranpour on tissue-integrated implants proved to be especially popular. Our development activities were quite successful with a modest increase in annual giving, notable gifts of equipment, and the J.D. Subtelny Endowment Fund reaching over \$110,000. Thanks to the work of the Trustees on our Finance Committee and the Center's endowment managers, plus the overall rise in the market, the Center's endowment fund showed substantial growth during the year.

While we can look back on a year of substantial achievement, 1985 will also be remembered as a year of new horizons. At the urging of Dr. Bryant Rossiter (past president of EDC's Board) and Mr. Max Farash (president), we started to explore the possibility of taking preventive dental programs to developing countries in the "third world." After considering several options, Sri Lanka was finally selected as an appropriate country in which to try to develop such programs. Dennis Leverett and I will make a preliminary visit to Sri Lanka in January. (Our findings will be featured in the next issue of MOMENTUM.)

---

Dr. Cyril Ponnampuruma, science advisor to the president of Sri Lanka and director of the Institute of Fundamental Studies there, visited the Eastman Dental Center on November 8, to discuss the possibility of the Center helping his country address its dental needs.

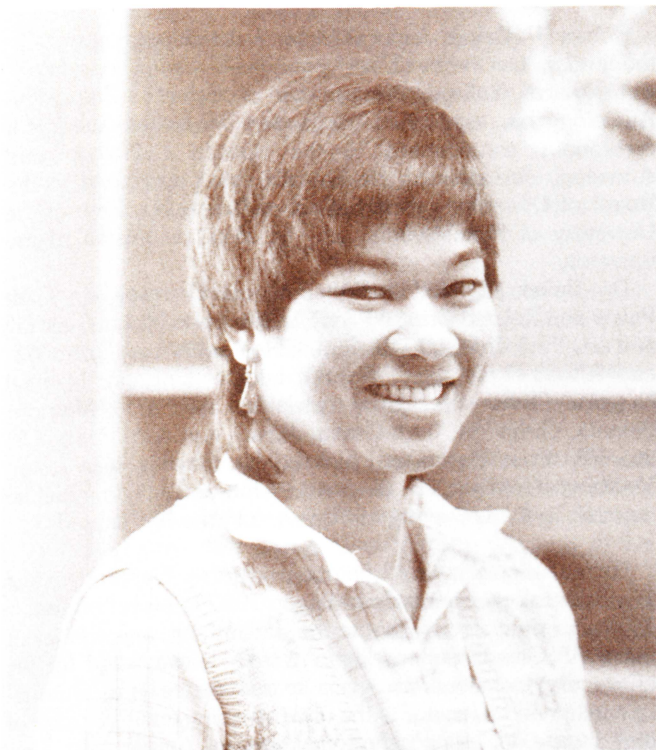
Dr. Ponnampuruma, internationally known for his work in astrochemistry, said, "The Eastman Dental Center is to dentistry what the Mayo Clinic and Pasteur Institute are in other areas. Sri Lanka is a small country and can be used as a mini-lab. Its literacy rate is high, 88%, and it has well-established health care systems. The country is ready to leapfrog to use the advances made in other parts of the world."

According to eminent Sri Lankan researchers, the incidence of dental caries is relatively low in the country, but periodontal disease is rampant and progresses rapidly. A high percentage of young Sri Lankans have severe periodontal disease, and many people lose all their teeth at a premature age. Oral cancer is also common, and 32% of all malignancies occur in the mouth.





## Research



Lesley G. Ellies

After Lesley Ellies received her B.D.S. from the University of Western Australia, she worked for a year at the Perth Dental Hospital as a general dentist. During that time she met several GenDen graduates — Chung-Ming Tse, '79, Viv Booker, '76, and Graham Pears, '75. She came to Rochester in the summer of 1982 following "four months of travel through Britain, Italy, Greece, and Austria, which was fun," she said.

While working toward the General Dentistry certificate she received in 1983, Lesley became intrigued with the possibility of doing research. She said, "I had never had any experience with research and thought it interesting to find out about it. I had heard lots of good things about John Featherstone (chairman of Oral Biology) and decided I'd like to work on a Master's with him. He's the best advisor! He has a lot of spirit, even though my project was not in line with what's going on in the rest of his department."

Lesley said she also relied extensively on the help and encouragement given by Dennis G.A. Nelson, Ph.D., until recently a Fogarty Fellow at EDC, Joseph Natiella, D.D.S., an oral pathologist from SUNY Buffalo, and J. Malcolm Carter, Ph.D., a metallurgist, also from Buffalo.

She said, "I am grateful for the scholarship support the Center gave me while I was working on my Master's." Lesley was a recipient of one of the five 1983/84 Annual Giving Research Fellowships.

Before Lesley Ellies left for the University of Toronto where she was awarded a Medical Research Council Fellowship to work on a combined Ph.D./Prosthodontics Program, she reminisced. "I was back home in Australia the Christmas before last and saw my parents and my brothers." Her father and older brother are dentists, her younger

brother, a physician.

"I've made good friends in Rochester. It will be hard leaving them. Eventually I'd like to have a university position where I can teach, do research, and clinical work."

An abstract of her thesis follows.

### **Carbonated Apatite Implants: Preparation and Early In Vivo Tissue Response** by Lesley Gae Ellies

Mature bone mineral is a poorly crystalline, carbonate containing hydroxyapatite (HA). Non-carbonated HA has been shown to be biocompatible as an implant material. However, conflicting results have been reported in relation to its ability to predictably allow direct bone union. Carbonated apatites have been shown to be more chemically reactive than pure HA *in vitro*.

The aim of this study was to prepare sintered apatites incorporating 0, 3, and 6% carbonate by weight and to quantitatively analyze their tissue response *in vivo*. The sintered apatites were prepared by heating compressed pellets of precipitated carbonated apatite under a CO<sub>2</sub> or N<sub>2</sub> and steam atmosphere between 830-1050°C. Optimal synthesis conditions were determined experimentally. The surfaces were examined by x-ray diffraction (XRD), infrared spectroscopy (IR), microhardness testing, and scanning electron microscopy (SEM).

Implants of 4 x 4 x 1 mm were placed 2 mm into the medial aspect of rat femurs. Following sacrifice at 4 weeks, the femurs were fixed in formalin, demineralized in formic acid, and embedded in glycol methacrylate. Sections were cut on an ultramicrotome set at 1.5 µm and stained with toluidine blue. A point counting technique using standard stereological grids and a low power microscope was used to measure areas of new bone formation. Thickness of the fibrous connective tissue capsule was measured on an image analyzer.

XRD and IR of the implant surfaces confirmed an apatite structure incorporating the desired carbonate concentrations. Microhardness testing showed the microporous area of the HA (0% carbonated apatite) to have a similar volume mineral percent to normal enamel (approximately 85%), while the 3 and 6% carbonated apatites were very dense (98 to 100 volume mineral percent). SEM showed two types of pores, macropores 10-50µm in diameter, and micropores 0.1-0.3 µm in diameter.

The tissue response to the implants was one of minimal inflammation with areas of bone deposition in close approximation to the implant surface. Results showed a significant difference in the amount of new dorsal bone formed in the test groups compared with the positive control group, and an increase in new bone formation in the marrow cavity with increasing carbonate content in the implant.

A new biomaterial which is the closest analog to the naturally occurring mineral in bones and teeth that has been described to date has been synthesized. Functional remodelling of bone appeared to take place in the test groups in response to the presence of the implants, and results indicate that carbonated apatite implants may be more stable than non-carbonated apatite implants in the host bone. The successful findings from this study warrant further investigation of carbonated apatite as an implant material.



## Development

### Annual Giving

G. Robert Witmer, Jr., vice president of EDC's Board and chairman of the 1985-86 Annual Giving Campaign, which will close April 30, is pleased to announce that as MOMENTUM goes to press in January, cash, pledges, and in-kind contributions top the \$54,000 mark.

Vigorously helping him are fellow trustees Max M. Farash, Thomas Gosnell, James C. Henderson, Louis A. Langie, Jr., Wilfred A. Springer, and Edward T. Wentworth, Jr.

Senior staff members Steven M. Adair and John D.B. Featherstone are co-chairing the in-house effort.

### New Funds

Malinda B. Fischer, director of development, is gratified to report the establishment of two funds.

The family of Alberta Miller Barker Kendall has created a memorial fund in her memory. Mrs. Kendall, who graduated with distinction from the Rochester Dental Dispensary School for Dental Hygienists in 1926, died in October.

Robert W. Baker (see Staff News), with alumni Robert J. Bray, Ortho '75, M.S., '76, and Albert H. Guay, Ortho '66, spearheaded the J. Daniel Subtelny Endowment Fund, which is now over \$115,000. Dr. Donald H. Baxter, senior clinical associate in the Department of Orthodontics, is chairman of the Edward N. Gilda Memorial Fund, which will be used to refurbish the Department of Orthodontics conference room and library.

## Staff News

Robert W. Baker, senior clinician in the Department of Orthodontics, has received two prestigious recognitions lately. The Ithaca College Department of Speech Pathology-Audiology has established the Robert W. Baker Award for meritorious contributions to the Speech Pathology and Audiology departments. He has also been appointed to the Board of Overseers of the School of Dental Medicine of the University of Pennsylvania, and an associate trustee of the university.

Dr. Baker attended the International Congress on Cleft Palate and Related Cranial-Facial Anomalies in Monaco last fall and saw the following EDC alumni: Howard Aduss, Ortho '62, and Alvaro Figueroa, Ortho '80, both of Chicago; Michael Nugent, Ortho '68, from Adelaide, Australia; Mamoru Sakuda, Ortho '64, from Osaka, Japan; and Sam Rivoli, Ortho '78, from Rochester. Also at the meeting was Ralph Voorsmit, GenDen '75, an oral surgeon and full-time faculty member at the University of Nijmegen in the Netherlands.

Helmut A. Zander, chairman of the Department of Periodontology from its founding in 1957 to his retirement in 1977 and now a consultant to the department, was winner of the 1985 Gies Periodontology Award. He was cited for his outstanding contributions over a span of 50 years as a dental researcher and educator to the understanding and treatment of oral disease, including periodontal disease.

### EASTMAN DENTAL CENTER 1985-86 ANNUAL GIVING CAMPAIGN

Name \_\_\_\_\_  
Last First Middle

Address \_\_\_\_\_  
Number and Street City State or Country Zip

☐ Trustee ☐ Friend ☐ Alumnus ☐ EDC Staff

Department \_\_\_\_\_  
Class \_\_\_\_\_

☐ Matching Gift(s) \$ \_\_\_\_\_

My total gift will be \$ \_\_\_\_\_ to be paid as shown:

☐ I am enclosing total gift

☐ I enclose initial payment of \$ \_\_\_\_\_  
and plan to send the balance as follows by April 30, 1986 \_\_\_\_\_

☐ I am sending securities:

Name of Company \_\_\_\_\_ Number of Shares \_\_\_\_\_

☐ My gift is for Institutional Programs

Amount \$ \_\_\_\_\_

☐ Other please specify \_\_\_\_\_

\$ \_\_\_\_\_

☐ I would like more information to endow an annual gift to EDC.

Signature of Donor \_\_\_\_\_

Date \_\_\_\_\_

Please make checks payable to Eastman Dental Center  
1985-86 Annual Giving Campaign and return.

Gifts are deductible for income tax purposes.

Thank You!



## Alumni News

**Lisbon Schmeiske**, Intern '36, and his wife toured the Center in October. They met when she, then a student at the University of Rochester, had a toothache which he treated at the Eastman Dental Dispensary.

**Howard Aduss**, Ortho '62, is acting director of the Center for Craniofacial Anomalies at the University of Illinois Hospital at Chicago.

**Martin Curzon**, Pedo, M.S., '68, who left the chairmanship of EDC's Department of Oral Biology in 1983 to become chairman of the Department of Child Dental Health at the School of Dentistry of the University of Leeds, England, was at EDC in November, "visiting and tying up ends from the snack and barium studies."

His hectic schedule in Leeds agrees with him. He looks fit and cheerful. He says, "I'm very busy! I've started postgraduate courses in Pedo, Ortho, and Community Dentistry." He has also instituted the first postgraduate training program in the United Kingdom for dental care of the handicapped.

Martin's current research interests include fluoride toxicology, the dental status of immigrant groups from India and Pakistan, and dental caries in medieval archaeological material. He says, "I have identified nursing bottle caries in 13th century children."

His clinic which draws on a population of 4,250,000 is fast becoming a "prime referral center for pediatric dentistry." The caries rate in Leeds, with no fluoridated water supply, has "gone from appallingly bad to bad."

Martin says, "I'd welcome any visitors, or anyone wanting to take a sabbatical to do restorative pediatric dentistry."

Martin also brought news of **Bernadette Drummond**, Pedo '81, M.S. '82, "who is working towards a Ph.D. at Leeds, enjoying herself, and doing a lot of teaching and clinical work on pediatric patients."

**Zia Shey**, Pedo '72, is now director of advanced educational programs at the New Jersey Dental School of the University of Medicine and Dentistry of New Jersey.

**Stanley Silber**, GenDen '73, in private practice in Philadelphia, writes, "I feel the lessons learned (at EDC) have had a profound influence on me. I find I am conscious of quality and compassion."

**Domenick Zero**, GenDen '76, M.S. '79, is back at EDC as clinical and research associate in Oral Biology and General Dentistry, after spending four years at the Dental School of the Medical College of Virginia.

**Jack Weil**, Pedo '77, writes from Vienna, VA, that his wife Margo gave birth to Matthew on June 27.

**Bob Adler**, GenDen '79, and Cheryl are pleased to announce the birth of Ellie Marisa Shour on July 23. Bob attended the tissue integrated prosthesis course at EDC in November, as did **Peter Aborn**, Prostho '76.

**Osman Sahinoglu**, Ortho '80, writes from Turkey, "I have received MOMENTUM. I must tell you right away that I was very impressed when I read the news about the establishment of the J. Daniel Subtelny Endowment Fund. I read the lines with interest and deep sympathy. I was proud of it and felt once more that I am part of EDC."

**Steve Miller**, GenDen '81, sent from Pittsburgh, PA, a copy of SmileLine, his sprightly newsletter for patients.

**Steven M. Kazley**, GenDen '82, Ortho '84, is in private practice in Rochester.

**Oariona Lowe**, GenDen '82, and **Evangelos Rossopoulos**, Prostho '82, were married in California just before Christmas.

**Peter Cooper**, Perio '82, in practice in Pasadena, CA, and his wife are delighted with their son, Jared, born November 1.

**Jose Castaneda**, Pedo '83, writes from Guatemala that he has relinquished his part-time faculty position at the University for a hospital position that is "more convenient to my pedo private practice."

**Michael Tencza**, Pedo '83, writes, "I would like to announce my engagement to Elizabeth Priolo. We are to be married June 21."

**Brendan O'Connor**, GenDen '85, who is at Queens College in Belfast, Ireland, where he is "doing an M.D. degree," was at the Center recently "to complete the last bit of a research project." He plans to specialize in maxillofacial surgery eventually. He says of his three-year program, "I'm enjoying it very much. It's pretty time consuming, but going well, and presumably all worthwhile."

**Philip J. Hanes**, Perio '85, received the first place award at the 1985 Balint Orban Memorial Program for the best student research paper at the American Academy of Periodontology meeting in San Francisco in September. The paper presented was *Cell and fiber attachment and demineralized dentin from normal root surfaces*. Phil writes, **Carole(McKnight-Hanes)**, Pedo '85) and I are now settled in our new home in Jackson, MS, and we are enjoying our teaching and research at the University of Mississippi Medical Center."



MEMBER PUBLICATION  
AMERICAN ASSOCIATION OF DENTAL EDITORS



## Deadline for Alumni News Notes: April 1

Name _____	Dept. _____	Year _____
New Home Address _____		
New Business Address _____	New Title or Position _____	
Other News _____		
_____		
_____		
What features would you be interested in seeing in MOMENTUM? _____		
_____		
_____		
Please mail to: MOMENTUM		
625 Elmwood Avenue		
Rochester, New York 14620		

---

# MOMENTUM

EASTMAN DENTAL CENTER  
625 ELMWOOD AVENUE  
ROCHESTER, NEW YORK 14620