

Alumni Bulletin

SCHOOL OF  
DENTISTRY

Spring Issue 1983

Indiana University

**Alumni Bulletin**

Indiana University  
School of Dentistry  
ALUMNI BULLETIN  
CONTENTS

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# The Central Services Program At the IU School of Dentistry

*Charles J. Palenik, Assistant  
Professor of Oral Microbiology\**

It's 4:45 P.M. and it's Friday. A tired fourth year student at the Indiana University School of Dentistry carries two used trays of operative instruments to the check-in window of the main Clinic on the third floor. The student suddenly realizes that he knows very little about the recycling of the instruments he uses each day. For three and a half years, sterile instruments have "appeared" at the beginning of each clinic session and he has been taking the whole process for granted. His interest raised, the student asks a question of the white-coated woman behind the counter and learns that last year over 125,000 trays and packs were cleaned, inspected and sterilized.

Each working day dental students and dental hygiene students perform a variety of clinical procedures, and their training is made easier by the cooperative efforts of a large number of supportive staff members. One such group of individuals is employed in the Central Services Program.

## **The Beginnings**

In September of 1973, Dean Ralph E. McDonald announced that the School of Dentistry would establish a centralized system for the sterilization of dental instruments. Such a program would improve the level of both patient care and student education. Under the system's tray set-up approach, instruments selected by the individual departments would be supplied for each type of treatment. This process would reemphasize the clinical philosophy of each

participating department. In addition, the instruments would be cleaned, handled and processed by a small number of new staff members hired to implement the system. Students would be assessed a usage or rental fee that would be less than the straight purchase plan already in place.

Dean McDonald asked Assistant Dean Michael R. Curtis to coordinate the administrative aspects of the project with departmental chairmen. Dean Curtis was also to estimate costs and make financial arrangements for the initiation of such a program. Dean McDonald asked Dr. Chris H. Miller to evaluate the types of sterilizing equipment that would be needed. Dr. Miller designed the trays to be used and planned the lay-out of the desired equipment and fixtures. He was later appointed Director of the Facility. Estimates of start-up costs at that time approached \$500,000. Funds were needed for area remodeling, purchase and installation of sterilizing apparatus, instruments, trays, supplies, personnel costs and loan interest.

To finance the undertaking at the lowest possible rate of interest, Dean Curtis suggested that the school acquire an "interim operating loan" from the university. This meant that the University's central administration issued a line of credit to the School of Dentistry to make purchases on an approved budget. Interest would be charged only on the cash deficit. Because rental fees would be collected at the outset, total funds necessary for program development did not have to be borrowed and the highest level of the loan was under \$350,000. The plan in 1973 was to retire the loan gradually

\*Professor Palenik is Coordinator of Clinical Asepsis for the Dental School.

over a period of ten years and to build an adequate surplus for equipment replacement. The agreement would never be terminated because operating equipment and instrument replacement would have to be continuous. It was anticipated that major replacements would not be required for 7-10 years. When new equipment was needed, funds could be "borrowed" back against the initial line of credit if a cash surplus was not yet attained.

### To Rent or Own

Most dental schools now have some form of centralized instrument sterilization. Student involvement in these sys-

tems varies considerably. In fact, some schools make their students responsible for cleaning and sterilizing their instruments. At some schools the students still purchase (and then retain after graduation) all their instruments. Other schools require the students to purchase some instruments and rent others. A total rental system is the choice of a limited number of schools. This decision is not lightly made because the success of a total rental system depends upon a number of factors. If conducted properly, such a system can reduce the students' educational costs. It can also enhance their clinical experiences by relieving them of the burden of maintaining their instruments. The quality of purchased instru-



**FIGURE 1:** Dr. Chris H. Miller, Director of the Central Services Program, inspects the operation of the large steam autoclave.

nents used 2-3 years would be questionable. Also, the chances of cross-infection for both patients and operators are greatly reduced in a rental system. However, a number of factors might be considered disadvantages of the rental plan. By renting, the students would not have some usable instruments to take with them into their practices. Also, there is some feeling that the lack of ownership would lead to irresponsibility by the student renters.

Fortunately, the rental system in use at our School has proved to be effective and financially viable. The debt is being retired and the students continue to save money when compared to a straight purchase plan. This success is directly related to the cooperation of the students and to the efforts of the supporting staff. The present freshman class pays \$220 per semester to participate in the program. These funds are used for a variety of purposes. Most instruments, equipment and materials used in the technique-type courses are supplied. Also, hand and rotary instruments and many pieces of equipment used in the clinical areas are provided. These items are inspected, repaired and replaced at regular intervals. This allows the students to use both the functionally correct and the most efficiently maintained equipment available. Hopefully, these high standards for dental instruments will be carried with the students into their practices.

### **Nuts and Bolts**

The decision to create a centralized area for instrument sterilization was presented to the School's Committee on Space Utilization in (1973). Any selected area would have to undergo extensive renovation. Also, University engineers warned that the floor would have to be structurally capable of supporting the weight of the new equipment. Eventually, Rooms 328 and 329 were selected. At that time these rooms served as technic and graduate clinic laboratories.

Dr. Miller visited a number of instrument sterilization facilities to study their layout and equipment. Other hospitals and clinics sent diagrams and explanations of their operations. The design selected by Dr. Miller was patterned after the sterilization area in Indiana University Hospital. All fixtures and equipment were removed from Rooms 328 and 329, as were several partitions. The result was one large room (about 100 sq ft) with two adjacent doors. The floors and walls were patched and refinished. The plan was to divide the area in half by creating a central "wall" of sterilizing equipment. Each sterilizing unit would then be enclosed by standard wall materials on both ends. This would create a large closet-like area that could be used for storage and for the protection of gauges and gas, steam and drainage lines. The former Room 328 would be converted into a "dirty" room or area. All used instrument trays and packs would enter only the "dirty" room. They could then be cleaned, inspected and repackaged. The major pieces of sterilization equipment were equipped with doors on both ends. Trays and packs on large carriers are placed into the sterilizers. When the cycle is complete, the entire carrier is pulled out into the "clean" room. The sterile materials can then be dispensed or stored in a cleaner environment (Figure 1).

The facility has four large pieces of sterilization equipment. Forming part of the dividing wall are a steam sterilizer (AMSCO, Medallion-M Series, Vacamatic "S", 24" x 36" X 60") and an ethylene oxide gas sterilizer (AMSCO, Medallion-M Series, Vacamatic "S", combination steam/gas, 24" x 36" x 60"). There is also a large dry heat sterilizer (Freas Mechanical Air Convection, 37" x 19" x 25"). In order to clean and rinse used instruments prior to sterilization, a hospital-sized ultrasonic cleaner (AMSCO, double chambered, 12" x 24" with power lids) was installed in the

“dirty” room. A variety of storage cabinets and work tables were added to both new rooms.

To resolve the problem of tray form, Dr. Miller designed a stainless steel tray with a solid lid and instrument inserts. Each tray set-up would contain all instruments and supply-type items, such as matrix bands, which can be sterilized by a single process. The types and numbers of instruments included in the trays were selected by the clinical departments and approved by the School's Instrument Committee. Modification of the tray set-ups has proved to be an on-going process. At present there are 26 different types of clinical instrument trays (Figure 2). Since these instruments are part of the rental system, each tray is coded as to department and type of procedure. For example, a tray labeled A-2 contains amalgam restoration instruments to be used in the Operative Dentistry clinic. The Central Services facility now controls a total of 324 trays. The facility sterilizes instruments, equipment and materials for student use, research purposes and state board examinations.

### All in a Day's Work

The instrument recycling process follows a regular pattern. Most used instruments are returned uncleaned in their original trays. Instruments from packets are collected in bulk (some departments require their students or clinical assistants to prepare the instruments for sterilization). Central Service personnel empty the tray contents into small perforated metal boats. Six boats are then ultrasonically cleaned together, rinsed and dried (Figure 3). Trays are also cleaned out and the inserts returned. The tray set-ups are then reassembled. At this time each instrument and bur is inspected and replaced if necessary. A paper towel is then sprayed with a rust-retarding agent and added to

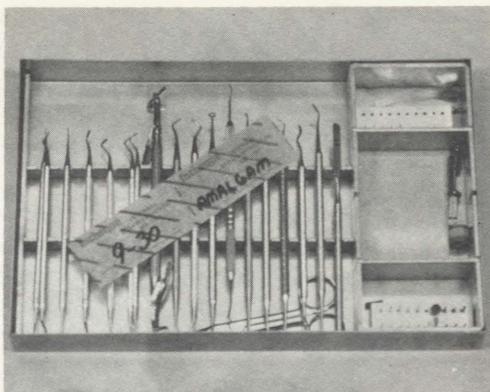


FIGURE 2: An amalgam restoration tray set-up ready for sterilization.



FIGURE 3: Instrument set-ups are collectively ultrasonically cleaned prior to sterilization.

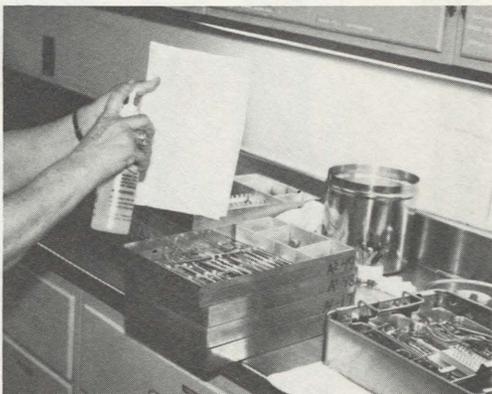
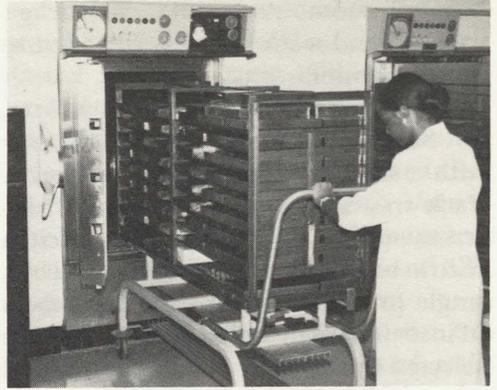


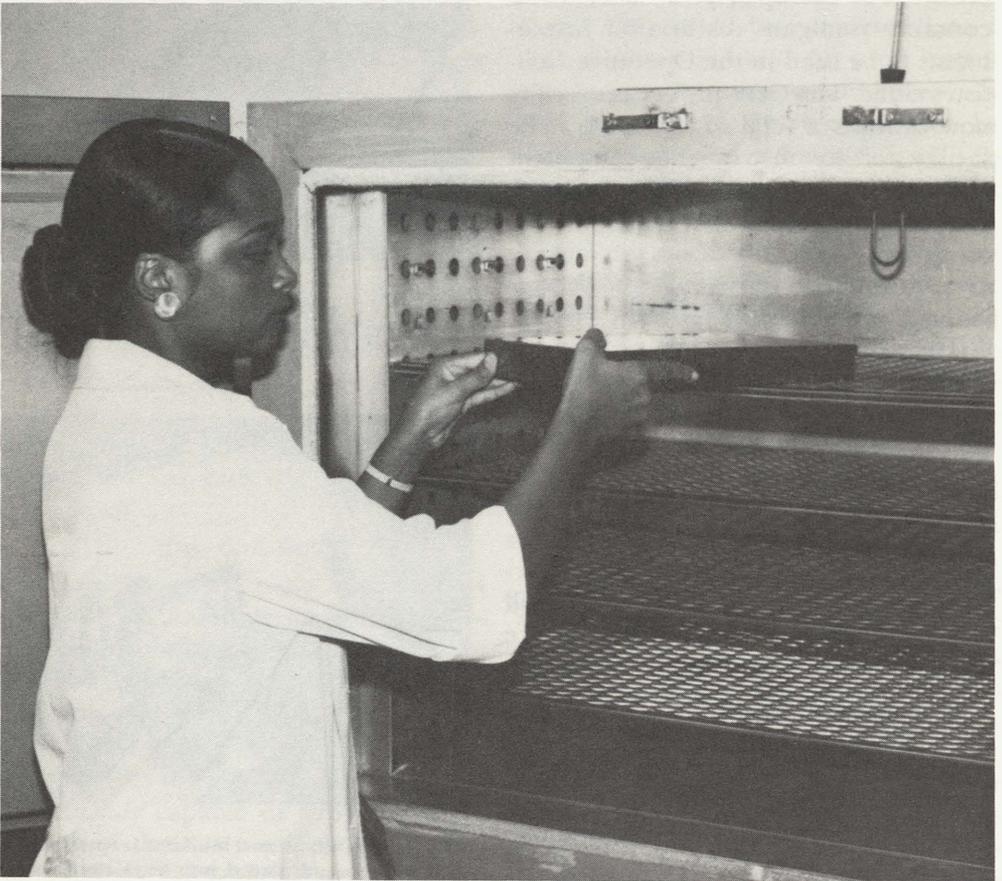
FIGURE 4: Liquid rust inhibitor is sprayed onto paper towels and placed into trays sterilized by the steam autoclave.



**FIGURE 5:** Examination instruments are heat sealed into plastic bags prior to sterilization.



**FIGURE 6:** As many as 90 trays can be steam autoclaved each cycle.



**FIGURE 7:** Several departments have elected to sterilize some or all of their instruments in a dry heat oven.

the trays to be steam autoclaved (Figure 4). Loose instruments such as those found in examination packs are enclosed in heat-sealed plastic bags (Figure 5). Next, the trays and packs are loaded onto mobile carriers and sent into the wall-mounted sterilizers (Figure 6). Items to be run through the dry heat sterilizer (Figure 7) are hand-loaded.

The steam autoclave process, which includes two high vacuum periods, is complete in about 20 minutes, while the ethylene oxide gas cycle takes approximately three hours. Dry heat sterilization is accomplished in 120 minutes. After being sterilized, the trays and packets are allowed to cool. Steam or dry heat sterilized items can be dispensed or stored immediately. A small amount of

ethylene oxide gas (especially on plastic items) can remain on the instruments after the cycle is complete. Therefore, such materials are aerated at room temperature for three days.

No system that cleans, inspects, sterilizes, stores, dispenses and returns close to 600 packs and trays each working day can operate smoothly without the dedicated efforts of its staff. Dr. Miller has served as Director of the Program since its inception, and the facility now has four full-time staff members (Figure 8). The success of the centralized instrument sterilization program and the student instrument rental system can be directly related to these individuals who "silently serve".



**FIGURE 8:** From left, Marcia L. Williams, Barbara Harden, Virginia L. Houchin (Supervisor) and Mildred J. Moore.

# Continuing Dental Education At IUSD: An Inside Look

*Susan M. Crum, Recorder of the  
Graduate Dental Program*

"Blustery winds, cold temperatures, a dusting of snow and some reports of icy patches on the highways." Not the worst weather report ever issued, perhaps, but then again not exactly what you want to hear when you're presenting an early-morning continuing education course and 26 participants are driving in to Indianapolis from all over the state.

Such was the case recently when Dr. Robert H. Derry, director of Continuing Education at the School of Dentistry, and his assistant, Ms. Sandra J. Manion, waited at the reception table on the fifth floor of the Union Building for the arrival of dentists, dental assistants and hygienists who had signed up for a course on preventing disease transmission in the dental office, presented by Dr. Chris H. Miller and Professor Charles J. Palenik, IUSD faculty members. "You can work really hard to prepare for one of these courses," Dr. Derry says, "but you can't predict the weather. In the winter, a successful turnout for a program is usually dictated by road conditions."

The first registrant to step off the elevator was Suzanne Govan, representing Dr. Gary Gonzenbach's dental office in Columbus, Indiana. Her report of driving conditions for the 50-mile trip from Columbus was encouraging, and as it turned out all of the participants arrived safely with few reports of driving difficulties. Even Dr. Martin Barco was running only a few minutes behind, despite having to drive all the way from Winamac, a 100-mile journey.

## Problems Faced

Weather aside, there are other problems that Dr. Derry and Ms. Manion face

each time they begin preparations for a C.E. course. Sandy Manion has been Dr. Derry's full-time secretary since he was named director in 1968, and they both are well aware of the biggest obstacle they come up against when organizing course offerings each year: the shortage of facilities. "Trying to find appropriate rooms for all the courses we offer seems to become more difficult each year," Sandy says. "Whenever possible, we try to schedule a room in the Dental School, but we often wind up at the Union Building or even at off-campus sites such as downtown hotels or out at the airport."

For Dr. Miller's course on Disease Prevention, which included a tour of the School's sterilization facilities, the morning half of the course was presented at the Union (where the luncheon was also served) and then the participants came back to the School for the afternoon lectures.

A major challenge that the Continuing Education coordinators must face regularly is having to synchronize the activities of many people who are directly and



Sandy handling an inquiry

indirectly responsible for the successful presentation of a course. Sandy says, "I don't know what we'd do without people like Mary Walton (receptionist in Complete Denture), who faithfully shows up in all kinds of weather at 6 a.m. to get the coffee perking. Or Scotty (Mr. Richard Scott, director of Illustrations), who can be counted upon to assemble all kinds of audio-visual equipment for us, or make a last-minute run back to the school for an item that someone else forgot — I've even seen Scotty perform an emergency trim job on a lecturer's photographic slides that wouldn't fit into the carousel slots. We just hope people like Mary and Scotty realize how much they are appreciated and needed."

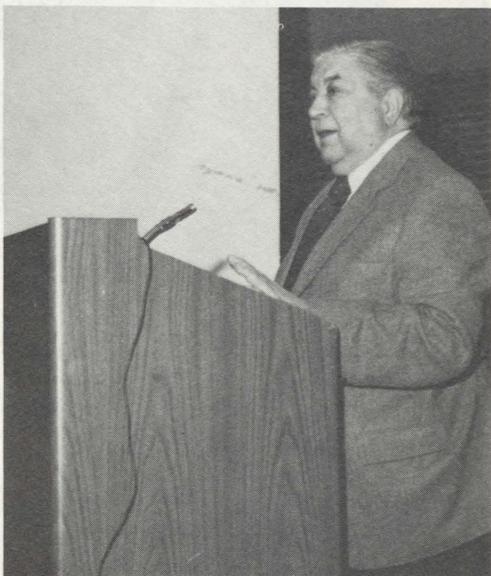


**Scotty preparing equipment**

### **Advance Planning**

The course on Disease Prevention was presented on January 12, although planning actually began about nine months earlier. After an individual agrees to present a course at IU, the dates, subject matter and honorarium must be agreed upon (our own faculty members present their courses without benefit of honoraria). As soon as dates are confirmed, Sandy schedules a room. The next step is to obtain a course summary from the presenter which will be publicized in the IUSD Continuing Education Bulletin, which is mailed in August to all members of the Indiana Dental Association (about 3,000 people). In the case of the Disease Prevention course, information in the Bulletin was followed up with a flyer sent out in early December, reminding potential applicants of all courses coming up in January and February.

Applications began arriving a month ahead of the course date. The C.E. director and course presenters determined that they would need 20 paying enrollees in order to present the course (all IUSD faculty members and students may attend most courses free of charge). By



**Dr. Derry introduces a speaker**

early January a sufficient number of applications had been received. About ten days before the course Sandy wrote to each applicant, informing them of the course location and time of registration. She also included a campus map. Other preliminary tasks that Sandy took care of included the following:

- decided on a luncheon menu after conferring with the Union's Catering Department.
- ordered all audio-visual equipment requested by Dr. Miller.
- ran off and assisted in assembling the course handbook, which had been typed by Ms. Kay Rajkos, secretary in Oral Microbiology.
- ordered writing supplies.
- prepared a class roster and name tags.
- waited for the last-minute requests that she long ago learned to expect with each course. This time the requests were easy: one extra person decided the day before the course that

he would like to attend and one registrant needed an extension cord for the hot pad she brought to lean on due to a back injury.

The registration period prior to the beginning of each course can be hectic. "There are so many things that can go wrong," Dr. Derry says. "Applicants from outside our time zone will often show up an hour early or an hour late. The temperature in some lecture halls can be a real headache, either too hot or too cold — or, trickier still, sometimes the audience will complain that they are too cold while the speaker is complaining that he's too warm!" Slide projectors will jam, coffee pots can break down.

#### **"Guarding Breakfast"**

"And when you're presenting a course at an airport hotel," Sandy says, "where several conventions may be going on and conventioners are roaming the halls,



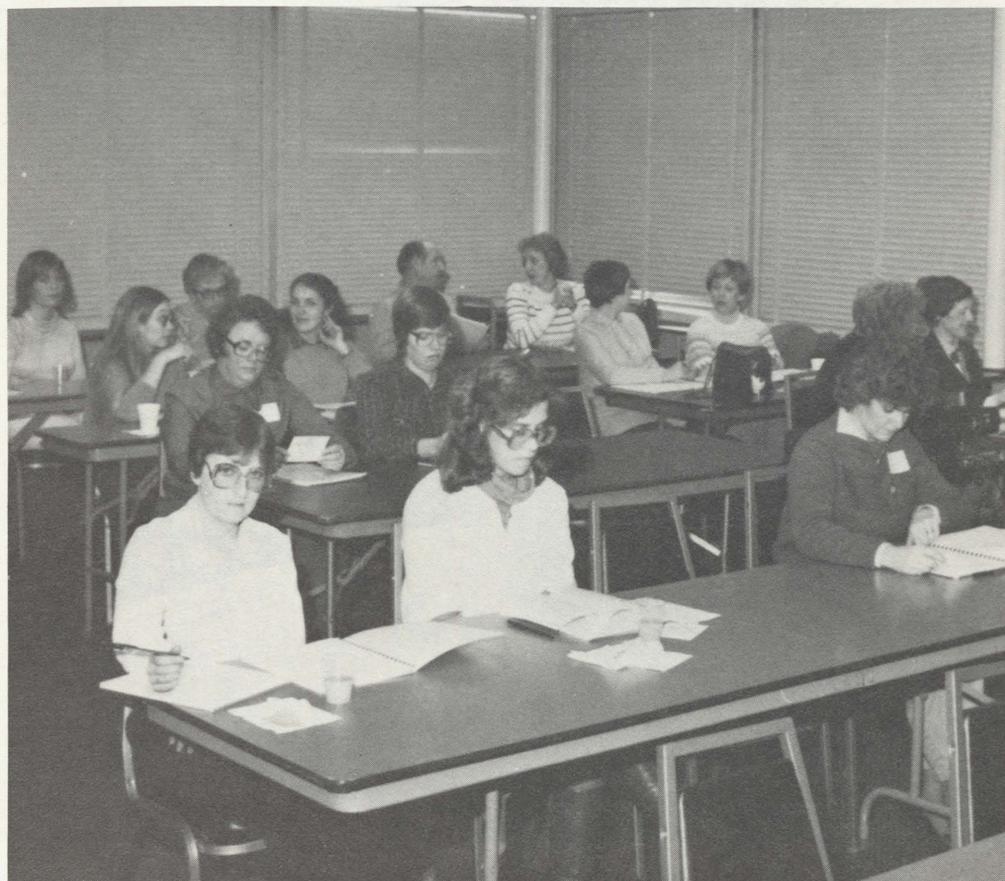
Ms. Sandy Manion and Dr. Robert H. Derry greeting registrants



**Ms. Mary Walton at her post**



**Dr. Chris H. Miller chats with registrants**



**A continuing education class**



Attractive booklets tell the story . . .



... of varied offerings in Continuing Education.

you learn the necessity of guarding the continental breakfast table!"

For courses with a large number of registrants, such as Dr. William G. Shafer's "Oral Pathology," offered this past Fall with 200 dental assistants and hygienists attending, even the simplest maneuver becomes difficult. Sandy laughs: "You should try getting 200 women back out of the ladies' room when break time is over!" Neither Sandy nor Dr. Derry will soon forget the time they were presenting a course in the Bahamas and a partition wall came crashing down in the middle of the continental breakfast. According to Dr. Derry, "The key to doing this job well is to always expect the unexpected."

One problem that concerns Dr. Derry is the cancellation of courses. "Our goal is to present each course that we list in our Bulletin. But whether or not we are able to do that depends solely on the number of paying registrants. Therefore it is very important that we know at least two weeks prior to a course everyone who wishes to attend. If we don't have enough registrants by then (whose fees will be used to cover the honorarium, luncheon, etc.), we must cancel the course. We always welcome people up to the last minute, but if more of them would sign up earlier, more courses could be presented as planned."

Since Dr. Derry became director of Continuing Education in 1968, about 15,000 registrants have been served, with an average of 35 courses presented each year. Fall and Spring are the most popular times of the year for course participation. Some courses, both large and small, have become very popular and usually close within a few weeks after they are announced in the Bulletin: Dr. Timothy J. O'Leary's "Advanced Periodontics — A Participation Course," Dr. Shafer's "Oral Pathology" (offered in alternate years to the dentists and dental auxiliaries) and Ms. Roberta Hilderbrand's "Basic Cardiac Life Support" are

courses in such demand and, with the cooperation of these fine instructors, will continue to be offered annually.

### New Courses

"We try to offer some new courses each year as well," Dr. Derry says. "This year we are trying a correspondence course, 'The Nuts and Bolts of Primary Preventive Dentistry for Controlling Plaque Diseases,' taught by Dr. Arden Christen, in cooperation with the Indiana Dental Association and the University of Texas Dental School. We are also cosponsoring with the Indiana Academy of General Dentistry a series of programs called AGD Mastership: Concept '80, which allow participants to earn AGD credit over a four-year period."

One of the more unusual courses offered a few years ago by Dr. John Diamond, a New York psychiatrist, on stress reduction required the participants to march around the parking lot to reduce tension.

How do course participants feel about our continuing education program? During break time at Dr. Miller's Disease Prevention course, following a slide series that graphically illustrated how easily a patient's saliva can be transmitted throughout the dental office by careless hands, a first-time participant, Ms. Becky Whetstone, said she was impressed by



Sandy dealing with paperwork as the author looks on

the course and found it very much worth attending. "I'm not taking this course because I have to — I enrolled simply as a self-help idea to better inform myself in my job as a dental assistant at the Oral Health Research Institute. I've learned a lot today and am really encouraged to enroll in other courses."

Comments were also solicited from registrants during a hands-on course on "The Challenge of Esthetics" presented by Dr. John R. Risch, associate professor of Complete Denture, and Mr. Gary Campbell of Dentsply International. Dr. Nels Ewoldsen (DDS '78), a private practitioner in Cloverdale who is on the staff of the Indiana State Farm at Putnamville, is very active in continuing education. He says he enjoys the hands-on courses the best and wishes there were more available.

Dr. Charles R. Hutton (DDS '78) who practices in Winamac is another frequent participant in continuing education. He says that, compared to other universities, Indiana prices its courses very reasonably. "I *would* like to see more new subject matter covered at IU, such as I.V. Sedations." When asked why he attends courses so often, when Indiana's C.E. system remains purely voluntary for dental practitioners, he says: "It seems

like the most efficient way of avoiding narrow-mindedness in my profession. I enroll in courses because I enjoy them and they are usually worthwhile."

Two dental assistants, Ms. Mary Hein and Ms. Valerie Cornett, attending the Esthetics course as first-time participants, were also pleased with what the course had to offer them.

Dr. Derry welcomes course ideas and suggestions from everyone and feels confident about the future of continuing education at Indiana University School of Dentistry. "The support we have received from the dentists and auxiliaries in this state has been tremendous. Also, the support from out-of-state registrants has been excellent, with sometimes as many as 17 states being represented at one course. We plan to continue to do everything we can to provide interesting courses of high caliber that meet the needs of the dental health team."

### **Dr. Musselman Named To AMA Advisory Unit**

Dr. Robert J. Musselman (D.D.S., 1964, and M.S.D., 1968) has been appointed to the American Medical Association's Advisory Committee for the AMA project entitled "Health Policy Agenda for the American People." Dr. Musselman, who is Chairman of Pedodontics at Louisiana State University, is also President of the American Academy of Pedodontics.

### **Dr. Phillips Honored**

During the Annual Meeting of the American Dental Association in Las Vegas, Dr. Ralph W. Phillips, Associate Dean for Research at the Indiana University School of Dentistry, received an Award from the Academy of International Dental Studies. This recognition is extended "to an international dental professional who, in the opinion of the Board, has made a major contribution to the profession through excellence and dedication in international research."



**Dr. S. Miles Standish and registrant group**

# Animal Dentistry: Endodontics On Large Carnivores

*George Willis, Assistant Professor  
of Dental Practice Administration*

Linus, resident lion of the Lafayette Zoo, provided my first experience in large animal dentistry. Dr. Dave Avolt, who is a friend of mine and veterinarian at the Zoo, contacted me about the possibility of doing a root canal on the fractured maxillary canine of a fourteen-year-old male lion. After consulting Dr. Carl Newton, acting chairman of the Endodontic Department at the School of Dentistry, and Dr. Scott McDonald, veterinarian of the Brookfield Zoo in Chicago, I felt I had some good ideas on how to perform endodontics on a lion.

Dr. Avolt and I chose a date and decided it would be best to perform the treatment at the large animal clinic of the Purdue School of Veterinary Medicine. As I arrived at the Zoo early that morning with my assembled equipment and looked in on Linus in his cage, I could see the probable cause of the fractured canine — Linus the lion had a bowling ball as his toy! He would pick up the entire ball in his mouth and carry it around. No doubt he had at one time gotten his canine caught in one of the finger holes.

The initial anesthesia was achieved by distracting the lion with a broom and then injecting him in the flank with a syringe on a long pole. As you can imagine, Linus did not particularly enjoy this and did quite a bit of roaring and charging around his cage. When the anesthetic took effect, he lay on the floor of his cage with his eyes open, not stirring. Dr. Avolt shaved a spot on his leg and inserted an I.V. Six people then helped pull the 400-pound lion onto a 4' by 8' sheet of plywood and carried him on this makeshift stretcher to the Zoo's van. It was at

this point that I noticed Dr. Avolt had a large pistol hanging from his belt.

We then drove from the Zoo, which is located in Columbia Park in Lafayette, to the large animal clinic of the Purdue Veterinary School. Linus was transferred to the large animal radiology room which is equipped to make radiographs of animals such as horses and cows. He was then intubated and kept on inhalation anesthesia. The examination revealed that Linus had also fractured both of his lower canines.

## Special Arrangements

Since I was going to need radiographs throughout the procedure, we did all of the work on the large animal radiology table with Linus lying on his side. His mouth was propped open from canine to canine with a large plastic tube. We worked on alternate sides of the mouth by rolling the lion over and changing the mouth prop.

A major problem was selecting instrumentation that would be appropriate for the unusual length and width of the canals. I used files from size 10 through 140 and soldered them to varying sizes of orthodontic wire to increase the length to 150 mm. In order to fill such a large canal, I decided to use a zinc oxide and eugenol paste with barium sulfate and CMCP added. I injected it into the prepared canals with a precision endodontic syringe through a 3½-inch spinal needle.

After the endodontic treatment was completed on all three canines, I noticed that the upper canine's fracture extended below the gingival and bone level. To correct this, a flap was reflected and bone was removed to the apical level of

the fracture. I prepared the largest Class V resin restoration I have ever done (about one inch by two inches) to help restore contour to the tooth. After the restoration was finished, approximately one inch of gingiva was trimmed and sutured into place. Linus was then transported back to the Zoo and began growling just as he was being placed back into his cage. By the way, the bowling ball had been removed in order to help prevent further dental problems.

After this first experience of mine with animal dentistry, another friend, Dr.

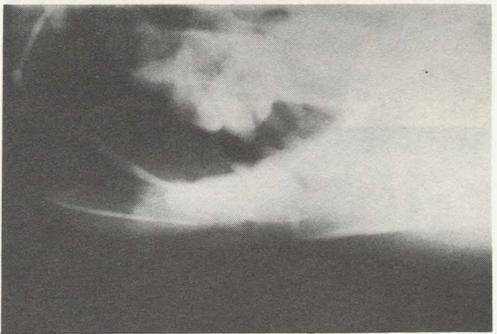
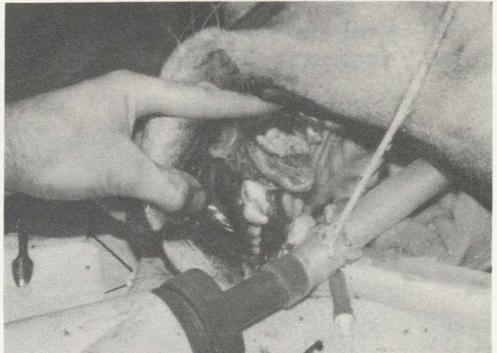
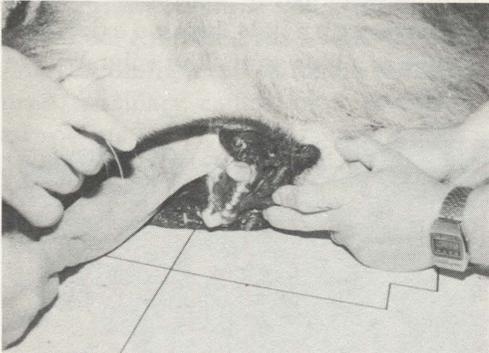
Charles Stewart, a graduate student in Oral Diagnosis/Oral Medicine at the Dental School, contacted me about the possibility of doing some endodontics at the Louisville Zoo. His friend, Dr. Bill Foster, a veterinarian at that zoo, had a Siberian tiger (Sergei) and a female lion (Katie) in need of root canals.

### "Blow Gun Anesthesia"

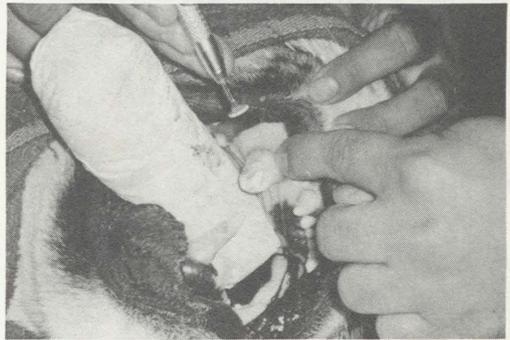
Dr. Foster had a somewhat different method of initiating anesthesia. Instead of a syringe on a pole, he used a dart-like syringe in a blow gun. The animals were



Patient and Operating Crew



**Root Canal Therapy and Flap Reflection**



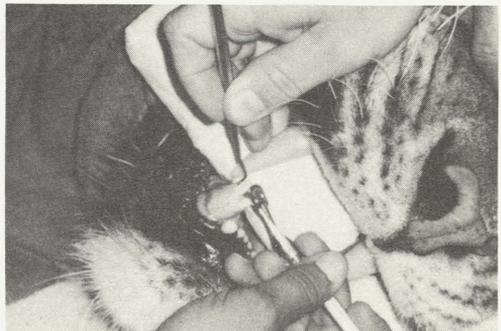
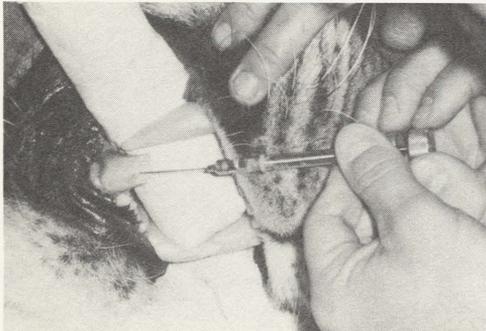
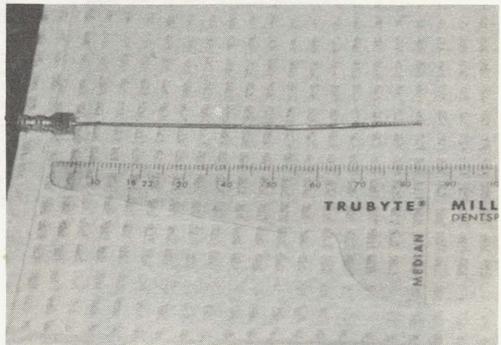
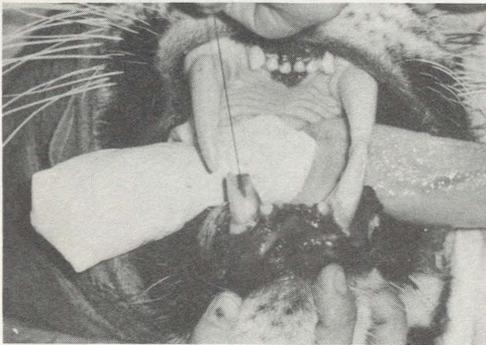
Treating the Lioness

then brought to the veterinary compound at the Zoo. Since he did not intubate the animals, we had a much shorter working time. The same instrumentation and procedure I had used on Linus were used on both the lower canine of the tiger and the upper canine of the lion. The canines of cats as well as dogs have no apical foramen, which means that the canal ends in a delta. File lengths are therefore relatively easy to establish since the file just stops at the end of the canal. The lengths were typically be-

tween 80 and 90 mm. The access openings were filled with amalgam.

The procedure on both animals went very smoothly. The only tense moments occurred when the tiger, due to the amount of anesthesia given, would go into a seizure on the table! The first time this happened, I was working on the access opening to the canine when I saw his tongue move. Thinking he was starting to come out of the anesthesia, I backed

*(continued on page 90)*



### Now It's the Tiger's Turn

# Indiana's Howard Raper: Man Of Many Firsts in Dentistry

*Jack D. Carr, Professor of Dental Radiology*

The late Dr. Howard Riley Raper, one of the great pioneers of dentistry, often expounded his philosophy to faculty members of the Indiana University School of Dentistry who visited him at his home in Albuquerque during the last several years of his life. He also carried on a steady and lively correspondence with these friends and colleagues on current topics in dental radiology, preventive dentistry, dental health education, professional responsibility, and many other areas of concern in our profession.

Dr. Raper's views on these subjects and others have been reported in earlier issues of the Alumni Bulletin (Spring, 1971 and Spring, 1975). However, a wealth of additional material resides in his professional library and correspondence files, now in their permanent home in the Raper Room at the Indiana University School of Dentistry. This meticulous man kept not only all of his correspondence but even receipts for the hardware used in some of his special projects, such as framing the pictures of Dr. Horace Wells and Dr. W.T.G. Morton, whom he credited with the discovery of general anesthesia. His book entitled *Man Against Pain* is a good illustration of the lengths he would go to in researching any subject he set out to cover.

Dr. Myron Kasle, Chairman of the Dental Radiology Department, Indiana University School of Dentistry, and Mrs. Helen Campbell, Librarian Emeritus at the School, have spent much time sorting through the volume of material that Dr. Raper left to Indiana University School of Dentistry. A small part of this material was covered in an article that appeared in the Academy of the History of Dentistry Bulletin (Oct. 1981, Vol 29 #2) concern-

ing the correspondence between Dr. C. Edmund Kells of New Orleans and Dr. Raper. This particular portion of correspondence represents only a fraction of what Dr. Raper left for us to study. Material from his file cabinets undoubtedly will lead to several additional articles for publication in our Alumni Bulletin that should be most interesting because the material covers so many facets of the progress and the problems of dentistry as this sage observer saw them. Dr. Raper not only wrote much about radiology but he also published extensively in the areas of preventive dentistry, professional ethics, state board procedures, public relations, and various policies of the American Dental Association, including some that he took issue with.

## Achievements Listed

Dr. Raper may have learned something from the frustrations that Dr. Kells experienced when he tried to establish the fact that he had been the first dentist in America to make an intraoral radiograph of a living patient. At any rate,

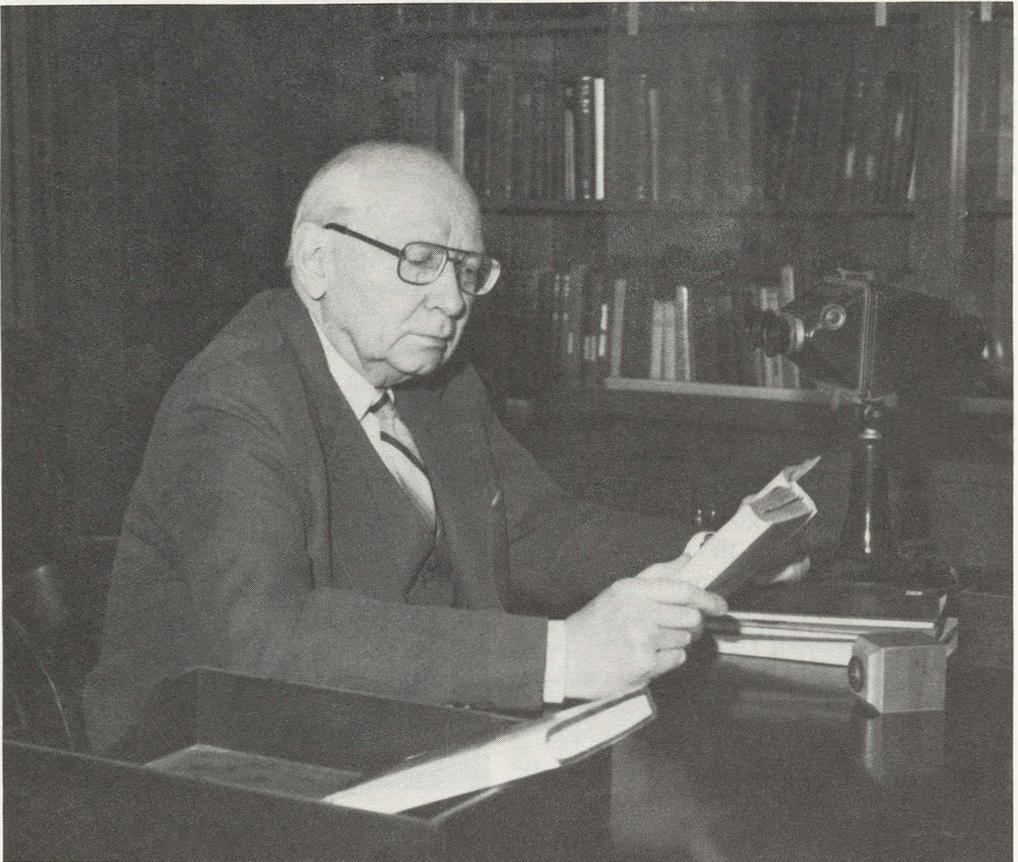


Dean Ralph E. McDonald (right) and Dr. Myron J. Kasle, Chairman of Dental Radiology, inspect a Raper Angle Meter, one of Dr. Howard Raper's numerous inventions.

a few years before his death in 1978, Dr. Raper decided to list some areas in which he thought he had been the first, and to validate his claim. From a historian's standpoint it is always dangerous to make a statement that one is the first; however, Dr. Raper was able to substantiate most of his claims. One of these firsts, for which the dental profession should be ever grateful, grew out of the fact that he became so dedicated to dental x-ray that our School, then the Indiana Dental College, became the first to offer such a course for dental students. He persisted in this effort to the extent of getting dental radiology accepted as a required course for all dental schools. In those times it took a no-surrender person such as Howard Raper to get the Dental Faculty Association to accept such a proposal.

The following is Dr. Raper's list of "firsts" that he himself assembled:

1. First to clearly understand the absolute necessity of x-ray examination to the science and art of dental diagnosis—and to do something innovative about it.
2. First to set up facilities for convenient routine daily use of x-ray equipment in a college clinic.
3. First to give a full-semester series of lectures on x-ray technique and diagnosis: a course calculated to actually teach the subject.
4. First to urge the *National Institute of Dental Pedagogics* to make teaching of the subject of radiodontia a required course in all accredited schools. (Dr. Raper coined the word *radiodontia*).



Dr. Maynard K. Hine in a moment of browsing in the Raper Room.

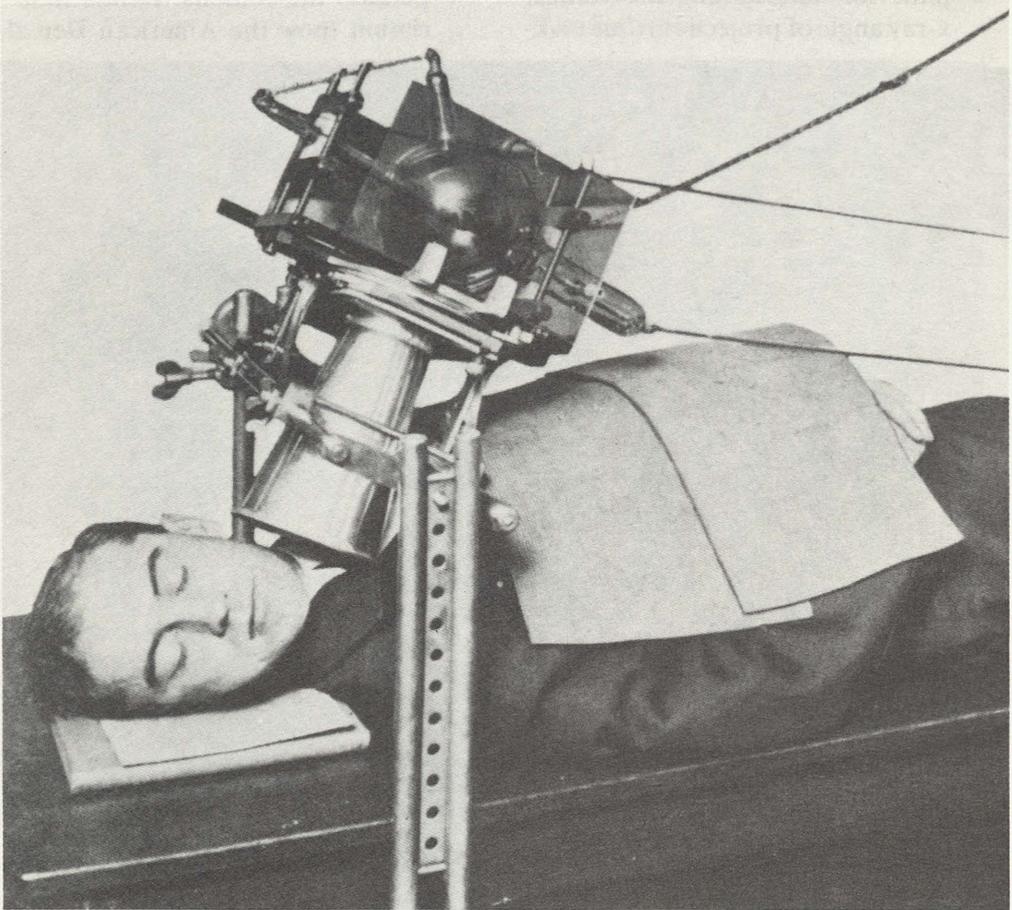
5. Author of *Elementary and Dental Radiography*, first comprehensive textbook on the subject. This text first ran serially in the dental magazine, *Dental Items of Interest*, starting in 1911, and was republished in book form in 1913. It lists and discusses 64 "Uses of the Radiograph in Dentistry." (The second edition, published in 1917, lists and discusses 41 *Mistakes in Radiographic Interpretation*.)
6. In collaboration with Dr. Clarence Simpson, first to systematize the technic for making complete ("full-mouth") dental x-ray examinations.
7. In collaboration with Dr. Simpson, first to accept mathematical discipline for determining the vertical x-ray angle of projection, thus making extreme error almost impossible. In short, one of the two originators of the *Mathematical Angulation Technic*.
8. Although a budding specialist himself, he was among the first to admit that general dental practitioners would find it impractical to refer all patients in need of examination to an x-ray specialist. (In a paper appearing in *Oral Hygiene*, June, 1913, he wrote: "If I were a young man just starting into the practice of dentistry, I would buy an x-ray outfit if I had to do without a casting machine and vulcanizer to pay for it.")
9. First (or at least among the first) to petition the National Dental Association (now the American Dental



In this photograph from Dr. Howard Raper's first textbook, Dr. I. Lester Furnas is demonstrating proper film position.

Association) to break silence and “advertise” a health message to the people of the United States. Specifically, to adopt and publicize some such slogans as: YOU MUSTN'T LET YOUR TEETH ACHE: ASK YOUR DENTIST WHY or NEVER LET YOUR TEETH ACHE: ASK YOUR DENTIST WHY. (See Proceedings of the Board of Trustees for 1918 or 1919, published in the *Journal of the National Dental Association*.)

10. First to make a thorough study of the possibilities of stereoscopic radiography as applied to dental diagnosis, and to dismiss the technique as impractical and even treacherous.
11. First to publicize the truism that the most common characteristic of all disease is tissue damage and destruction.
12. First to promote the idea that dental decay (caries) is a *disease*, and NOT “just a hole in a tooth.” (It is now almost universally accepted as a fact that caries *is* a disease, thanks mainly to the advertising sponsored by manufacturers of tooth pastes.)
13. First to offer as a new motivational aim in the care and preservation of the tooth enamel, the goal of preventing toothache: specifically, the prevention of pulpitis, pulp necrosis, osteitis and osteoclasia.



This photo from Dr. Raper's text shows the author demonstrating a position for lateral jaw radiographs. Note the rubberized chest protector to guard against electric shock from high voltage wires.

14. First to recommend x-ray examination as a means of diagnosing incipient proximal caries.
15. First to develop the interproximal x-ray examination by inventing the bitewing film packet, thus giving to dentists an economically and technically practical method of making periodic x-ray examinations to insure early diagnosis of caries and periodontal disease.
16. Author of *Electro-Radiographic Diagnosis*, 1921, first textbook on the electric test for pulp vitality.
17. Author of *Clinical Preventive Dentistry, Based on a New Type of X-ray Examination* (1926), first textbook on what has been called "bite-wing dentistry."
18. Author of *How To Prevent Toothache*, first pamphlet on a dental subject to reach a circulation of nearly four million copies.
19. Author of the popular book, *Man Against Pain*, first book dealing with the discovery of anesthesia to be widely accepted as the definitive work on the subject. (Dr. Raper gives no one man credit for the discovery. He gives credit to both Wells and Morton.)
20. First to attempt to *teach* the art of consultation with the dental patient. The word "teach" is emphasized to set it apart from simply approving or recommending the advisability of consultation. (For samples of teaching efforts, see *Dental Survey* Feb. 1951, March 1951, Jan. 1952, Oct. 1959, May 1961, and June 1961.)
21. In collaboration with Dr. J. G. Manser, first in the United States to report the use of sulfanilimide (administered internally, not used locally) in a case of acute cellulitis following tooth extraction. (*Dental Digest*, Sept. 1937.)
22. In collaboration with Dr. J. G. Manser, first to report on the "Removal of Brown Stain from Fluorine Mottled Teeth" by the acid method, and to submit convincing photographic evidence of the satisfactory results obtained. (*Dental Digest*, Sept. 1941.)
23. First to make teaching models (and photographs) showing the "steps" in the technique of filling teeth in conformity with the basic principle that filling is a treatment for disease—not merely a process of plugging up a hole.
24. First to design a new, improved, streamlined, self-adjusting, non-tipping easy-grip BITEWING. (Rejected by Eastman Kodak).

### Early Life

We hope that somewhere in this great volume of material that Howard Raper left for us we will find a little more about his early life, in addition to further details on this list of accomplishments. At the moment we know little more than that he was born on October 7, 1886, in Chillicothe, Ohio, the seventh child born to the Rapers. His father was a newspaper editor and all of his brothers and sisters became active in newspaper work. When Professor Paul Barton interviewed Dr. Raper for an article published in the *Bulletin of the Indiana Dental Alumni Association* (Spring, 1971), Dr. Raper indicated that there had always been a great deal of talk in his boyhood home about politics and politicians and what they were doing. As an editor, Howard's father was keenly interested in what was right for the public and this undoubtedly influenced his son to be interested not only in what the dental profession could do for him but in what the dental profession should do for the public.

Howard once told his mother that he was going to quit grade school, whereupon she informed him that he would have to go to work if he did. He got a job in a shoe manufacturing company but

lasted only 10 days. He went back to school and later got a part-time job with a local dentist, sweeping out the office, mixing plaster, and so forth. This evidently created such an interest in the profession that he entered dental school. One must remember that at this particular time, if one had a high school diploma, which at that time usually was a three-year course, he could qualify for dental school. There is some evidence that he attended high school in Indianapolis but we have no information as to why he came to Indianapolis and whether he was graduated from high school.

At that time many schools, Indiana Dental College included, would accept a student if he could pass an entrance examination, mainly including a test of ability to use the English language. Howard entered Indiana Dental College in 1903, and graduated from the College in 1906, with time out in 1905 for attendance at the Medical College of Ohio in Cincinnati. He was at the head of his dental class except for the last semester, when another student surpassed his grade point average by 2 points. After graduation Dr. Raper served as an intern in a state hospital in Northern Indiana. During the winter he practiced dentistry in Geneva, Indiana.

#### **A Capable Teacher**

Dr. Raper started his career in dental education in 1908, and apparently was a capable teacher from the start. He was involved in teaching Operative Dentistry Technique, Materia Medica and Therapeutics and ultimately Radiodontics. He was Superintendent of the clinic from 1913 to 1915 and "Junior Dean" from 1915 to 1917. Part of Dr. Raper's responsibilities included the teaching of endodontics, and when he attended a lecture on dental radiology by a Dr. Ream of Chicago, he quickly recognized the great advantage of using radiographs in root canal therapy. Dr. Ream also informed Dr. Raper that a

second hand x-ray unit was available at Chicago for \$200. The story has often been repeated that Dr. Raper went to the Dean of the Dental School, Dr. G. Edwin Hunt, and offered to have some of his salary deducted in order to pay for this piece of equipment, if Dr. Hunt would provide the space and time for him to use it. Dr. Hunt agreed to this proposition and the unit was purchased. To Dr. Raper's delight and surprise, the \$10 per month was never deducted from his \$100 a month salary. The equipment was installed in 1909, and in the following year Dr. Raper became the first to introduce a course in Dental Radiography into a dental curriculum.

Thus we can say that Howard Raper was one of the very first to understand the absolute necessity for x-ray examination in the science and art of dental diagnosis, and that he was also the first to set up a clinic for routine daily use of x-ray equipment in a dental school clinic. The tenacity of this man to follow through, once he was completely convinced about the worth of a project, is clearly illustrated in his pursuit of the goal of making the advantages of dental x-ray available to dental patients everywhere. Although he was rebuffed by many dental educators, he continued his crusade to get the course in dental radiography accepted in all dental schools. Almost 50 years later, Dr. Leroy Ennis, himself an authority on radiology, praised Dr. Raper for his ultimate success in getting this course universally accepted.

#### **Aided by Dr. Furnas**

So far we have not been able to find any background in education that Howard Raper might have availed himself of in the area of physics, mathematics, or electricity that would have smoothed the way for his investigations in x-ray technology. However, he undoubtedly was capable either of self-education or of availing himself of advice from experts in those fields. He was encouraged in his

research by Dean Hunt, and he was also assisted and encouraged by Dr. I. Lester Furnas, a 1910 graduate of Indiana Dental College who became a faculty member in the same year. These two junior faculty members undoubtedly stimulated each other and remained friends for all the years to come. In his letters to Lester, Howard often reminded him of the great assistance he had been to him in the area of photography, to start with, and added that he had not emphasized enough how much he appreciated the great assistance that Dr. Furnas had given him during the period of his early activity in dental radiography.

In 1911 Dr. Raper wrote a series of articles for the publication *Dental Items of Interest* which were combined and published in 1913 as a book entitled *Elementary and Dental Radiography*. This textbook not only outlined a scholarly approach to the teaching of dental radiology but also was very well organized in regard to diagrams, illustrations and photographs. It was certainly superior to most texts of the time. Many of the photographs show Dr. Raper's good friend and associate, Lester Furnas, posing as the patient for a demonstration of proper film positioning.

### **Risks Noted**

It is difficult for the young dentist of today to realize how hard it was to take a dental radiograph in those early days. There was no such thing as a dental x-ray machine. One had to improvise a stand to hold the x-ray tube. The x-ray transformer was not in the head of the machine as it is today, but in a cabinet, and the high voltage circuit included a bare wire which, if it was touched during the exposure, would give the operator a shock of 40,000 to 50,000 volts. There were many accidents and some fatalities from contact with these high voltage lines. The early tubes were gas-filled and very difficult to manage. As the tube became heated, the spark gap and obvi-

ously the KVP was altered. Time of exposure often was altered as the heat of the tube increased. On occasion, exposure time was strictly a guess, often being determined by the hum of the x-ray tube, with the result that the operator adjusted the time in accordance with his understanding of the characteristics of that particular tube. In the beginning, some of the so-called film really consisted of a glass plate coated with a silver emulsion which was wrapped in black paper and then wrapped in the rubber dam so that each of these became an individual plate for the exposure of a particular portion of the mouth. Even when film was used to take the place of the glass coated with emulsion, it too was cut, wrapped in black paper, sealed with wax and often wrapped in a rubber dam.

By 1913 commercial hand-wrapped films were available from Eastman Kodak and by 1921 a machine-made packet was introduced. The film of this particular time was extremely slow; even as late as the 1940s posterior exposures were often 12 to 18 seconds in length.

During this early period it was not routine to take a full-mouth series of films; it was more common to make a radiograph of the most suspected area of pathology or of a root canal filling or abscessed area. In this period around 1913, with all of the problems of producing a good radiograph with the balky x-ray tubes, along with the inconvenience of not having pre-wrapped films for the dentist, it is quite understandable that the deans of some schools felt that teaching dental x-ray was beyond their proper responsibility. However, Dr. Raper was convinced that this aid to the dentist was so important that it should be taught, and that the dentists and the patients would profit tremendously by having a course available to the general dentists.

### **Challenges Met**

The challenge to Howard Raper was great, and he met it by inventing equip-

ment and various means of making the use of x-ray simpler for the general dentist. Some of these inventions were quite a life-saver to him in that they brought in some limited income for him after he was forced into retirement by illness. Dr. Raper's techniques for making radiographs, his ideas on positions for making them, and the results he obtained were quite sophisticated for that time. He even went so far as to establish a private practice in the Hume Mansur Building in Indianapolis, which was the first specialty practice in dental radiography. A few years later (1925), Dr. Raper was to be responsible, along with the Eastman Kodak Company, for the introduction of the bitewing film packet.

During his early professional career as dental educator, Dr. Raper also found time to become active in organized dentistry and to win election as president of the Indianapolis District Dental Society. Through his activities in organized den-

tistry, he showed that he was interested not only in his profession, but also in the welfare of the public. He was especially insistent that the public be informed about the possibility of receiving good dental care. Dr. Maynard K. Hine's article "Get Right With Raper" (School of Dentistry Alumni Bulletin, Fall, 1975) illustrates the courage and the convictions of this hard-driving professional with regard to the importance of ethical behavior among dentists. Thus, scarcely a decade after his graduation from Indiana Dental College, Howard Raper had clearly established a tenacious personality dedicated to the advancement of dental education, dental practice, and dental education for the public. It is difficult to imagine the tremendous energy and zeal that this man exhibited.

Our series on Dr. Raper will be continued in a future Alumni Bulletin as we follow the career of one of our most distinguished alumni.



**Dr. Jack D. Carr exploring voluminous files in the Howard R. Raper Room at the School of Dentistry.**

# Dental Auxiliary Education: The Fort Wayne Story

*Peter T. Zonakis\**

On a typical week-day morning during the academic year, about 100 students enrolled in Dental Auxiliary Education programs make their way to the bustling 400-acre campus of Indiana University-Purdue University at Fort Wayne for another round of classes, laboratories and clinics. Joining these DAE students are other young men and women pursuing advanced education in such fields as Science, Business, Education, Engineering, and Public Affairs.

Total student enrollment at the IU-PU Fort Wayne Campus is 10,358 and the teaching faculty numbers 307 full-time and 274 part-time. This cooperative educational effort by Indiana and Purdue Universities affords an excellent opportunity for residents of Northeastern Indiana to enroll in many diverse University programs close to home. In the case of the DAE students, fully accredited degree and/or certificate curricula are available in Dental Hygiene, Dental Laboratory Technology, and Dental Assisting.

This article reports on the Dental Auxiliary Education programs in operation on the Fort Wayne campus and also takes a look at other aspects of the IU-PU Fort Wayne story.

## **Program Origins**

The Dental Hygiene Program was started in September 1964 as a pilot program, with a class of eight students, when former Dean Maynard K. Hine initiated the statewide system for Dental Auxiliary

Education. This concept, under Dean Ralph E. McDonald, has expanded to three other campuses in addition to Indianapolis, and the result is a very successful statewide system for Dental Auxiliary Education. The first dental faculty at Fort Wayne included a part-time director, Dr. Ralph G. Schimmele (now Associate Dean for Program Development and Extramural Programs) and a part-time supervisor, Mrs. Gloria Huxoll. Dental Auxiliary Education was upgraded to a Division in 1965 when a program of Dental Assisting opened with 15 students in the inaugural class and with Miss Bernice Rummel as first supervisor of the program. The Dental Assisting and Dental Hygiene Programs were initially housed in Kettler Hall, the first building constructed on the Fort Wayne campus.

In 1972 the programs were moved into a new building, Neff Hall, and John Winings was appointed as first Supervisor of the recently initiated Dental Laboratory Technology Program, the first such program in the system. Over the years, although the program has remained in Neff Hall, the facilities have been modernized and expanded. The most recent expansion was completed in July 1982. The present Dental Auxiliary Education facilities include a modern 10-chair dental hygiene clinic (which also houses a sterilization room, a dark room, three X-ray rooms, and radiology work area for automatic processing), a dental assisting laboratory which accommodates 24 students, and the dental technology laboratory with 25 student stations. Two small 10-station laboratories were recently opened for use as a porcelain laboratory for dental technology and

\*Dr. Zonakis, a 1961 graduate of the Dental School, is Assistant Professor and Director of Dental Auxiliary Education at Fort Wayne.

an all-purpose laboratory for all three programs.

Students also receive very valuable instruction through extramural experiences in area dental offices, clinics, hospitals, nursing homes, and dental laboratories. The response of the dental community to the programs has been very favorable. Their cooperation and acceptance of students have made an important contribution to the programs.

### **Administrative Structure**

The Division of Dental Auxiliary Education is a part of the Professional Studies Unit, with the Director of DAE reporting directly to Dr. Edward A. Nicholson, Vice Chancellor for Academic Affairs, and Dean McDonald. A close relationship exists between Dental Auxiliary Education at Fort Wayne and the IU School of Dentistry through the Dean and the DAE Executive Council, which includes the DAE Directors from throughout the system.

Since Purdue University has been designated as fiscal agent for the campus at Fort Wayne, the budgetary requests are a part of that University's budget process. The budget review begins with a discussion among the three program supervisors and the Director of Dental Auxiliary Education. The budget moves on through discussions with the Vice Chancellor for Academic Affairs and becomes a part of the total campus budget request which is presented to Chancellor Joseph P. Giusti for his approval. The request is then forwarded to Purdue University and incorporated into their request to the State Legislature. Upon receipt of the State appropriation, a final budget is prepared and the Chancellor makes a formal presentation to the Presidents of both Indiana University and Purdue University. Each President then submits the budget to his Board of Trustees for approval to take effect for the fiscal year beginning July 1.

### **Dedicated Faculty**

Dental Auxiliary Education has an experienced and dedicated faculty. The relationship with Indiana University School of Dentistry allows the dental faculty to participate in a planned faculty development program. The annual teaching conference of the Dental School, held each September, is attended by all dental educators in the Indiana University system. Also, many programs are given at the School of Dentistry during the year which faculty members are encouraged to attend.

The present full-time faculty and staff in Dental Auxiliary Education include: Peter T. Zonakis, D.D.S., Director and Assistant Professor; Charles A. Champion, C.D.T., M.S., Assistant Professor and Supervisor of Dental Laboratory Technology; Jacqueline N. Heine, L.D.H., M.S., Assistant Professor; Gloria H. Huxoll, L.D.H., B.S., Assistant Professor and Supervisor of Dental Hygiene; Rosemary M. Kovara, C.D.A., M.S., Assistant Professor and Supervisor of Dental Assisting; Albino M. Perez, Jr., C.D.T., B.S., Visiting Instructor; Connie J. Poston, L.D.H., C.D.A., M.S., Assistant Professor; Colleen K. Smith, C.D.A., R.N., A.S., Instructor; Ann J. Rudig, Secretary; and Edna P. Williams, Administrative Assistant.

The education and training of students by our full-time and part-time faculty from the local dental community are greatly enhanced by the inclusion of guest lecturers from the School of Dentistry. Through this interchange of faculty representing the academic and practical realms, the philosophy of providing quality educational and technical opportunities to all students enables them to aspire to the highest level of personal and professional development.

### **Student Selection**

Each of the three programs has a separate student selection committee, composed of the Director, Program Supervi-

sor, Faculty, and private practitioners from the dental community. Generally, decisions pertaining to student selection are based on SAT scores, dental aptitude scores, college GPA, high school GPA and personal interview. Class size is limited to twenty students.

### Curriculum

The Dental Hygiene Program is a three-year associate of science degree program composed of one year (30

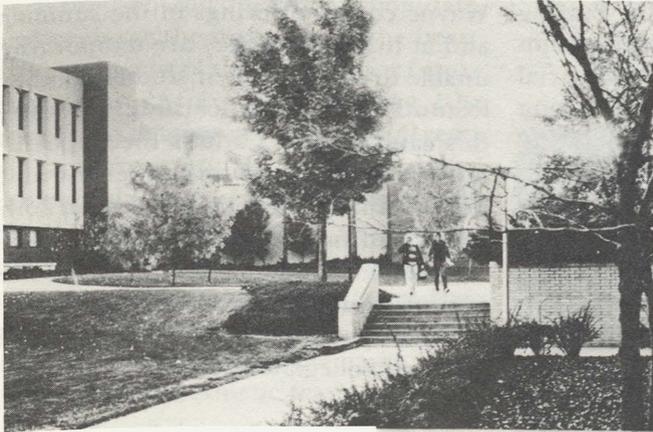
credit hours) of prerequisite general education and two years in the Dental Hygiene Program.

The Dental Laboratory Technology Program is a 64 credit hour, two-year curriculum leading to an associate of science degree.

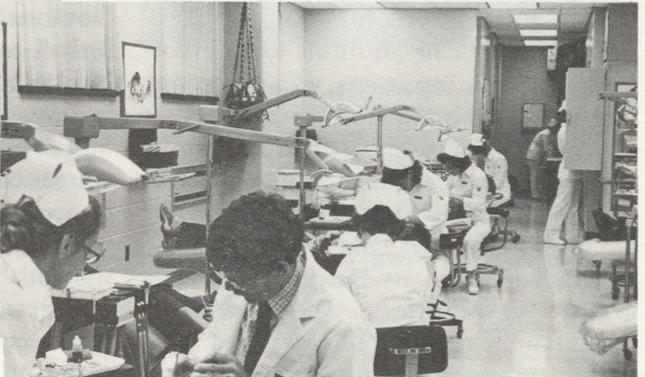
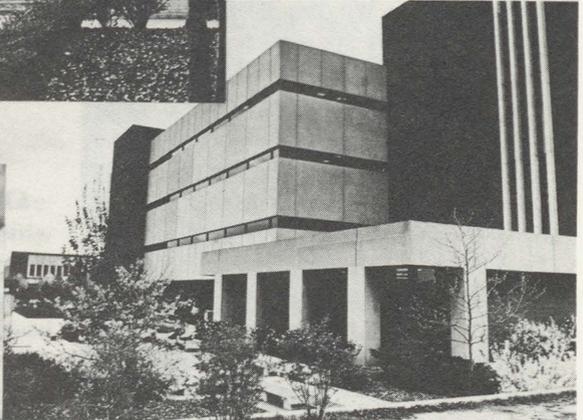
Dental Assisting is a one-year certificate program.

The degrees and certification are awarded by Indiana University School of Dentistry.

The curriculum for each program is



Scenes from the Ft. Wayne campus



periodically reviewed, evaluated, and revised as necessary by the Dean and the Directors through the Dental Auxiliary Education Executive Council of Indiana University School of Dentistry, to meet the requirements of various State and Federal agencies and the needs of the profession, as expressed by the American Dental Association.

### **Background of the Campus**

Indiana University began offering credit courses through its Extension Division at Fort Wayne in 1917. Purdue University established its image within the community by offering industrial training courses at Fort Wayne during World War II. Immediately following the war Purdue began to offer credit courses. Prior to 1964 when the two Universities moved into one facility, both institutions operated out of separate facilities located side-by-side in downtown Fort Wayne. Today, the 400-acre campus has six educational buildings: Alfred W. Kettler Hall and Floyd R. Neff Hall, which house general classroom, laboratory, and office facilities; the Walter E. Helmke Memorial Library, housing the library and the learning resource center; the Walter W. Walb Memorial Union, which provides recreation, dining, and meeting facilities; a classroom-medical building which serves as a general classroom, laboratory, and office facility, in addition to housing the Medical Education Program. A sixth building, the Athletic Center housing the health, physical education, and recreation programs in addition to intercollegiate athletic programs, was completed in 1981. The campus also includes two downtown facilities, for Continuing Education Studies and the Department of Fine Arts, and the Biological Research Station at Crooked Lake.

Indiana University-Purdue University at Fort Wayne offers a wide variety of educational courses and programs. Students can complete all of the require-

ments for numerous Indiana University and Purdue University certificate programs at this campus. In addition to complete certificate and degree programs (including some masters' degree programs), both Universities offer courses which make it possible for a student to begin work toward a degree at Fort Wayne that can be completed on other campuses of IU or Purdue University.

Students from other colleges and universities also take advantage of Fort Wayne course offerings in the summer and at times when they are temporarily unable to continue their studies at other institutions of higher learning. Likewise, this campus offers adults the opportunity to study for personal benefit and career enhancement by enrolling in both credit and non-credit courses. In addition to the academic offerings of the campus, students have the opportunity to participate in numerous intramural and intercollegiate sports.

### **The Mastodons March**

Other than those athletic programs which are open to all students, women's varsity teams play basketball, tennis, and volleyball; men's varsity teams play baseball, basketball, soccer, tennis, and volleyball. The men's basketball team participates in Division II NCAA competition and regularly plays teams such as Bowling Green, U. of Alaska, and Northern Kentucky. The men's volleyball team participates in Division I NCAA competition and regularly plays Indiana University Bloomington, Ohio State, Michigan, and Michigan State. The soccer team includes Notre Dame on its schedule.

All sports programs have nicknames, such as the Boilermakers of Purdue, the Hoosiers of I.U., the Buckeyes of Ohio State, etc. And so it is with the sports program at IU-PU-FW.

The various teams that represent this campus are known as the Mastodons or, more commonly, "Tuskers." The name grew out of the discovery in the middle 1960s of a mastodon skeleton which had been buried at the local Boy Scout Council reservation. A member of the then budding dental department, active in Scouting, was contacted for assistance in removing, preserving, and displaying the skeleton, if possible. The dental department subsequently solicited the aid of the Bloomington campus, and the experts they sent did unearth, carbon-date, and preserve the mandible of the beast, leaving the rest of the skeleton for future excavation. After carbon-dating (the animal was determined to be 18000 years old) and preserving the mandible, dental radiographs were made and the mandible appropriately displayed in a case on campus. Needless to say, the artifact became an item of much local interest, particularly by the news media. From that episode came the idea of the name "Mastodons" for the athletic teams.

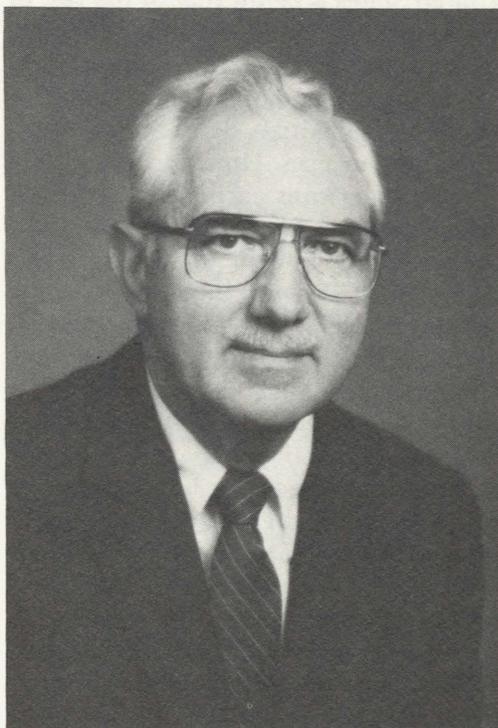
### The University and the City

Today Indiana University-Purdue University at Fort Wayne continues the long history of service established by Indiana University and Purdue University by providing a wide range of quality educational programs and cultural events to the citizens of Fort Wayne, Allen County, and Northeastern Indiana. These include plays and musical productions presented by the Department of Fine Arts. Two such productions were awarded first place by the American College Theatre Festival and presented at the Kennedy Center, Washington, D.C.

With a population of approximately 200,000, Fort Wayne is the largest city in Northeastern Indiana. It has a diverse employment base, and several businesses and industries have located their national and international headquarters here.

Fort Wayne has six post-secondary education institutions, the largest of which is Indiana University-Purdue University at Fort Wayne.

In order to meet the needs of the people it serves, Indiana University-Purdue University at Fort Wayne, like its neighbors in business and industry, must be innovative and responsive to change. The University strives to meet these needs by having realistic and attainable goals and objectives.



Dean Ralph E. McDonald has been named Editor of the *Journal of Pediatric Dentistry*, official publication of the American Academy of Pedodontics and the American Board of Pedodontics. Dean McDonald is a former president of the Academy and a former chairman of the Board. He has also served as president of the American Society of Dentistry for Children. Dean McDonald has published two texts, "Pedodontics" and "Dentistry for the Child and Adolescent" (now in its fourth edition, with Dr. David Avery as co-author) and has been co-editor for five editions of "Current Therapy in Dentistry."

# The Hepatitis B Vaccine: Background and Foreground

*Charles J. Palenik and Chris H. Miller\**

Infections caused by hepatitis B virus, HBV, pose a serious worldwide health problem. An estimated 200 million individuals have become chronic carriers of this disease. This increasing human pool insures a reservoir of infectious viral particles. HBV is endemic in many areas of South America, Africa and South East Asia. Fortunately, the rate of HBV in the United States is below that of the rest of the world,<sup>1,2</sup> with an estimated 200,000 persons, primarily 15-30 years of age, becoming infected each year.<sup>3</sup> Only 25% of these individuals demonstrate jaundiced skin or eyes. However, more than 10,000 Americans each year become ill enough to require hospitalization, and the mortality rate in the US is 1-2%. About 6-10% of new infections become chronic carriers, and it is estimated that there are 800,000 chronic carriers in the United States. Such carriers can suffer cirrhosis of the liver (4,000 deaths/year) and chronic active hepatitis. Chronic carriers also appear to be at increased risk as to the development of primary hepatocellular carcinoma.<sup>1,4</sup> HBV affects the American economy (lost work time, hospitalization and treatment) with an estimated loss of \$750,000,000/year.<sup>1</sup>

Dental practitioners, because of their frequent and intimate contact with human oropharyngeal secretions, have experienced above-normal rates of HBV infection. The ultimate aim in the prevention and control of HBV is the development of an active immunization system which is both safe and effective. Such a preventive modality now exists.

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Its inception, clinical testing and present formulation make an interesting and important topic for all dental health providers.

## Virology Review

The hepatitis B virus is a complex, 42 nm DNA virus which can not be grown in tissue cultures. However, much is known concerning the structure and epidemiology of HBV. The intact, infectious virus appears as a double-shelled entity, commonly referred to as a Dane particle. The outer surface layer contains an antigenic lipoprotein material called hepatitis B surface antigen, HBsAg. The hepatitis B virus genome is immediately surrounded and encompassed by a layer of core antigen material, HBcAg. Both of these viral antigens can elicit an immune response in humans. HBV tends to be very inefficient in the production of its surface component layers, especially in the case of the surface antigen. Therefore, massive amounts of unassembled HBsAg are released into the bloodstream. The DNA of HBV has a unique structure. It is circular and double-stranded, but one strand is incomplete. This strand is 10-50% "shorter" than the complete member. This uneven DNA strand relationship is a trait of Hepada-type viruses. The complete DNA molecule is relatively small (only 3200 base pairs), with the genetic information which codes for HBsAg and HBcAg being contained only in the longer strand. Also present inside the core center is an enzyme, a DNA-dependent, DNA polymerase. Its exact biological function is not yet known. However, some data indicate that the enzyme may help the viral DNA

to incorporate into/with host's liver cells DNA. This action could cause an acute HBV infection to become chronic.<sup>5-7</sup>

### The Infection Process

The hepatitis B virus most commonly enters the human body by parenteral routes, but transmission can also occur by direct contact or orally. "Needle-stick" accidents involving syringe needles or sharp, pointed dental instruments pose a definite health hazard. It appears that HBV can not cross intact skin or mucous membranes. However, only 50% of individuals with acute HBV report a probable perenteral incident. Therefore, even a small surface defect could offer a route for transmission.<sup>5,8</sup> Blood and blood products must be considered the primary source of HBV particles. However, the virus has been detected in menstrual fluids, semen and saliva of infected individuals, especially carriers. This could help explain an above-average rate of infection among sexual partners of persons with HBV.

HBV is a systemic disease which primarily involves the liver. Common symptoms include fever, gastrointestinal distress and anorexia. An icteric appearance is present in only one-third of cases. In fact, the most common response to an HBV exposure is a subclinical, anicteric infection. Onset of symptoms (classically referred to as serum hepatitis, but now more properly termed long-incubation hepatitis) is often protracted, sometimes up to 185 days. This delay hampers the identification of the source of infection. The length of incubation seems to be related to the size of the viral inoculation. The larger the initial dose of virus, the shorter will be the resultant incubation period.

Individuals with asymptomatic infections normally develop high and long-lived antibody titers to HBsAg. This results in long-term immunity. Because HBsAg is rarely detected in such cases, the only evidence of infection would be the presence of anti-HBs in the serum.

Clinically symptomatic cases present a different serological picture. HBsAg can be detected in the serum immediately prior to the onset of jaundice and/or other signs and symptoms. Much of this material is not associated with complete viruses. These incomplete HBsAg particles are often found in the serum in incredibly huge amounts (as many as  $10^{13}$  particles/ml). Also present are measurable levels of DNA polymerase, viral DNA and antibodies to the core antigen, anti-HBc. Early serologic samples would also indicate the presence of a third viral antigen, namely the hepatitis B e antigen (HBeAg). Its location in the viral particle is still being investigated; however, it is probably associated with the core antigen. HBeAg's structural position is not as important at present as its clinical/epidemiologic significance. The detection of HBeAg in a serum sample is considered a reliable serologic marker for the presence of elevated levels of virus, thus indicating a high level of infectivity. Serum levels of alanine aminotransferase are also present early. HBcAg can not be detected as a free circulating antigen. All early antigens are present before symptoms appear. Amounts maximize at the onset of clinical symptoms and can persist (in decreasing amounts) for 8-10 weeks. Although free HBcAg can not be serologically measured, antibodies to HBcAg (anti-HBc) do appear before symptoms develop. Levels of anti-HBc rise quickly and persist for 6-18 months. All individuals infected with HBV develop measurable amounts of anti-HBc. Therefore, anti-HBc is an accurate and reliable serologic marker for both ongoing and previous HBV infections.<sup>5,9,10</sup>

Fewer than 3% of adults with acute, symptomatic HBV infections develop fulminant and ultimately fatal hepatitis. These individuals commonly suffer encephalopathy, with early signs mimicking several forms of aberrant behavior, as well as sleeping problems and per-

sonality changes. Later, victims become lethargic and fall into comas. The liver exhibits severe deterioration and eventual failure.

### **Chronic Carriers**

About 10% of adults with acute HBV infection become chronic carriers. The total carrier rate in the USA is about 0.3% of the population. HBsAg levels in these persons rise during the development of symptoms; however, instead of gradually diminishing, they persist for months or even years. This secretion probably continues for life. HBeAg and anti-HBc are also present in extremely high amounts. Symptoms in chronic carriers are generally mild. In fact, many individuals have no symptoms. Acute hepatitis usually lasts 1-6 months, but carriers continue to have elevated levels of HBV serologic markers. In some cases clinical symptoms also persist, causing a variety of complications such as immune complex disorders, cirrhosis and liver failure. Fortunately, most chronic carriers do not suffer severe problems and thus regain normal hepatic function. However, such persons can remain infectious for a lifetime.

The most feared consequence of a chronic HBV infection is the development of primary hepatocellular carcinoma, PHC, an often fatal form of liver cancer which is one of the three most common types of cancer worldwide.<sup>5,11,12</sup> A study conducted in Taiwan (an endemic area for HBV) indicated that PHC developed de novo 273 times more frequently in HBV carriers than in non-carriers of matched age and sex.<sup>13</sup>

### **Pathway to Protection**

The understanding of HBV and the vaccine is truly a triumph for basic science; although the disease has been scientifically investigated for the last century, the first concrete step in the characterization of HBV (and eventually the HBV vaccine) was taken in 1961. Interestingly, this discovery was not the prod-

uct of research from workers in virology/infectious disease laboratories, but from geneticists. The development of advanced biochemical laboratory techniques (many of them the fruits of Federal grants) greatly facilitated HBV research.

In the pivotal year of 1961, Baruch Blumberg was studying blood components present in multiple transfusion patients and attempting to correlate genetic factors with antibody development. In one hemophilic patient he detected antibodies that strongly reacted with a serum sample obtained from an Australian aborigine. He called the serum protein the Australian antigen. Blumberg found the antigen to be present in most populations, but especially high levels were found in natives of Southeast Asia and parts of Africa. Levels were low in North America and Northern Europe. It had been thought that hepatitis B was a genetically related disability, rather than an infectious process. However, Blumberg commonly found the Australian antigen in Down's-syndrome patients residing in large institutions. Paradoxically, the same type of individuals living at home exhibited antigen levels approximating those of the general population.<sup>5,14,15</sup> This suggested an infectious etiology.

In 1967 one of Blumberg's assistants, Barbara Werner, exhibited symptoms of a mild case of hepatitis B. She had been working for several years in the laboratory where she routinely handled and analysed human blood samples. After becoming ill, she tested her own blood. The amino transaminase levels were elevated and her blood contained the Australian antigen. Blumberg and Irving Millman seized upon this information and soon correlated Australian antigen (HBsAg) particles in the blood with the clinical symptoms. Later the antigen was determined to be extra coat particles. The complete viral particle was not identified until 1970 by Dane.<sup>16</sup> Blum-

berg's discovery was instrumental in his being awarded a Nobel Prize in 1976.

### Advances Cited

Three major advances in basic science were important in development of the HBV vaccine. First came perfection of the radioimmunoassay (RIA) by Berson and Yalow, which provided a method for detecting both HBsAg and anti-HBs. This technique is much more sensitive and accurate than the immunodiffusion method used during the early HBV studies. In addition, RIA can be performed quickly, thus permitting routine testing of blood samples for large populations. A second major advance was the development of the zonal centrifuge by Anderson. Large volumes of human serum can be continuously fed into the high-speed instrument without shutting down, so that significant amounts of HBsAg can be collected. The third of these scientific advances was more a discovery than a development. In 1972 chimpanzees that were inoculated with HBsAg-positive human serum later exhibited mild clinical symptoms. Serologic testing indicated that the chimpanzees had HBV markers similar to those in infected humans. Therefore, a much sought after animal model had been found.<sup>14</sup>

In spite of the emergence of an animal model, HBV still could not be grown in tissue cultures. Blumberg and Millman indicated that HBsAg could be collected from humans and after purification used as a vaccine. Krugman<sup>14,17</sup> quickly proved the feasibility of such a proposal, namely a protective human-origin, active immunization vehicle. Krugman boiled for one minute water-diluted HBsAg-containing serum samples. It was felt that such a treatment would inactivate the virus, but would not affect immunogenicity. This assumption later was proven inaccurate, in the sense that just heating would not totally inactivate the virus. Krugman then injected this mate-

rial into children entering a New York mental institution. The crude vaccine provided protection to about 70% of the inoculated children. This bold experiment was not well received by the medical community. Krugman defended himself by indicating that almost all the inmates contracted HBV within a few years in the hospital; thus his actions were at least partially positive. These results did enhance the interest of a large pharmaceutical company, Merck, Sharp & Dohme.<sup>14,17</sup>

Maurice Hilleman was the director of Merck's virus and cell biology research laboratory. His job was to develop a marketable vaccine. Any such product would have to be both safe and effective, as well as clinically practical. Plasma from asymptomatic chronic HBsAg-positive carriers would be collected. Such material can contain as many as 1 trillion HBsAg particles per ml. Serum proteins were precipitated by increasing concentrations of ammonium sulfate. Special centrifugation techniques could separate out large amounts of HBsAg. Analysis indicated that all materials present were virus-specific; in other words they had been coded by a viral genome. No attached human-origin materials could be detected. This greatly reduced the chances of harmful immunologic reactions. Any potential residual live viral particles were inactivated by a three-step process using a pepsin digestion, a urea treatment and a dilution into a formaldehyde solution. Hilleman's group combined their efforts with those of Robert Gerety and Edward Tabor at the FDA to produce an inactivation procedure in which viral survival was less than one in 10 quadrillion. Animal tests in marmosets and chimpanzees indicated that the vaccine did not produce hepatitis B, hepatitis A or non-A, non-B hepatitis. The manufacturing procedure had been established and the safety considerations met; now it was time to begin human trials.<sup>14,16,18</sup>

### Toward Human Efficacy

Human safety trials began in 1975. Eventually over 4000 individuals were vaccinated in safety tests. No participant exhibited acute or subclinical hepatitis B, nor did any participant suffer any serious adverse reactions.<sup>16</sup> In the same period Wolf Szmunes was conducting a study to detect HBsAg in the serum of blood donors. On the basis of this research he felt that efficacy studies conducted on groups from the general population would require tens of thousands of subjects, and he decided to use far fewer subjects from high risk groups. He selected homosexual men because of the high prevalence of hepatitis B among them and the cooperation of their support groups. Szmunes also knew that the vaccine had proven protective in very small studies of high risk groups, such as hospital staff members.<sup>14,16,19</sup>

In November of 1978 Szmunes initiated a placebo-controlled, randomized clinical trial in a high-risk group of 1083 male homosexuals. Test or placebo injections consisted of three 40ug intramuscular injections: one given immediately after the participant passed a serologic screening, a second injection one month later, and a third given six months after the first. All subjects were serologically monitored for two years. About a third of the vaccine group developed antibodies to HBsAg (anti-HBs) within 30 days of their first injection. By the time the three injections had been given, the antibody response rate had increased to 96%. Only 4% of the vaccinated individuals did not produce anti-HBs. Another 5% had a somewhat weak response. All vaccine recipients who developed adequate amounts of anti-HBs (92%) were protected. Of the vaccine group, 3.4% developed hepatitis, usually in the first few months of the study. In these individuals the disease was probably contracted immediately before vaccination or before completion of the three injection scheme. The inci-

dence of adverse side effects was low. About 16% of the vaccine group complained of short-lived sore/red arm near the injection site. Fewer than 3.0% had a low-grade fever.<sup>20,21</sup>

Recently, a second large scale HBV vaccine study was completed. A smaller dose, 20 ug, had been shown to be as effective as the 40 ug used by Szmunes.<sup>22,23</sup> This smaller vaccine dose was used in a randomized, double-blind, vaccine and placebo trial. A total of 1042 homosexual men were inoculated in venereal disease clinics in five large cities. Results indicated that the vaccine was safe, immunogenic and effective. Side effects were minimal. Efficacy for all vaccine recipients was 81.9% This lower rate was relatable to the use of the lower dose.<sup>24</sup>

A number of conclusions can be made from the human studies to date. First, the vaccine is safe. By the end of 1982 nearly 20,000 individuals had received the full set of three injections. Immediate side effects have been minimal and transitory. The purification and inactivation process used to prepare the vaccine inactivates all known animal viruses. Each vaccine lot is tested in primate colonies. No known cases of hepatitis B, non-A, non-B hepatitis or acquired immune deficiency syndrome (AIDS) have resulted from vaccination. No long-term reactions have been reported. About 6,000 individuals received their vaccinations between 1975 and 1981. Their health status is still being monitored for the occurrence of low-incidence side effects.<sup>24,25</sup> Secondly, the HBV vaccine has proved to be immunogenic. In field trials on the American-manufactured vaccine (after all three doses), 80-100% of recipients experienced a seroconversion to anti-HBs. A vaccine developed in France has exhibited similar clinical results.<sup>24,26</sup> A third conclusion is that the efficacy of the vaccine is directly relatable to its immunogenicity. Protection against HBV is complete for persons who develop an-

tibodies after vaccination, but before exposure. The duration of protection and the need for booster injections have not yet been determined.<sup>24,26</sup> These clinical data were sufficient to convince the FDA to grant a license for marketing to Merck, Sharp and Dohme for their vaccine, HEPTAVAX-B in November of 1981.

### **Vaccination and Other Concerns**

Primary adult vaccination consists of a series of three intramuscular injections, costing \$100-125. It is available in hospitals and clinics and your private physician can order it for you. Each dose has 20 ug of HBsAg in 1 ml of fluid. A second injection is given a month after the first, and the third dose is administered at six months. Smaller doses given over the same time period are given to children under the age of 10. Hemodialysis and other immunosuppressed patients must be given the 40 ug doses. Spacing between injections can be longer, but optimal protection generally occurs after the third injection. The hepatitis B vaccine does not seem to interfere with other simultaneously administered vaccines. The need for booster shots has not yet been determined. Side effects should be limited to localized redness or soreness. The effect of the vaccine on developing fetuses is not known. Vaccination of pregnant or nursing women should be conducted on a case-by-case basis.<sup>27</sup>

The vaccine does not help or hurt HBV chronic carriers.<sup>27</sup> Persons with acute or subclinical cases of HBV (thus having anti-HBsAg) do not need the vaccine. However, the administration of the vaccine will increase their anti-HBsAg levels. Passively acquired immunity by injections of hepatitis B immune globulin, HBIG, does not interfere with active vaccine. HBV carriers and those with antibodies from a previous infection do not need to be vaccinated. Any persons in doubt of their serologic status to HBV can be screened

before starting vaccination. This decision may or may not be cost-effective. Screening for HBV markers (HBsAg, anti-HBcAg and anti-BsAg) can cost \$15-30. The cost of screening must be compared to the expected prevalence of markers in a given group. Screening would be cost-effective in high risk groups (active homosexual males, mentally retarded institutionalized persons, and injectable drug offenders) where prevalence levels approach 20-25%. The choice about screening intermediate risk individuals (such as hospital staff members, dental personnel and medical laboratory workers) is less clearcut. The decision to screen would be influenced by a person's exposure rate to human blood and saliva and by the length of service in such a profession. Persons just entering a health-care profession would have HBV marker levels close to those of the general population. Serologic testing after vaccination is necessary only for dialysis patients or immunosuppressed individuals.

Revaccination of persons who did not respond to a primary series has proved disappointing. Only a third of these persons will respond to a second series of injections. Therefore, for healthy individuals, post-vaccination screening is not beneficial.<sup>23,24</sup> Individuals who are exposed to HBV before being vaccinated should immediately receive a HBIG injection (a costly proposition, about \$300/injection). As previously mentioned, the hepatitis B vaccine is not affected by (nor does it affect) the HBIG injection.

Dental practitioners are routinely exposed to their patients' blood and oropharyngeal secretions. Such materials can bear the HBV. Depending upon the nature of their practices, HBV prevalence rates for practitioners can vary from 2-7 times that of the general population. The American Dental Association's Council on Dental Therapeutics recently recommended the vaccine for immunization against HBV for all prac-

titioners with patient contact. The Council extended their vaccination recommendations to all dental students, auxiliaries, clinical research personnel and dental laboratory technicians.<sup>28</sup>

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#### CE Program Approved

Dr. Robert H. Derry, Director of Continuing Education at the Indiana University School of Dentistry, has been notified that the School has received formal approval from the American Dental Association's National Committee on Continuing Dental Education as a sponsor of continuing education programs. According to recently established procedures for evaluating sponsoring organizations, approval by the national committee indicates that an organization has the resources and ability to offer continuing dental education programs of acceptable quality.

# An Experiment in Job-Sharing In the Pedodontic Department\*

*Susan M. Crum, Recorder of the  
Graduate Dental Program*

Sharing is something that Elizabeth Hatcher and JoAnn Heasley are doing a lot of lately. When they became acquainted while riding in a car pool to their Dental School jobs, it never occurred to either that five years later their friendship would take an unusual turn. Today, in addition to being close friends and confidantes, they are sharing the responsibilities of child care and have also entered into a unique professional relationship called Job Sharing, an arrangement in which two people fulfill the duties of one full-time employee.

Last May, Elizabeth and JoAnn were officially hired as "secretary" to Dr. David Avery in the Department of Pedodontics — the first such arrangement at the Dental School and on the Medical Center campus. The idea for job sharing was originally Elizabeth's, who has been Dr. Avery's secretary for five years. With the birth of her child approaching, she found herself facing the prospect of giving up a job she enjoyed in order to reap the benefits of staying home to raise her baby. She recalled magazine articles on job sharing and wondered if such a program could work in her case. Elizabeth had in mind her good friend JoAnn Heasley as the ideal person to share with. JoAnn was working full-time in the Dean's Office and, although she liked her job very much, she found that working full-time and taking care of a small child (Erin, born July 13, 1981) was quite a balancing act. Thus she was very enthusiastic about the idea. The women agreed that, if given the oppor-

tunity to job-share, they would also share child care. Both live on the southside of Indianapolis, about five miles apart.

Dr. Avery was receptive. "It meant that I wouldn't have to lose Elizabeth, who had been an excellent secretary to me for several years. And I trusted Elizabeth's opinion of JoAnn's ability." He took the proposal to the School's administration, which worked with the IUPUI Personnel Department in devising a job plan for Elizabeth and JoAnn.

Meanwhile Paul Hatcher was born (February 26, 1982) and Elizabeth went on maternity leave. Finally, last Spring these two young women together became Dr. Avery's "secretary." Their job descriptions are identical and both must be able to perform all duties of the job. Both have 50% appointments, meaning that each works five days within each 10-day pay period. Usually one works three days of the first week and two days of the second, and then alternates with the other employee.

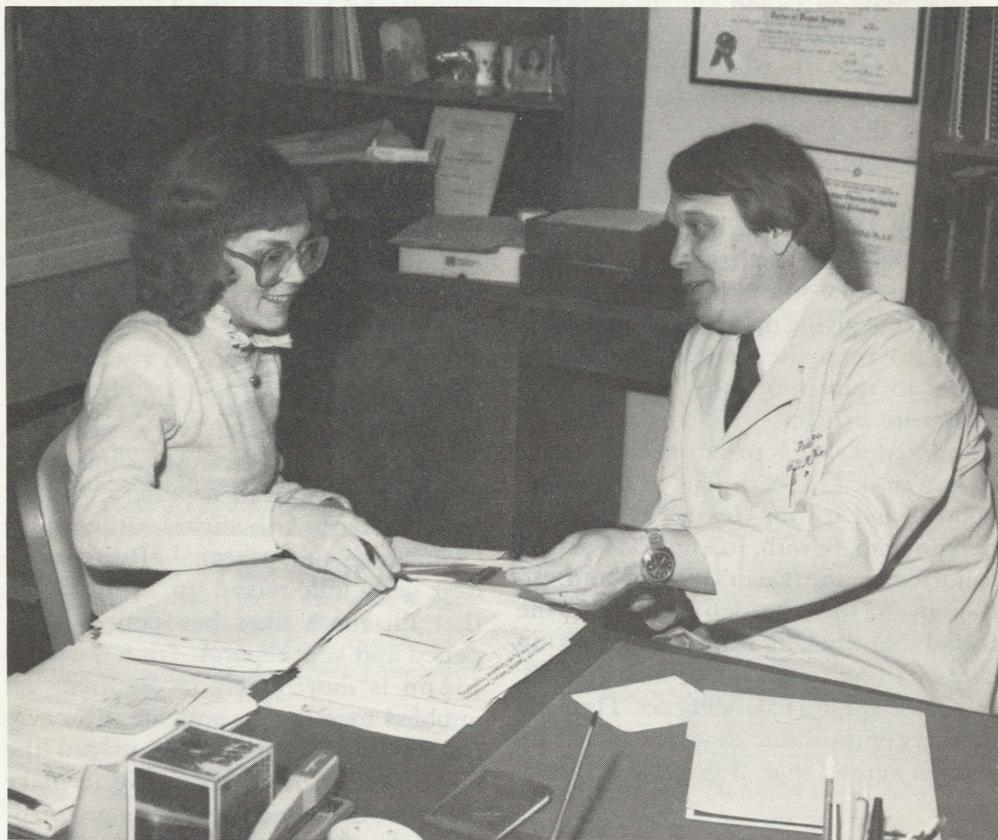
Asked how things are going, Elizabeth and JoAnn — and Dr. Avery — say "Extremely well!" Of course, some minor adjustments have been necessary. On the lighter side, JoAnn admits with a smile: "Sometimes our personal effects in the desk get a little mixed up." It turns out that Elizabeth likes her pencils sharpened and kept separate from the pens. JoAnn is more likely to let them get jumbled together — and she can never find where Elizabeth has placed the Liquid Paper. Also, they have to make sure that the nameplate sitting on top of the desk corresponds to the secretary sitting behind the desk.

\*This article is reprinted from the School of Dentistry Newsletter.

The key to their highly successful "intra-job" communication network is an on-going file they call "Notes to Us." Each woman logs information in it during the day and carries it home at night. The file changes hands on the evening of a "shift change" when the one who worked that day picks up her child from the one who spent the day tending Erin and Paul. They take this opportunity to discuss their notes.

Initially, job sharing was probably hardest on JoAnn, who had to learn the ropes of an unfamiliar job and find a comfortable place as the third member of a team that previously had done well with just two players. "As it turned out," JoAnn says, "everyone in the Pedodontics Department went out of their way to make me feel welcome. Now I feel very much a part of this department."

On the home front, Erin (17 months), and Paul (9 months) seem to be benefiting from one another's company. "Paul is crazy about Erin," Elizabeth says. "Both children have adapted well to our job-sharing schedule and they seem genuinely fond of each other." The program has two other strong supporters: Bruce Hatcher and Dave Heasley, the husbands. Although Bruce has cautioned Elizabeth that what really matters is the women's friendship and that job sharing should not be allowed to become more important than the friendship, Elizabeth and JoAnn seem to be on solid ground with their personal relationship. And they've learned to share just about everything. One recent morning Elizabeth was leaving Paul at JoAnn's house for the day. When Paul gave his mother an impromptu farewell gift — all down the



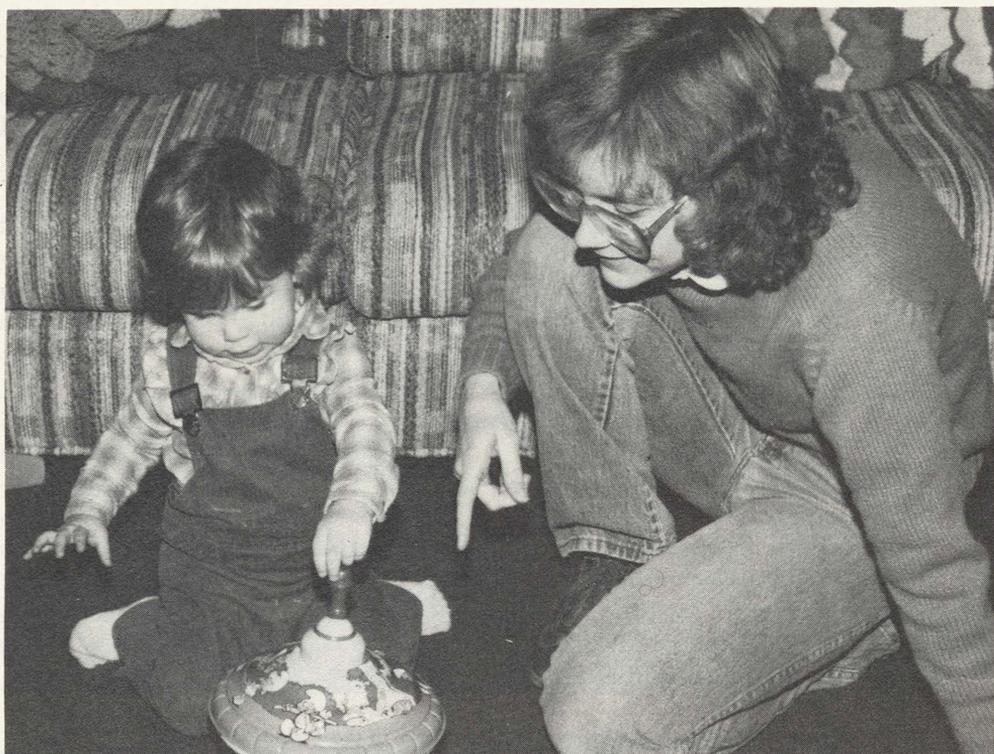
Elizabeth and Dr. Avery plan the day's agenda.



JoAnn relays a telephone message to Dr. Avery in the Pedodontics clinic.



A few minutes shared at the end of a busy day.



**Elizabeth gives JoAnn's daughter, Erin, a lesson in top-spinning.**



**JoAnn has the undivided attention of Elizabeth's son, Paul (for a few moments, at least).**

front of her work clothes — Elizabeth merely slipped into an outfit belonging to JoAnn and still made it to work on time!

As Dr. Avery says, though, "Job sharing is not for everyone. Elizabeth and JoAnn are special people, which has made job sharing and other aspects of their lives fall into place naturally." Likewise, the women involved agree that the arrangement wouldn't work for everyone, although they do feel that job sharing will become a practical alterna-

tive for employees at the Dental School within the next few years. Elizabeth says, "My work relationship with JoAnn has been much more than splitting a job 50/50. In the need for communication, it's been a lot like a marriage, with each partner willing to give more than 50% in order to make it work." According to JoAnn, "Both people must be conscientious workers who are able to rise above pettiness. They must share a common goal: to do the best job possible for their employer."



A lull in the action.

# Placement Services at IUSD

*Cathi L. Eagan and  
Bruce V. Mitchell\**

Placement services at the Indiana University School of Dentistry are available to any student or alumnus seeking to establish, or become associated with, a dental practice, but the individuals themselves must take the initiative. As early as pre-dental counseling, prospective dental students are encouraged to do some preliminary investigating and explore professional opportunities in an area of geographic preference. This may involve contacting dental acquaintances and/or dental supply houses in a preferred area to learn the dentist-patient ratio and other pertinent facts. However, for many persons, the chief source of information on career possibilities is the Dental School itself.

Located in the School of Dentistry Library is a placement folder which lists both in-state and out-of-state dental opportunities. A similar folder is available at the Indiana Dental Association Office in Indianapolis. The placement folder contains letters, advertisements, and newsletters describing excellent opportunities for motivated individuals who want to obtain a dental practice on either a sale, lease or associateship basis. It is not uncommon to find advertisements such as these:

"For rent in the Summer of 1983: 35-year-old Lake County dental practice and building with option to buy". . . .

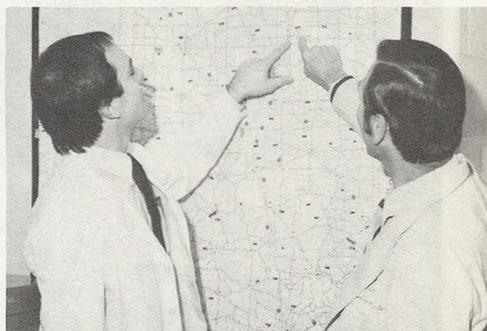
"Have been accepted to Endodontic graduate school and am offering a growing dental practice for sale or for 2 years' lease with the option to buy at the end of the two-year period". . . .

"Associateship wanted, leading to an

early partnership. Extremely busy practice in new office building". . . .

"Instruments and equipment 10-15 years old for 3 operatories are for sale by the family of a dentist who had to retire for health reasons."

While at times full financing must be obtained, many advertisements offer general practices for nominal cash outlay or say that financing is available for a substantial amount of the equity. The file also includes letters from private corporations which offer to help a beginning practice, and from various banking institutions. In addition, dental management consulting firms seek to aid clients in finding partners or associates for expanding dental practices, such as AEGIS, Inc., located in metropolitan areas of Utah. Pictures of office layouts, maps and other information concerning square footage, growth potential and general property data are given in most advertisements. Agencies such as Dental Centers of Indiana, Inc., which operates clinics called "Family Dental Centers", send newsletters encouraging dentists to join a customized program designed to fit needs and desires within the agency's



**Professor Bruce V. Mitchell (right) talks about dentist-population ratios with third year student Chip Rigsbee.**

\*Ms. Eagan is Coordinator of Records and Preprofessional Counseling. Mr. Mitchell is Assistant Professor of Dental Practice Management.

framework. Part-time openings are also listed, both for private practitioners who want someone to provide service in their absence, and for individuals wanting to participate in summer dental programs, such as the University of Colorado Health Sciences Center, which encourages eligible senior dental students to apply for assignments of providing dental care to agricultural migrant communities in rural Colorado.

Also within this placement folder is information on internships, residency programs and fellowships for the student interested in obtaining a degree beyond the D.D.S. Announcements listing objectives, stipend availability, application information and amount of time to be invested are given in each. An example of such was recently listed by the Children's Hospital of the Detroit Medical Center announcing the availability of two 24-month residencies in Pediatric Dentistry. This 2-year certificate program was to prepare the resident for certification for the American Board of Pedodontics. Also, Hillsborough County Dental Research Clinic in Tampa, Florida, published a notice of internship availability at their institution for the 1982-83 session. Branches of the Armed Forces have also sent material to educate the student on opportunities in dentistry within these organizations.

Another portion of this file is the Indiana Dental Association Placement Service Job Roster which lists "Positions Available" and "Positions Wanted" for dentists, dental hygienists, dental assistants and technicians. The roster is published monthly and is sent to any individual in the U.S. or abroad requesting to be put on the mailing list.

Students seeking information on career opportunities are also invited to discuss their goals with Professor Mitchell in the Department of Dental Practice Management. Until recently, he served as liaison between our School of Dentistry and

the National Health Professions Placement Network (NHPPN), based in Minneapolis. Unfortunately, funding problems have caused NHPPN to cease its operations, which had provided a matching service for use by organizations and individuals in dentistry and other health professions.

Periodicals such as the *Indiana Dental Association Journal* and the *Journal of the American Dental Association* in the IUSD Library carry classified advertisements concerning general or specialty practices for sale or lease, job opportunities for dentists and auxiliaries, an individual's availability for practice, the personal sale of used equipment, or advertisements concerning employment services. For example, one such service in North Carolina recently advertised: "Our dental support division offers a unique professional service designed to protect and continue your dental practice during extended vacations, hospitalizations, and disability."

Classified advertisements in the same issue included the following:

"Find a better way. Established practice and building priced for sale. No Medicaid. Beautiful upstate N.Y. community in Catskill Mountains. Skiing, hiking, hunting, fishing, and natural beauty".

(continued on page 75)



Ms. Egan discusses career options with interested listener.

## FOCUS ON SPECIALTY PRACTICES

# Faculty-Practitioners and Students React to Extramural Program

*Ralph G. Schimmele, Associate Dean  
for Program Development & Extramural Programs*

Approximately one year ago the Dental Student Extramural Program was expanded to include specialty practices. We believe that the reactions of new Faculty-Practitioners to the Program and those of the students who visited the offices of these Faculty members will be of interest to readers of the Alumni Bulletin. Five offices, including the program mainstay of general dentistry, one practice essentially limited to fixed and removable partial prosthodontics, and one specialty practice each in oral and maxillo-facial surgery, orthodontics and pedodontics, were contacted and asked to contribute to this report. Five students who had recently completed a portion of their extramural requirement in one of these offices were also asked to contribute.

Basically, three questions were asked of the practitioners:

- Your reason for joining the Program as a volunteer Faculty-Practitioner?
- Your reason for continuing with the Program?
- Your overall impression of the Program?

The students were not presented with specific questions concerning the program. They were merely encouraged to give their impressions of the extramural experience as they recalled its salient points.

We are sincerely grateful to the five Faculty-Practitioners and five students who, through their individual effort, made this report possible. Their cooperation, counsel, and support are

appreciated. We also wish to thank all of the volunteer Faculty-Practitioners who give so generously of their time and talents to student dentists, and we are proud to present the entire roster of Extramural Program Faculty-Practitioners in this issue of the Bulletin.

Comments from the practitioners and students follow.

**Charles Y. Coghlan, D.M.D.**  
**(University of Louisville, 1964); M.S.D.**  
**(Indiana University, 1968)**  
**Orthodontics**  
**857 Auto Mall Road**  
**Bloomington, IN 47401**  
**South Central Dental Society**  
**Joined Extramural Program in 1982**

In answer to your questions, regarding my interest, I can state that I was interested in the concept when it was first introduced. Looking back at my dental school days at the University of Louisville, I felt my dental education was



**Dr. Charles Y. Coghlan**

weakest in orthodontics and while I was a graduate student at I.U. (66-68) I received the impression from the undergraduates that they felt the same way. Since the graduate students sat in on their course with Dr. Burstone in the second year, I was familiar with the course content. His course was an excellent one, but I am sure most of the second year dental students were unable to put it to any practical use; as they did not truly comprehend many of the principles taught and, therefore, the principles were left unapplied. It was my hope that some of this material could be reintroduced at the final stages of their schooling, where it would be more relevant. I saw the extramural program as a means to do this.

Also, not to get on a soap box, I feel that every dentist has an obligation to his profession and to those entering it to repay in some small way the many men and women who had a part in placing that degree behind his/her own name. Truly we must all remain students and what better way of growing professionally than teaching another. Being able to see a student grasp a point, ask the proper question about a procedure or treatment, or discover something new is reason enough to continue in the program.

**John P. Atkinson**  
**Class of 1983**

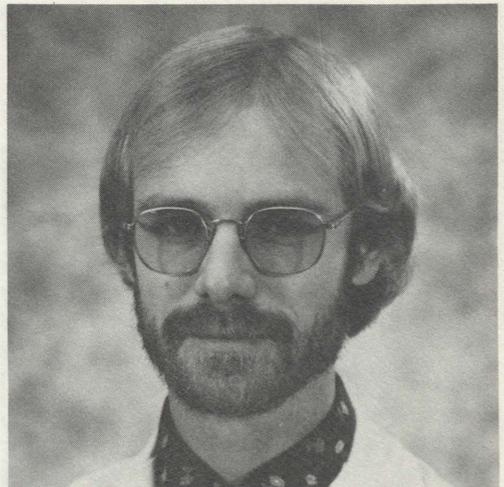
I feel fortunate that I had the opportunity to spend three weeks in Dr. Coghlan's office last summer. It was a very enlightening experience.

My reason for contacting Dr. Coghlan to inquire about the extramural experience he offered was that I liked the description he gave in the Directory of extramural experiences. He sounded very positive and I got the impression that he wanted participants to glean as much knowledge from the experience as possible. I thought this would be a great opportunity to learn more about orthodontics, a subject that isn't given

enough emphasis to undergraduate dental students at I.U.

When I met with Dr. Coghlan to discuss the extramural experience, he told me to pick up a pocket notebook. He said he would be more than happy to answer any questions I might have, but he might be too busy at times. He wanted me to write down my questions so I wouldn't forget them and we would sit down and discuss things at the end of the day. This turned out to be a wise suggestion. His office has seven chairs which are always occupied. He has a very busy practice and, I have to say, his auxiliaries are indispensable. I could give an account of all the things I was able to observe but that would probably take up half of this publication. So to be brief, I'd like to say that I had every opportunity for patient contact from diagnostic appointments through all phases of orthodontic treatment. I took impressions, fitted bands, fabricated various appliances and delivered various appliances. Patient contact was maximal.

Dr. Coghlan was very kind and instructive and, at times, I felt like I had my own private tutor. The experience was very beneficial to my education and I would highly recommend this opportunity to any student who desires more exposure to the field of orthodontics.



**John P. Atkinson**

**James E. Dumas, D.D.S.**  
**(Indiana University, 1964)**

**Oral and Maxillofacial Surgery**  
**3609 Lake Avenue**  
**Fort Wayne, IN 46805**

**Isaac Knapp Dental Society**  
**Joined Extramural Program in 1982**

On behalf of our group, I believe it is accurate for me to say that our reason for joining the program as teaching Faculty-Practitioners is threefold. First, we view this program as a way for us to strengthen our ties with the dental school and the University. Secondly, we have enjoyed working with the students. They are above average in interest, motivation, and general ability. Finally, in response to your first question, we believe it is very beneficial to have students see and participate in those types of patient treatment and care that they are unlikely to experience as undergraduates.

Your second question concerning our reason for wishing to continue with the program is really pretty simple; we have enjoyed those students who have come to our office. They have been interesting people to work with. We have benefited from student contact and hopefully the students have benefited from their association with us.

Finally, our impression of the program: very favorable.

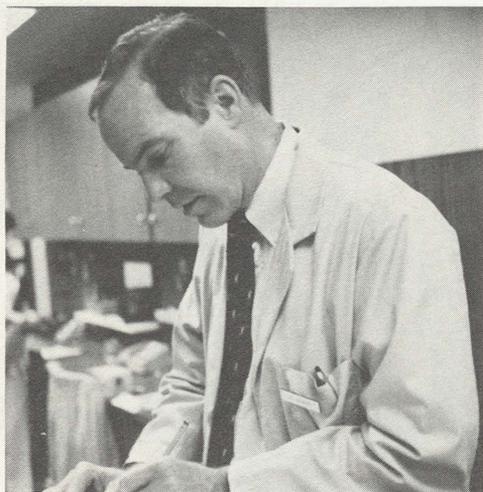
**Joyce A. Rockwell**  
**Class of 1985**

The Extramural Program at Indiana University School of Dentistry offers many options for dental students to gain first-hand experience observing dental procedures in various practitioners' offices. I chose to observe at the office of Drs. Dumas, Bojrab, Shambaugh, and Buehler, oral surgeons in Fort Wayne.

Having four oral surgeons in the office means never a dull moment! There were fractured mandibles set, severely impacted third molar teeth removed, and biopsies done, to name a few of the office procedures.

Of particular interest to me were the cases at the hospital involving more extensive oral surgery. In the operating room I observed several cases requiring maxillary and mandibular osteotomies, mandibular arch recontouring and gingival grafts on denture patients previously unable to wear dentures, and extractions on patients who might have been at greater risk without the advantage of operating room facilities.

One hospital case utilized the oral surgeons, a plastic surgeon, and an orthopedic surgeon all working together to replace a crushed zygoma and repair a fractured retro-orbital area on an acci-



**Dr. James E. Dumas**



**Joyce A. Rockwell**

dent victim, restoring function and esthetics to the patient.

Having the advantage to observe oral surgery in a hospital setting involving an entire operating room team highlighted my extramural experience. Thanks to the doctors and their staff for making it an invaluable experience.

**Scott H. Polizotto, D.D.S.**  
(Indiana University, 1964; M.S.D., 1966)

**Fixed and Removable Prosthodontics**  
809 Wall Street  
Valparaiso, IN 46383  
**Northwest Dental Society**  
**Joined Extramural Program in 1979**

My main reason for joining the Extramural Program was to be helpful to students, especially in the area of practice philosophy and practice management and, of course, to share techniques that they may not be exposed to or learn in school. Secondly, I wanted to have closer contact with students and to better understand what they are currently being taught. It is helpful to learn their philosophies and concepts about the private practice of dentistry and to get their opinions about what they believe the future of dentistry holds for them. Thirdly, I found that having students in our office

has been healthy not only for myself, but for the entire staff. It very definitely has been a positive motivational tool.

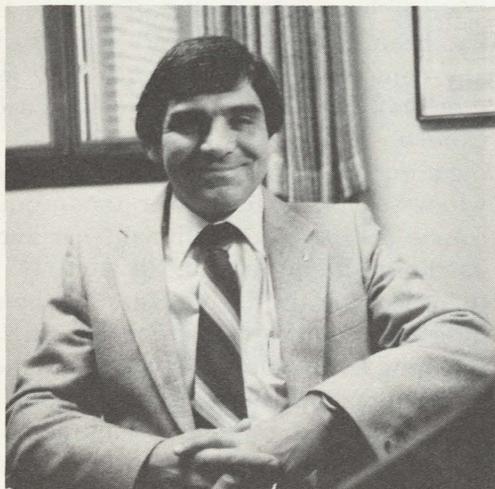
We have continued with the program because it provides us with a feeling of accomplishment, particularly when we are able to share various thoughts and ideas with the students. It is also rewarding to see their appreciation for what we are able to teach them. Also, in many instances, students have been good referral sources to our practice and this is important to all of us in practice today.

All of my impressions of the program have been quite positive. The students have been interested and sincere. As a result of their experience in the office, many of the students have become more than colleagues; we have established a feeling of mutual admiration which makes it all worthwhile.

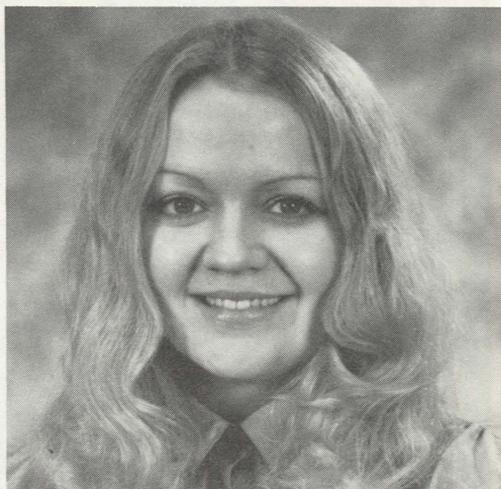
As you can see from my comments, our entire staff enjoys being a part of this excellent program and we plan to continue to participate in the future.

**Jeneen M. Mooers**  
**Class of 1983**

Before participating in the Extramural Program of I.U. Dental School, I had never observed the activities of a dental office except as a patient. During



**Dr. Scott H. Polizotto**



**Jeneen M. Mooers**

Phase II of the program, I was able to observe Dr. Polizotto in Valparaiso, Indiana, who limits his practice to that of fixed and removable prosthodontics.

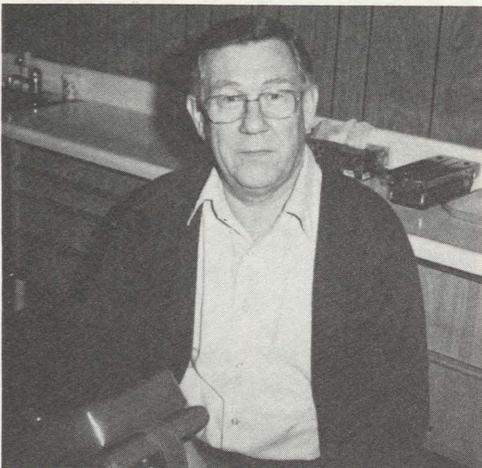
As a result of the Extramural Program, I was provided the opportunity to see and learn first-hand just how a dental office functions on a day-to-day basis. I was able to observe a busy daily private practice regimen, which included treatment planning and case presentations, the regular use of nitrous oxide, and particularly the advantage of utilizing one's own laboratory. I quickly learned that good patient management and appointment control are essential to effective and efficient dental care. I was also greatly impressed with the general emphasis placed on sound nutrition and its relationship to good dental health.

Certainly my experience with Dr. Polizotto will help me in the future when I enter practice.

**James L. Holder, D.D.S.**  
(Indiana University, 1953)

**General Practice**  
**203 West Vine Street**  
**Fort Branch, IN 47648**  
**First District Dental Society**  
**Joined Extramural Program in 1978**

After I graduated from IUSD in 1953, I was lucky enough to be able to practice



**Dr. James L. Holder**

for three months with an established dentist. During this time I felt that I had learned more about how to manage an office and the "realism" associated with the practice of dentistry than I did during my undergraduate years. Maybe I did and perhaps not, but at that time I promised myself that if ever given the opportunity I would try to help young dentists if the occasion arose. This program seemed to provide that opportunity. At that time I was also hoping my son would study dentistry and this opportunity seemed to be my chance to help him.

It is a thrill for me to watch the students grow and develop into dentists. When I began this program I felt that Practice Administration was very important to students, and it is; but the experience of being in an office and making some of their own decisions is necessary also. If more students visit here, I will try to present all the aspects of dentistry that we have time for.

**R. Todd Mabry**  
**Class of 1984**

My week with Dr. Holder was important to me because it enabled me to see many operative techniques that I supposedly am capable of doing but which I felt incompetent of performing at the time of my extramural experience. It had been almost a year since I had had any clinical experience (and that was quite limited) and I felt my competence to be sub-par. "Simple" tasks such as placing a matrix or wedge are not so simple when you have had your technique course during your freshman year and its clinical application much later. It is then that you suddenly realize just how little you remember. It seems to me that watching Dr. Holder in action taught me more about operative dentistry than I learned during my entire semester in operative technique. I remember sitting in those lectures, hearing a lot of facts and seeing a lot of slides and feeling that

I really didn't have any conception of what dentistry was all about. You can't learn dentistry by watching slides. You can't learn dentistry by going into clinic and "kind of" knowing what you're doing, doing the procedure and then receiving a minor "critique" on your work. It is possible to learn through an opportunity such as the one offered through an extramural program, where you can observe and assist an experienced dentist. You can observe his techniques and make them your own. I know that when I started clinics in the fall, my restorations then were superior to those I had done some time before. All of the "simple" things that I didn't know how to do, the questions that I remember not knowing answers for, which resulted in my restorations never quite being what I hoped for, now were answered. That is why I considered this week's experience so valuable. In my opinion, students need to see, *clinically*, not just to hear how to do dentistry before they can be expected to excel at it.

During my week in the office, Dr. holder encouraged me to participate in various aspects of dentistry but I chose largely to observe; to see how dentistry is

done. I learned a lot about the way an office is run and how a "typical" week in a dental office goes. This knowledge is something I believe impossible to acquire at school.

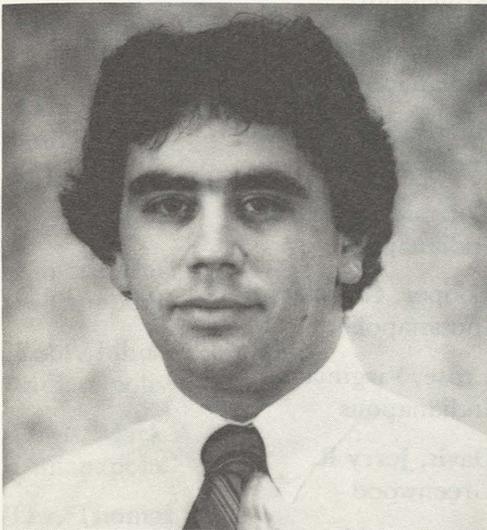
**Raymond E. Rothhaar, D.D.S.**  
(Indiana University, 1952)

**Pedodontics**  
**610 South Tillotson**  
**Muncie, IN 47304**  
**East Central Dental Society**  
**Joined Extramural Program in 1980**

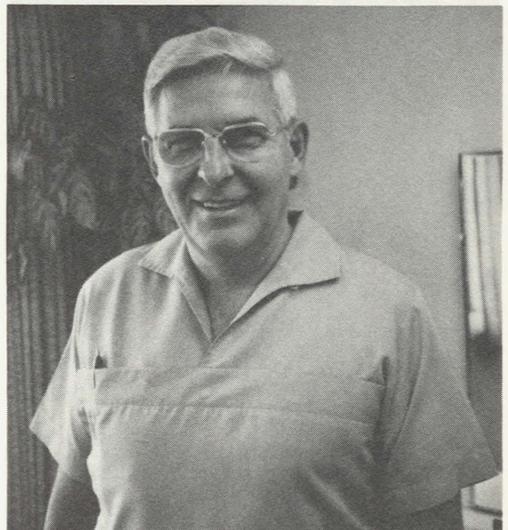
Reason for joining Program: To help establish some personal philosophy of dentistry to young practitioners; letting them see "real world", "wet fingered", etc.; to challenge the young with what they can do with this profession; to check on their training at the University; to learn any new procedures the student might have, see and listen to their goals, ideas, and dreams.

**Jaime O. Lemna**  
**Class of 1983**

From my point of view, the Dental Student Extramural Program has been a most worthwhile experience. The time I have spent with Dr. Rothhaar has af-



**R. Todd Mabry**



**Dr. Raymond E. Rothhaar**

forded me the opportunity to see many of the methods and techniques learned in school put to practice in a "real world" setting.

Dr. Rothhaar's approach to my time in his practice was such that I was allowed to work my way into the flow of the office at my own pace. Opportunities were presented to experience any phase of the practice with which I felt comfortable - ranging from greeting and seating patients, teaching oral hygiene, administering dental prophylaxes, and ultimately preparing and restoring teeth. In addition, invaluable time was spent discussing many of the factors which influence the business aspect of managing an active and expanding dental practice. I feel that the time spent in these discussions may prove to be the most beneficial aspect of my Extramural Program because this is one area that is somewhat slighted in our present Dental School education.

In closing, I would like to sincerely encourage any dental student to spend time in the office of a pediatric dentist and to become more familiar with the practices of these specialists. This time may offer the opportunity to witness first-hand both premedications and be-

havior management techniques, both of which could prove to be most valuable to the general practitioner treating children.

**EXTRAMURAL PROGRAM  
1982-83  
FACULTY-PRACTITIONERS  
INDIANAPOLIS  
DISTRICT DENTAL SOCIETY**

Allman, William J.  
Indianapolis

Amos, David T.  
Indianapolis

Bailey, David E.  
Indianapolis

Bailie, Stephen K.  
Indianapolis

Bales, Jimmie F.  
Indianapolis

Barrick, Thomas G.  
Indianapolis

Batton, Philip J.  
Shelbyville

Bischoff, T. Gary  
Brownsburg

Brannan, John D.  
Indianapolis

Burris, Raymond A.  
Indianapolis

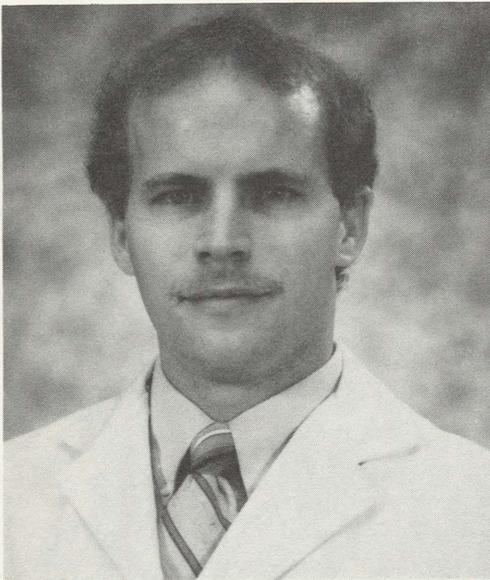
Coffman, Richard A.  
Indianapolis

Cooper, Craig D.  
Indianapolis

Crosey, Virginia W.  
Indianapolis

Davis, Jerry R.  
Greenwood

Ernsting, Richard H.  
Indianapolis



**Jaime O. Lemna**

Fisher, Ben J. Indianapolis	Linderman, Martin A. Carmel
Goldsmith, Jerald K. Indianapolis	Lucas, Thomas G. Indianapolis
Goodman, Michael E. Indianapolis	Lucus, Robert D. Indianapolis
Gordon, Charles G. Indianapolis	Majors, J. Paul Greenfield
Gossweiler, Karl W. Speedway	McDonald, Scott W. Indianapolis
Graham, Larry L. Indianapolis	Moorman, Diana L. New Whiteland
Guba, Christianne J. Indianapolis	Nicholson, Philip L. Mooresville
Heimansohn, Henry C. Plainfield	Nieten, Jerry G. Indianapolis
Herman, Stanley C. Indianapolis	Peet, Douglas E. Indianapolis
Hollander, Jay A. Indianapolis	Peet, William E. Indianapolis
James, George W. Indianapolis	Phillips, Lloyd J. Indianapolis
Jinks, James C. Indianapolis	Poland, Joseph M. Indianapolis
Judah, Robert E. II Fairland	Pole, Janet A. Indianapolis
Kelley, Louis E. Plainfield	Rice, Michael A. Indianapolis
Kemper, Walker W. Indianapolis	Richwine, Steven L. Pittsboro
Kerkhove, B. Charles Indianapolis	Rifkind, Jay Indianapolis
Kilgore, David J. Indianapolis	Rifkind, Joel Indianapolis
Koby, John H. Indianapolis	Roberts, Arthur S. Jr. Shelbyville
Lewis, Mark A. Indianapolis	Roberts, Arthur S. Sr. Shelbyville
Ley, Thomas K. Indianapolis	Schmidt, Marvin G. Indianapolis

Scott, William B.  
Greenwood

Scroggins, Don G.  
New Whiteland

Shonk, William K.  
Noblesville

Smith, Mark W.  
Edinburgh

Smith, Maurice G.  
Tipton

Smith, Richard F.  
Indianapolis

Snyder, Donald L.  
Martinsville

Solomon, Charles  
Indianapolis

Stokes, Robert E.  
Indianapolis

Stone, John J.  
Indianapolis

Stump, Norman L.  
Indianapolis

Sweeney, Gregg A.  
Greenwood

Taube, Jane E.  
Indianapolis

Thompson, Mark  
Indianapolis

Ullrich, Thomas W.  
Pendleton

Vibbert, Michael S.  
Indianapolis

Walls, Ralph E.  
Carmel

Waltke, Dennis J.  
Indianapolis

Watson, Timothy D.  
Indianapolis

Weber, Frank E.  
Indianapolis

Weber, Richard C.  
Indianapolis

Wells, Randy R.  
Martinsville

White, Reuben L.  
Indianapolis

Wiener, David  
Indianapolis

Witham, Robert J.  
Indianapolis

Wolfe, Thomas C.  
Indianapolis

Zeller, H. Eric  
Carmel

#### **NORTHWEST DISTRICT DENTAL SOCIETY**

Altenhof, C. Richard  
Valparaiso

Angerman, Robert B.  
Merrillville

Bade, Daniel M.  
Highland

Corns, Alan E.  
Valparaiso

Cuban, Nicholas P.  
Munster

Cunningham, Terry L.  
Highland

Griffith, Ermel W.  
Portage

Grubnich, Predrag  
Merrillville

Guaccio, Richard A.  
East Chicago

Haskell, Douglas A.  
Merrillville

Holm, Steven J.  
Valparaiso

Lawrence, Ross L.  
LaPorte

Maxwell, Harold D.  
Michigan City

Moon, Robert A.  
Hobart

Morfas, John C.  
Munster

Novak, Norman R.  
Chesterton

Polizotto, Scott H.  
Valparaiso

Puntillo, Charles C.  
Highland

Radovich, David M.  
Munster

Richter, Harry L.  
Michigan City

Rigg, Charles W.  
Merrillville

Rumas, E.T.  
Cedar Lake

Santare, Patricia K.  
East Chicago

Shideler, William R.  
Valparaiso

Smith, Walter T.  
Gary

Tietzer, Herbert O. Jr.  
Michigan City

Tyree, Joseph  
Highland

Wadas, John J. Jr.  
East Chicago

Barton, Douglas H.  
South Bend

Beachy, Larry L.  
Goshen

Berman, Ralph A.  
South Bend

Bryan, Norman E.  
Elkhart

Easterday, Gregory O.  
Culver

Fritts, James J.  
Rochester

Fromm, Alfred  
South Bend

Gasko, Michael B.  
South Bend

Heyde, Russell L.  
Warsaw

Hollar, Charles A.  
Warsaw

Jones, Larry D.  
Plymouth

Laderer, Clarence P.  
South Bend

Lindborg, Daniel F.  
South Bend

Melser, Ronald G.  
Mishawaka

Meyer, Raymond J.  
South Bend

Miller, Tillman E.  
Elkhart

Myers, Richard N.  
Goshen

Pugh, Thomas M.  
Culver

Rosenbaum, Charles H.  
South Bend

Seevers, Roger D.  
Elkhart

**NORTH CENTRAL  
DISTRICT DENTAL SOCIETY**

Badell, J. Douglas  
Plymouth

Ward, C. Eugene  
Argos

Weingarten, Harvey  
South Bend

Wunder, Thomas G.  
North Judson

**WESTERN  
DISTRICT DENTAL SOCIETY**

Anshutz, Wade B.  
Terre Haute

Draw, Merle C.  
Terre Haute

Driver, John H.  
Greencastle

Frey, J. Terry  
Greencastle

Garry, Michael J.  
Terre Haute

Holler, Jess L.  
Terre Haute

Jones, Phillip L.  
Clinton

Knight, John D.  
Rockville

Mast, James F.  
Terre Haute

Meyer, Karl A.  
Terre Haute

Roshel, M. Arlena  
Terre Haute

**SOUTH CENTRAL  
DISTRICT DENTAL SOCIETY**

Brewer, Gene Jr.  
Bloomington

Clark, R. Joseph  
Seymour

Coghlan, Charles  
Bloomington

Fulkerson, Ron R.  
Nashville

Hall, Daniel L.  
Bedford

Harker, John D.  
Hope

Hauswald, Ronald L.  
New Albany

Isaacs, Roger L.  
Bloomington

Kennedy, Ronald L.  
Floyds Knobs

Kenworthy, David J.  
Bloomington

Lawler, David E.  
Bloomington

Lawyer, Harrison  
Columbus

McClary, Gary W.  
New Albany

Myers, Thomas F.  
New Albany

Rhoades, Jeffrey L.  
Columbus

Roberts, Jon M.  
Columbus

Stevens, M. Gene  
Columbus

Thomas, J. Mark  
Seymour

**WABASH VALLEY  
DISTRICT DENTAL SOCIETY**

Barco, Martin T. Sr.  
Winamac

Brown, Walter C. II  
Kokomo

Chentnik, Richard M.  
Logansport

Finley, William R.  
Logansport

Goris, Dale E.  
Logansport

Hutton, Charles R.  
Winamac

Kaminski, Thomas S.  
Winamac

Ladd, John R.  
Kokomo

Ladd, Tisa E.  
Kokomo

Mattern, Robert L.  
Wabash

Mohr, F. John  
Marion

Murphy, Roger L.  
Kokomo

Musselman, Donald G.  
Denver

Pate, Phillip  
Kokomo

Prather, Thomas L.  
Kokomo

Stevens, Leonard W.  
Kokomo

Tade, E. Harold  
Marion

**FIRST DISTRICT  
DENTAL SOCIETY**

Braun, Arnold H.  
Rockport

Dean, D. Michael  
Evansville

Dunigan, Gerald E.  
Mt. Vernon

Ellis, Michael V.  
Holland

Gotwald, David K.  
Washington

Greif, L. Charles  
Evansville

Haller, Gary M.  
Huntingburg

Holder, James L.  
Fort Branch

Inman, Jed M.  
Boonville

Johnson, Arthur D.  
Evansville

Kendall, Charles E.  
Evansville

Luebbe, Gerald F.  
Evansville

Miley, Robert L.  
Evansville

Nevill, Stanley R.  
Evansville

Parker, Clyde W.  
Evansville

Schymik, John B.  
Evansville

Scott, D. Craig  
Bicknell

Smith, Clarence J.  
Evansville

Snyder, Alan F.  
Vincennes

Wilson, James D.  
Boonville

**ISAAC KNAPP  
DISTRICT DENTAL SOCIETY**

Baker, Terry L.  
Decatur

Blake, Thomas R.  
Fort Wayne

Brinker, Glenn N.  
Fort Wayne

Dellinger, Eugene L.  
Fort Wayne

Derrow, Donald E.  
Auburn

Duch, Ronald V.  
Fort Wayne

Dumas, James E.  
Fort Wayne

Eichenauer, David F.  
Decatur

Ertzinger, George L.  
Fort Wayne

Evans, Robley E.  
Bluffton

Gebfert, Robert P.  
Fort Wayne

Hake, Joseph W.  
Huntington

Hayes, John P.  
Albion

Hile, Verlin G.  
Columbia City

Hoffman, Thomas J.  
Fort Wayne

Horsewood, Arlen R.  
Hoagland

Jansen, James S.  
Kendallville

Kaufman, Gerry L.  
Fort Wayne

Ladd, Gregory A.  
Fort Wayne

Lamp, Dennis W.  
Kendallville

Olinger, Jeffrey A.  
Huntington

Regan, John E.  
Huntington

Rumbaugh, Leo W.  
Fort Wayne

Schmidt, Daniel L.  
Auburn

Stetzel, Robert M.  
Fort Wayne

Sturm, Michel R.  
Fort Wayne

Tatman, Mark W.  
Portland

Thompson, Alden B.  
Kendallville

Thompson, William A.  
Kendallville

Urban, Daniel P.  
Fort Wayne

Vollmer, Robert E.  
Fort Wayne

Yoder, Keith E.  
Fort Wayne

**WEST CENTRAL  
DISTRICT DENTAL SOCIETY**

Boardman, Thomas M.  
Lafayette

Buyer, John J.  
Francesville

Dennis, David S.  
Kentland

Ditto, Roland R.  
Lafayette

Hall, Yelverton B.  
Lafayette

Hammersley, William L.  
Frankfort

Hodge, Larry K.  
Frankfort

Klockow, R. Gordon  
Rensselaer

Lord, Maurice P.  
Lafayette

Reinhold, M.L.  
Monticello

Swoverland, Donald L.  
West Lafayette

**BEN HUR  
DISTRICT DENTAL SOCIETY**

Ewoldsen, Nels O.  
Cloverdale

Robinson, George B.  
Crawfordsville

Warren, Ross W.  
Crawfordsville

**EASTERN  
DISTRICT DENTAL SOCIETY**

Deale, Hugh S.  
Richmond

Metz, Vaughn P.  
Connersville

Weber, Gary E.  
Connersville

**GREENE  
DISTRICT DENTAL SOCIETY**

Asdell, Benoni W.  
Loogootee

Broshears, Keith M.  
Linton

Dunkerly, Paul W.  
Linton

Green, Gordon K.  
Lyons

**SOUTHEASTERN  
DISTRICT DENTAL SOCIETY**

Beagles, Raymond  
North Madison

Harper, Stephen T.  
Clarksville

**EAST CENTRAL  
DISTRICT DENTAL SOCIETY**

Church, Dennis L.  
Elwood

Cribbs, William P.  
Muncie

Current, William C.  
Muncie

Dickey, David A.  
New Castle

Frist, Phillip S.  
Anderson

Fullhart, Ted L.  
Muncie

Griffith, James R.  
New Castle

Lind, David C.  
Winchester

McLaughlin, Carey  
Anderson

Pierce, James G.  
Anderson

Rector, Thomas C.  
Muncie

Rothhaar, Raymond E.  
Muncie

Smith, Glenn M.  
Montpelier

Williams, V. Richard  
Winchester

**NATIONAL  
OPPORTUNITIES**

Stark, Marvin M.  
Pelzner, Roger B.  
Mobile Dental Clinic  
University of California at  
San Francisco, CA

Ward, G.T., Capt.  
U.S. Coast Guard Support Center  
Alameda, CA

**INTERNATIONAL  
OPPORTUNITIES**

Dortelus, Jocelyn  
Bethesda Medical Center  
Oriental Missionary Society  
Port-au-Prince, Haiti

# Notes From The Dean's Desk

*Ralph E. McDonald*

Not long after this issue reaches our alumni, the new classes of dental and dental auxiliary students will have begun their programs. On a national basis the number of students applying to Dental School continues on a downward trend, dropping to 5,514 applicants from a total of 5,798 on the same date last year. Our School is fortunate to have a good applicant pool of approximately 300 academically qualified young men and women for the 115 places in the dental class. In 1975-1976 the number of applicants to the then 59 dental schools peaked at 15,734. The marked decline in applicants in the intervening years is attributed mainly to the rising costs of education and the decreasing availability of loan funds, particularly low interest loans, as well as to a perception that there are not as many practice opportunities as there once were. The fact that our School's applicant pool continues to include many well qualified applicants is evidence that our alumni are assisting us by recommending dentistry as a career. Thank you for your help.

Three years ago the Indiana Dental Association House of Delegates established the Pursuit of Excellence Endowment Program. Membership in the Dean's Council of the endowment program is acquired by a \$5,000 pledge over a five-year period. The program is designed to assist our School in attracting and maintaining a nationally and internationally recognized faculty, to help maintain excellent education facilities and to provide grants to outstanding faculty members demonstrating excellence in teaching and research. Currently gifts, pledges and deferred gifts in excess of \$500,000 have been received. In the Fall, 1982, issue it was reported

that Professor Marjorie Swartz and Dr. John Risch had been honored with \$1,000 awards for excellence in research and teaching.

We don't like to think that our School takes a back seat to any other dental school. However, in recent years it has become evident that the utilization of in-house computer technology has been a weakness in our program. Last year we made a plea to our alumni for special pledges, in addition to their annual giving to the School, to allow us to purchase equipment for a School-wide computing facility. Alumni response in the form of monetary gifts has been very gratifying, and I now can report that we are embarking on a program to develop "hardware" and "software" packages to assist in providing data related to our clinical programs. Matching students with specific patients, maintaining accurate records of student achievement, and following patient progress and later recall appointments are becoming a reality. Of course, we maintained clinic records before but we can look forward to doing this more efficiently.

Research computing equipment is now recognized as an essential aid to our programs as we compete for research dollars from industry and from state and federal sources. Again as a result of alumni gifts, computer research terminals have been installed in the dental materials laboratory of Associate Dean Ralph W. Phillips and in the oral facial genetics laboratory of Dr. Rosario Potter.

Another rapidly growing component of the computer age is computer-assisted instruction (CAI). This capability is also being established in our School's computer center, directed by Dr. Potter. Currently, Dr. James McDonald and the



Dr. Cham Hovijitra, programmer, at the ADM3A CRT terminal. At foreground is the Digital Equipment Corporation DECwriter II terminal. Both terminals connect to the mainframe computers within the IU Computer Network: DECsystem 10, IBM 4341 in Indianapolis and the CDC 6600/Cyber 172 in Bloomington.



James Hubbard (at keyboard), programmer, demonstrates advanced graphic capabilities of Digital Equipment Corporation's General Imaging Generator and Interpreter (GIGI) terminal to Dr. James McDonald (left), Dr. Rosario Potter, and Dr. Cham Hovijitra. The computer terminal connects to a host computer (VAX 11/780 system) in Bloomington Academic Computing Services via communication lines.

members of the teaching committee are developing programs to assist students in reviewing for national board examinations. Classroom use of computer-assisted instruction is an eventual goal of the new program.

### Faculty Recognition

Indiana University School of Dentistry faculty members continue to be recognized by local, state and national organizations by being appointed to leadership roles. Dr. James R. Roche, Associate Dean for Faculty Development, has been appointed Executive Secretary of the American Board of Pedodontics, and the offices of the national organization have been moved to our School. The Organization has a membership of 2,200. Currently, 398 active Diplomates hold Board certification and 2,266 "Board-eligible" candidates are participating in one or more of the four examination Sections,

which include a written, an oral, a case history, and a clinical evaluation. The Office of the Executive Secretary maintains communication between Board members, Diplomates of the Board, and candidates, as well as with all American Dental Association-accredited advanced education programs in pedodontists. Candidates' files are maintained and updated, applications for eligibility status are processed from pedodontics throughout the world, and Board certificates are issued to candidates who pass all Sections of the Board examination.

Dr. Roland Dykema is Chairman of the American Board of Prosthodontics and our School is scheduled to host the Board during its annual examination in June, 1983.

In April Dr. Donald Arens was elected President of the American Association of Endodontists. Other faculty members honored include: Dr. Charles E. Tomich, who is serving as Secretary-



Vicki Williams, data technician, at the microcomputer system consisting of (L to R): Printer terminal (NEC Information System's 3510 SPINWRITER), APPLE II PLUS microcomputer with two disk drives and monitor, and optional color monitor.

Treasurer of the American Board of Oral Pathology; Dr. Hala Henderson, who has been named to the Executive Council of the American Society of Dentistry for Children; and Dr. David Avery, named Chairman of the ASDC Public Relations Committee.

The Office of Editor-in-Chief of the Journal of Pediatric Dentistry, the official publication of the American Academy of Pedodontics and the American Board of Pedodontics, has also been moved to our School and your Dean has been appointed Editor. The editor of our Alumni Bulletin, Dr. Ralph W. Phillips, received the International Research Award from the Academy of International Dental Studies during the annual session of the American Dental Association in Las Vegas.

### Scotty Is Honored

Mr. Richard C. Scott, Director of the Illustrations Department, received the Special Service Award of the Indiana Dental Association on April 29, 1983, during the 125th Annual Session of the IDA in the Indiana Convention-Exposition Center. According to Dr. Eugene E. Brinker, Association President, such awards recognize persons who provide outstanding service in advancing the objectives of the health profession and the dental profession in particular. Dr. Brinker told Scotty in the letter notifying him of the award: "You have met these qualifications many times over." Dr. Maynard K. Hine hired Scotty as his first staff appointment soon after he became Dean of the Dental School in 1945.



Dr. James R. Roche, Associate Dean for Faculty Development, has been named Executive Secretary of the American Board of Pedodontics. Here Dr. Roche briefs secretaries Mrs. Karen Gremore (left) and Mrs. Susan Whitlow on Board procedures.

Dr. Simon Katz has been invited by the Dean of the Malaysian University School of Dentistry, Kuala Lumpur, Malaysia, to be an "External Examiner" in Preventive Dentistry and to give a short course on the subject. That university routinely invites faculty from abroad to assist and contribute a different view during the final examinations of their students. This year there were 16 External Examiners, mostly British, but they wanted the "American view" also.

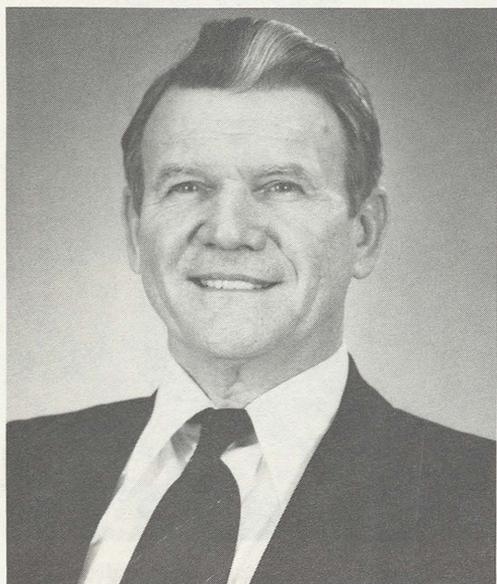
Dr. H. William Gilmore, Professor of Operative Dentistry, a part-time faculty member and former Chairman of the Department, has been elected Trustee for the Seventh District of the American Dental Association. Dr. Gilmore is also Editor of the Journal of the Indiana Dental Association and former President of the American Association of Dental Editors. He is principal author of the text *Operative Dentistry*.

Dr. Rolando A. DeCastro's exhibit entitled "Germ City," which has been on display at the Indianapolis's Children's Museum and other locations, was one of three projects that tied for first place in the Community Awareness Division of

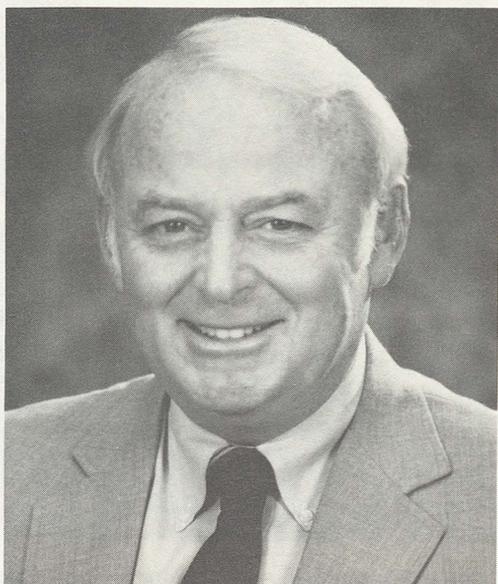
the Awards of Excellence program sponsored by the Auxiliary of the American Dental Association. The announcement was made at the annual session of the AADA in Las Vegas. Dr. DeCastro's exhibit, sponsored by the Auxiliary of the Indianapolis District Dental Society, shows a girl's head including teeth with extensive decay until the dental train visits to make her mouth healthy. A picture of the exhibit appeared in the Spring, 1982, *Bulletin* (page 62).

Several dental students have received national recognition in recent months. Mrs. Diane Beecher, a second year student, was awarded first prize in the American Academy of History of Dentistry Essay Contest for her paper on the History of Dental Health on Guam. Mr. James R. Oxford earned honorable mention in the same contest for his essay on history and ethics.

Second Year Dental Student Mark Gardner, who creates cartoons as a hobby recently won first prize for one that he submitted to a contest featured in the *Dental Student*, a national publication. The winning cartoon, along with a photo and biographical sketch on Mr. Gardner,

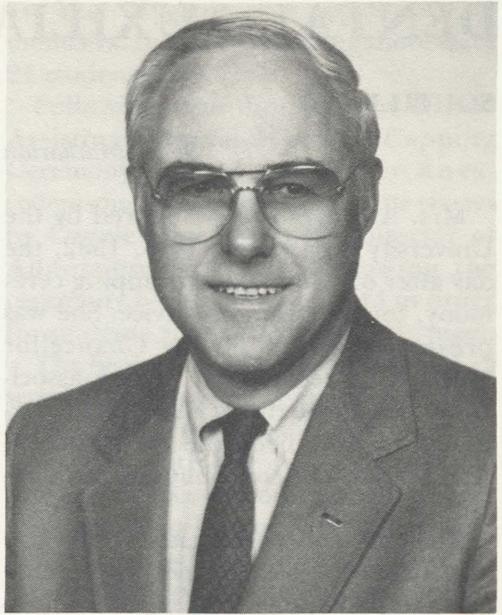


Mr. Richard C. Scott



Dr. Donald E. Arens

appear in the January issue. He has also been commissioned to do a cartoon ad for the Sagamore (the IUPUI student newspaper). One of Mark's cartoons is reproduced in this issue of the *Bulletin*.



**Dr. H. William Gilmore, Professor of Operative Dentistry on the part-time faculty and former Chairman of the Department, has been elected Trustee of the Seventh District of the American Dental Association. Dr. Gilmore is Editor of the Journal of the Indiana Dental Association and former President of the American Association of Dental Editors. He is also principal author of the text *Operative Dentistry*.**



**Noted dental historians Dr. Maynard K. Hine (left) and Dr. Jack D. Carr congratulate Mrs. Diane M. Beecher and Mr. James R. Oxford, second year dental students, for winning first place and honorable mention, respectively, in the national essay competition (the Bremner Award contest) sponsored by the American Academy of the History of Dentistry. Drs. Hine and Carr are both former presidents of the Academy.**

# DENTAL AUXILIARY EDUCATION

## SOUTH BEND

*Shant Markarian*

Mrs. Ann Grant was honored by the University on Devenber 13, 1982, the day after our annual joint capping ceremony, for ten years of service. She was presented with a pin by Chancellor Wolfson in recognition of her association. Dental Auxiliary Education is fortunate to have been the benefactor of Ann's talent and contributions throughout this period.

The east- and west-located restorative and hygiene clinics, formerly separated by an impenetrable wall, are now mutually accessible with the creation of a doorway, thanks to the members of the IUSB physical plant. This much-needed modification has improved the efficiency of our operations by facilitating student scheduling in hygiene clinic, improving traffic flow, and allowing access to operatories, faculty offices, and other facilities located on the east wing of Riverside Hall.

Valerie Mullin's resignation in December was accepted with regret, tempered somewhat by her prospect of an exciting living experience in Washington State. Barbara Pasioneck is Acting Supervisor of Dental Assisting, and is working closely with practitioners to provide her students with needed experience to round out their curriculum.

We are grateful to the following dentists for taking part in our assisting externship program for the '82-'83 year: Drs. Rebecca F. Apple, Douglas C. Bateman, Ronald Corey, James A. Douglas, M. Gilbert Eberhart, Frank N. Ellis, E.M. Feltman, Michael L. Freid, William Gitlin, George K. Glass, Michael B. Griffee, Thomas L. Hadley, John F. Harrington, David J. Harris, Stephen Hunt, Michael Johns, Timothy Kulik, C. Port Laderer, John B. Lehman, Daniel F.

Lindborg, Dennis Miller, Gregory Moo, John Nyberg, William Paul, Michael D. Rader, Charles Rosenbaum, Douglas Barton, Jack Stenger, Harvey Weingarten, G.E. Thistlethwaite, Daniel E. White, Howard Wiesjahn, Patrick Williams, and Jack Wright.

In January, Pam Borden, an alumna of IUSB and former adjunct faculty member in hygiene, joined us on a full-time basis as lecturer in dental assisting and hygiene. Pam assumed the responsibilities of her newly-acquired position as if she had always been with us.

Our programs received a memorial gift from the Mishawaka Dental Society in tribute to the late Dr. Joseph Pesut, a former practitioner and faculty member. A plaque commemorating "his years of teaching at Indiana University and his dedication to dentistry and his patients" has been placed in the reception area of our main clinic. The gift will be used to purchase sterilizing equipment.

Martha Moriconi authored an article, "Health Hazards are Present in the Use of Smokeless Tobacco," in the South Bend Tribune on January 10, 1983. Dr. Harvey Weingarten is videotaping operating positions of hygiene students in clinic as an aid to establish proper posture, a desirable goal in the practice of dental hygiene. Nanci Yokom incorporated her own video-tape into the hygiene curriculum, and revised the Clinic Manual. Jennifer Klein has spent considerable time as Faculty Advisor in the Freshman Advisory Program, and as coordinator of Admissions in hygiene. Barbara Pasioneck revised her Oral Anatomy Lab Manual, is well on her way toward achieving her goal of computerizing supplies and inventories, and in collaboration with Jennifer, is developing a completely new dental assisting-dental hygiene program brochure.

The North Central Dental Society

hosted second-year hygiene students at their continuing education program in Oral Pathology featuring Dr. Charles Tomich in the fall, and again in the spring for Dr. Gordon Christensen on dental materials. Society members donated \$3,050.00 to the '81-'82 fundraising campaign, an increase of 56 percent from the previous year. These funds have been used to acquire a phantom for radiology for both programs.

Dr. Charles Hassel is chairman of the IUSB Dental Auxiliary Education Contribution Fund for North Central Dental Society. The project he is directing for the '82-'83 academic year is a new x-ray unit. Progress to date has been excellent: 62 members have contributed more than \$3,000.00.

Dr. Jack Stenger and Dr. Larry Beachy have been appointed by Chancellor Wolfson to the IUSB Dental Assisting and Dental Hygiene Liaison and Resource Committees, after having been nominated by their dental society. They will serve three-year terms.

We wish to acknowledge the participation of Drs. Michael Freid, Michael Johns, Ted Mager, John Lehman, Jim Macri, Jack Stenger, Eugene Kuzmic, Harvey Weingarten, and Doug Barton in our "Introduction to Dentistry" courses in assisting and hygiene.

The continued support of faculty, practitioners, auxiliaries, and IUSB and School of Dentistry administrators all comes together to serve as a mirror of our total educational system at IUSB.

## DENTAL ASSISTING AND DENTAL HYGIENE

*Barbara Pacionek and  
Nanci Yokom*

The 1982-83 academic year has gotten off to a great start here at IUSB.

The Fall semester began with the return and registration of our 17 Second-Year Dental Hygiene students. We were all happy to see the students again. The

1st Year Hygiene class began with 21 members. In Dental Assisting there were 21 students also.

Following tradition, a joint Dental Assisting—Dental Hygiene Capping Ceremony was held in December. An excellent charge was delivered to the classes by Connie Horton-Neville, Director of Admissions at IUSB. Following the ceremony a reception was held in order for students, parents and faculty to meet.

The beginning and the end of the Fall semester saw several changes in faculty. Janet Olson resigned in August to accept a position with the American Dental Hygienists Association. Jennifer Klein was permanently appointed to the Dental Hygiene faculty as of August. In December, Valerie Mullin resigned as Supervisor in Dental Assisting in order to join her new husband in Seattle, Washington. Barbara Pacionek was appointed Acting Supervisor of Dental Assisting.

We wish the best to Janet and Valerie, and we are very pleased with the appointments of Barb and Jennifer.

Spring Semester has been hectic, but full of many good experiences. As we look toward the end of the year, we are anticipating the successful completion of courses, requirements and rotations.

## DENTAL ASSISTING INDIANAPOLIS

*Pauline R. Spencer*

The Dental Assisting Program at Indianapolis accepted 24 students for the 1982-83 class.

The class officers are: President, Patricia McGee; Vice President, Stephanie Sheets; Secretary, Mary (Grimes) Stringer; Treasurer, Cathy Doyle; and Student Representative, Trudi Parker.

The following students were named to the Dean's list for the first semester:

Leslie Harbison	4.0
Beth Johnson	3.7
Winnie Arnold	3.7
Members of the class are diligently	

preparing table clinics, posters and papers. The class will also be in charge of the annual open house March 24 for applicants of the 1983-84 class. A tour of the Dental School facilities is planned. The tour will be followed by an informal get-together to acquaint the applicants with details of the program and the dental assisting profession and to answer questions about campus life and class activities. We have found this particular experience to be extremely popular with the applicants who are able to attend.

The climax of the school year will be graduation which will be held Monday, May 16, 1983.

## **DENTAL HYGIENE FORT WAYNE**

*Gloria Huxoll*

National Children's Dental Health month seems to be the kick-off for the second semester. Our second year students and graduates play a very important part toward its success in our community. Sheli Winans Taulbee, '81, is the local chairperson. She had many exciting things to say about her trip to Istanbul, Turkey, including the several opportunities to visit dental facilities. Dental Health facilities there are very outmoded; she stated that we are very fortunate in Fort Wayne—also that many people here do care about dental health and something is being done about it.

Speaking of graduates, our Dental Hygiene Alumni Day is planned for April 23, 1983. Chairperson Elaine Brown Foley, '68, is working very hard to make it a big success and also working toward her class (15 years ago) being recognized as having the greatest percentage of graduates returning for the special occasion.

Notes from two of Elaine's classmates, Deborah Rhodes Brown and Kay Oser Fulkerson, tell us they are planning to

attend the 15th reunion of their class. Debbie, who is a dental hygiene faculty member at the I.U. School of Dentistry, is moving to Great Lakes Naval Station where hubby Lieutenant Commander Trumin is being transferred following the completion of his Master's Degree in Nursing Administration. Sorry, Debbie, Hawaii next time! And Kay is a degree student at the I.U. School of Dentistry in the field of Public Health where she is doing her student teaching - Good Luck, Kay! This year, classes of 1968, 1973 and 1978 will be honored.

Becky Gremaux Ross '68, returned from her California home to spend time with her family and a small gathering of classmates. Other news from the West came in a telephone call from Deborah Holden '80, two weeks ago. She and Bruce may be coming back to Indiana. Also from the West, was a note from Judy VanGheluwe '76, saying that she has been accepted for the fall dental class at the University of Colorado in Denver. We wish her the very best—happy studying, Judy!! News from another member of the Class of '76 came from Lea Powers Gebhard with a new address and a picture of her own artistic sketch of their new home. She recently was promoted to Art Director at the design studio where she is employed. Lea is still coaching a boys' diving team and of course, still practices dental hygiene on Saturday mornings. One busy gal, I would say. I read a note from Marjorie Barnett '76, from Hartland, Wisconsin, stating she is now going into semi-retirement from private practice to await the arrival of their second child.

News of the class of '81 was a telephone call from Susan Krug Newman from Bloomington, Indiana, who is working part-time in private practice. Patients in the clinic last week were Carla Brown Sailors and Libby Mitchell Olds from Kokomo, who came to be patients for one of the second year students. They

both are employed by the same dentist in Kokomo, how about that!

Many of the 1982 graduates are active in our local dental hygiene association, and it is a delight each month to see Sharon Albert, Susie Brown, Linda Craig, Julie Christianer, Jan Hazelett and Lisa Ottinger. Sally McLear Baumer is learning how to tend to newborn calves on their farm and in September they will be tending their own wee one. She is still working three days a week. I had a note from Lynn Ramer who works in Wabash and heard that Tammy Johnson drives to Michigan City to work. Jill Klingbeil travels to New Carlisle, Indiana. Ann Busch stops in to see us when she gets into town from her studies in Public Health at I.U. School of Dentistry. Always excited—that's Ann!

Our second year students are busy with their articles for Technical Writing, studying for National Boards and looking for patients for State Boards. They took time out from their studies to go roller skating with other D.A.E. students and faculty this winter.

Dr. Lloyd Hagedorn was guest speaker for the First Year Dental Hygiene Capping Ceremony on December 12, 1982. We were truly honored and pleased to have Dr. Hagedorn with us on such a special occasion. This is always an exciting time for the first year students as it marks a beginning for them as health care providers for dental patients.

## DENTAL LABORATORY TECHNOLOGY FORT WAYNE

*Charles A. Champion*

This semester finds our soon-to-be-graduated Class of 83 participating in their extramural laboratory assignments. The feedback we have received from participating laboratories has been

very encouraging, and it appears that the students are gaining a very valuable educational experience.

We have nineteen students currently enrolled in their second semester. This class (1984) has one student from Hawaii and one from Pennsylvania; the rest are from Indiana. Recently elected class officers are: President, Mr. James Martin; Vice President, Mrs. Gina Dickson, and Secretary-Treasurer, Ms. Mary Hause.

The orders have been placed for our second new laboratory facility. This will be a general purpose laboratory and have 10 fully equipped student stations. If things progress as planned, we should have the laboratory fully functional before the semester ends.

Mr. Dale Bender (76) and Mr. Larry Stoller (78) have joined our program as associate faculty members. Welcome aboard, Dale and Larry!

Mr. Dave Doles (78) became the proud father of a son born late last summer. Ms. Jill Cox (80) is now Mrs. Weaver and living in California. Mr. Leon Gondell (80) is *still* attending IPFW and should receive his M.S. in education in the near future. Ms. Barbara Gederian (82) is doing her student teaching in our program and will receive her B.S. in education at the end of this semester. Rumor has it that several of our former students are planning to be married soon. Those that we are aware of are Barbara Gederian, Dawn Fisher and Lori Wiedman, all from the class of 82, and Caron Castle, class of 81. Congratulations to everyone and best of luck with your respective futures!

## DENTAL ASSISTING FORT WAYNE

*Rosemary M. Kovara*

Once again, area dentists, physicians, pharmacists and pharmaceutical salespersons participated in the Duke's Day

Scholarship program. The Dental Assisting Class received four scholarships this year. The recipients were Jane Ahlersmeyer and Sue Reams from New Haven and Theresa Herber and Kary Walker from Fort Wayne.

Dental Assisting Class officers for 1983 are: Lisa Logue, Fort Wayne, President; Katy Sanborn, Angola, Vice-President; Annette Harber, Columbia City, Secretary; and Lori Steiner, Geneva, Treasurer. The class is working to attend the 62nd Annual Session of the Indiana Dental Assistants Association.

The extramural clinical program is an important portion of the Dental Assisting curriculum. The following dentists from Fort Wayne area participate in the program: Drs. David Bojrab, John Buhler, Gregory Crawford, James Crossen, Eugene Dellinger, Thomas Doty, Michael Duch, James Dumas, Phillip Gardner, Lloyd Hagedorn, John Hamilton, James Herber, Brad Korn, David Matthews, Brent Mutton, Richard Phillips, Gary Pulfer, James Ruble, Timothy Shambaugh, Steven Underwood, Robert Vollmer and Thomas Winans. These dentists and their staffs are greatly appreciated.

Each member of the Class of '83 participated in the Fort Wayne area Children's Dental Health Month education programs. They found working with the third graders a most rewarding experience.

The 23 members of the Class of '83 will graduate Sunday, May 8, 1983. Chancellor Joseph P. Giusti will preside at the ceremony.

## **DENTAL HYGIENE INDIANAPOLIS**

*Evelyn Oldsen*

The 1983-84 academic year began in August with 36 first year students and 35

second year students enrolling, along with three students in the B.S. Public Health Dental Hygiene Program. We are fortunate to have a new part-time faculty member, Mrs. Nancy Stutsman Young. Mrs. Young is an IU graduate and is teaching the Dental Public Health course. We are pleased to have her as a faculty member.

Two second year students, Rebecca Godfrey and Paula Underwood, received third place honors on their table clinic at the ADHA Annual Session in Las Vegas. They represented our program with their presentation entitled "Forensic Dentistry: I.D. to the Unknown". All second year students will present table clinics at the School of Dentistry Table Clinic Day and at the state annual session in May. Under the guidance of Mrs. Sheila Mordarski, they have all worked very hard with their presentations and are to be commended for their efforts and hard work.

Students on the Dean's List for the fall semester include: first year - Kelly Flanigan, Kaye Hirschman, Kelly Brittan, Brenda Reifenrath, Susan Ramsey; and second year - Alicia Brant-Crabtree, Amy Baldwin, Louise Cull, Sherri Brown, Lisa Sawyer. Students recognized for the Dean's List rank in the top 10% for grades earned in a given semester. We congratulate these students on their outstanding academic achievement.

The Alumni Day program was held October 16 and enabled graduates to renew acquaintances and enjoy a Mexican buffet. The event was held at the School of Dentistry and honored the reunion classes of 1952, 1957, 1962, 1967, 1972 and 1977. Anita Weaver Bond was presented the distinguished alumni award for her contributions to the dental hygiene profession.

The A. Rebekah Fisk Memorial Scholarship Fund has been established for full-time students enrolled in the A.S. or

B.S. Dental Hygiene program at Indiana University School of Dentistry at Indianapolis. Contributions may be made to this scholarship fund through the Indiana University Foundation.

## **DENTAL LABORATORY TECHNOLOGY—EVANSVILLE**

*Paul Robinson*

The class of 1982 consisted of students mainly from the Evansville area, and most have chosen to remain in Evansville for their first jobs. Sandra Blevins (mother of three) is working full-time and is an adjunct faculty member here one day a week. Rick Manchette is working in his father's laboratory. Melissa Dempster returned to her hometown, New Albany, Ind. All three graduates are working in fixed prosthodontics. JaGail Hart specializes in removable partial dentures in an Evansville laboratory. Diane Marshall and Kris Sibrel are working outside the Evansville area.

Candidates for graduation in 1983 are busy preparing for the Recognized Graduate exam, finishing their final projects and arranging for their eight-week preceptorships. The class of 1983 appears to be looking for positions outside the Evansville area. One student is planning to work in Nashville, and several others in Terre Haute. Of nine students in the class, six plan to leave the Evansville area.

## **DENTAL HYGIENE EVANSVILLE**

*Deborah Henry*

The spring semester is as usual a very busy one for both the first year and second year dental hygiene students. Both classes are busy with money-making projects to help fund their trip to the May meeting. The second year students will be presenting table clinics at the meeting and all students will be attend-

ing the opening session of the IDHA House of Delegates.

The second year students are studying for National Boards and searching for patients for their state boards.

Both classes will be participating in Children's Dental Health Month Activities held at Eastland Mall. They will provide entertainment for the children by presenting skits they have organized, playing the "Tooth Fairy", and showing films.

Commencement exercises are scheduled for Saturday, May 7. We congratulate the graduates on their achievements and welcome them into the dental hygiene profession.

## **DENTAL ASSISTING EVANSVILLE**

*Suzanne Schnacke*

The fourteen dental assisting students have been very active preparing for the clinic paper and poster competition at the IDAA May meeting. One of the clinics is now being used by the students to instruct preschoolers in proper oral hygiene. The class will also be going to an elementary school to conduct a brush-in for grades K-6th. Graduation is scheduled for May 10.

## **PLACEMENT SERVICES**

*(continued from page 49)*

"Dentist, ten years' experience in high quality private general practice. Seeks opportunity outside Continental U.S. Clinical, teaching and administrative considered."

"For Sale: Variety of wall mounted formica dental cabinets. Excellent condition."

To reiterate, the IUSD graduate can more effectively meet career objectives if the preliminary investigative work is carefully carried out. Whatever opportunity one is seeking, counseling and resources can be found at the School of Dentistry to help in the quest.

# Alumni Notes

Ruth Chilton

Greetings to all! We hope you had a most happy Holiday Season, and are looking forward to a happy and fulfilling 1983! Here in Indiana we have enjoyed a wonderful winter (although I am sure those of you who like winter sports are probably not particularly pleased!) We have not really had any winter weather, but there is still March (and from rumors I have heard, we may have some colder weather soon!)

Some of you may not have heard the latest news about Richard Scott, our long-time photographer. We are pleased to tell you that this year he was elected to receive Indiana Dental Association's highest honor, the Special Service Award. Congratulations are in order for "Scotty!" I am sure you will find details of this somewhere else in this issue.

Now — a plea for news — news — news! You class secretaries, or you individuals PLEASE tell us about your activities, your plans for the future, your family, etc., etc., etc. Remember the dedicated teachers at IUSD? They'd like to hear about your efforts and your successes! The staff would also enjoy hearing about their favorite students.

By the way, we certainly do wish you could all return to the campus one of these days to see how much it has expanded, how beautiful and impressive it is. . . how proud you would all be of it! You will find much in your Dental School to be proud of, also.

Also, just in case you've lost Cleona Harvey McCreight's address and want to write her, we're glad to give it to you again:

500 Rancheros Dr. #40

San Marcos, CA 92069

And now we give you news of the

## Class of 1916

We are sorry to report the death of Dr. Charles S. Foster of Casey, Ill.

## Class of 1923

We are sorry to report the death of Dr. Harry Nagle and of Dr. Estel R. Wesner, both of this class.

## Class of 1926

We are sorry to report the death of Dr. Frederick J. Decker.

We have a change of address for

Dr. Clyde F. Thornburg  
R.R. 1, Box 4 % Helm  
Selma, IN 47383

## Class of 1927

Dr. Delmar Faun, who lives in Colfax, Indiana, made a handsome lamp from a foot engine (pictured elsewhere in this issue) and presented it to Dean McDonald with these comments:

*When I came to the Indiana Dental College in 1924, before its metamorphosis into I.U.S.D., each student had to have his own foot-powered dental engine. A few handicapped students were permitted to have electric engines; otherwise they were not permitted. The foot engines were manufactured by Cleve-Dent and the S.S. White Company, and sold by the Ransom & Randolph and T.M. Crutcher dental supply houses. They cost approximately \$100.*

*Each student, for four long years, had to carry his engine with one hand and his instrument case with the other hand upstairs, downstairs, from locker to technic room, to operatory, to locker several times daily. They seemed to weigh a hundred pounds and pulled one's arms out of the sockets. That is why old dentists have long arms!*

*The student had to stand to pedal his engine. Sit-down dentistry was unheard of.*

*I have pedaled my engine to the North Pole and back!*

And we have changes of address in this class for:

Dr. Arthur W. Hellenberg  
Bercado Place 120, Apt. 4  
Mishawaka, IN 46544

Dr. Robert W. Little  
R.R. 2, Box 159  
Whitestown, IN 46075

Dr. Carl L. Menning  
838 Ravenswood Dr.  
Evansville, IN 47713

### Class of 1928

It is with much regret that we report the following three deaths for this class:

Dr. Paul K. Losch  
Dr. William R. Shideler  
Dr. Clinton H. Wilkin

### Class of 1929

We have a change of address for

Dr. H.M. Armstrong  
10021 Thunderbird Blvd.  
Sun City, Arizona 85351

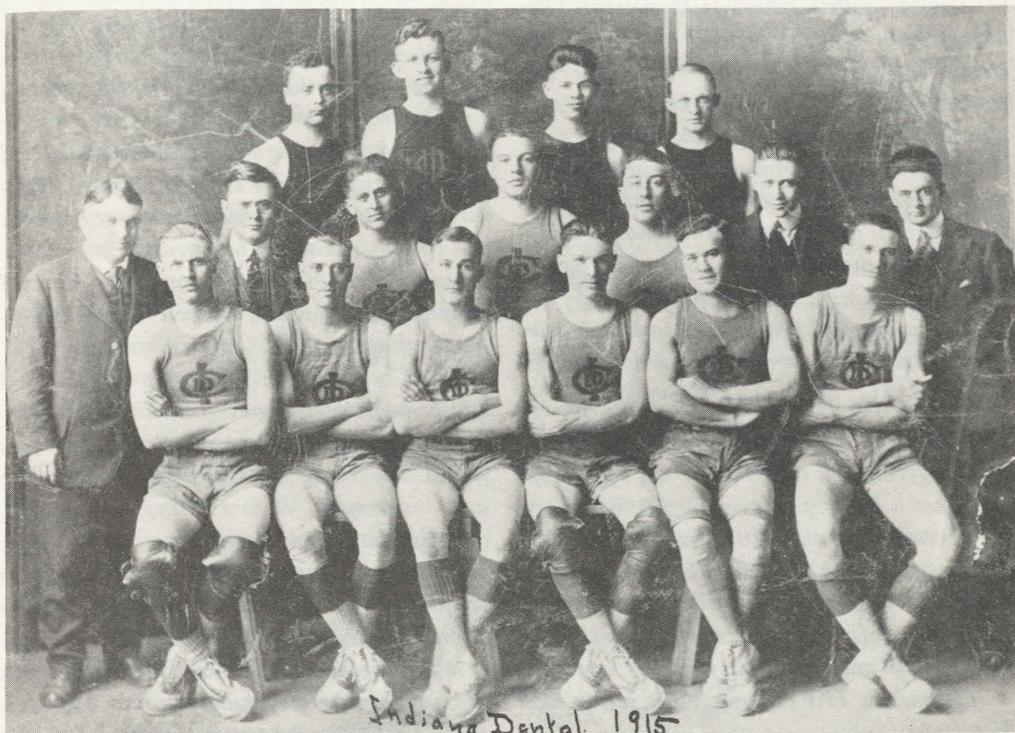
### Class of 1931

We received a very interesting report about this class from

Dr. Marvin Cochran  
12160 S.W. Imperial Ave., Apt. 14  
King City, OR 97223

and are quoting it in its entirety as follows:

*A Christmas card from Roy Clinthorn tells me that he still spends a few hours each week in*



Indiana Dental College basketball squad (1915): From left, seated—Frank Edwards, James R. Leve-ron, Trousseau P. Heck, Watson E. DeaKyne, Audria E. Long, Jack W. Redmond, II.; Middle row—Hez Clark (Coach), Dr. I. Lester Furnas (Faculty Manager), John S. Eilar, George L. Oyler, Noble R. Fox, Paul G. Miller, Clifton E. Donnell; Back row—Roscoe D. Garrison, Neal M. Loomis, Lee R. Newberger, Sylvan L. Mouser.

the office with prosthetic patients. Doesn't do restorations or extractions any more. He was planning to spend a couple of days on the License Review Board listening to the appeals of Eve's Escort Service, Zebone Adult Galleries, Fergie's Adult Book Store, Spanish Moon Massage Parlor and others. Sounds very interesting and should be stimulating.

Francis Reed, who still lives in Windsor, Vt., reports several trips to the hospital, one in intensive care, this past year. This was all due to radiation ten years ago. He is still fighting malignancy problems. Anyone who would like to write to him can do so at 166 State St. Windsor, Vermont 05089. He is able to get around and the picture he enclosed was appreciated.

Fred Fugazzi and his wife live in Seneca, S.C. Last year they celebrated their 50th wedding anniversary and had their sons and grandchildren with them to celebrate by having a sit-down dinner for 27. They enjoy going to Clemson football games as it is nearby. They always have a large garden and freeze the results of their efforts. Fred builds pieces of furniture and also restores old pieces. He sent a picture of a trundle bed he had built for some neighbors. It was a lovely piece and showed master craftsmanship. They planned to go to Delaware for the holidays. Had made two trips to Attica, Indiana and also one to the Soo to their old fishing camp. Apparently they are blessed with good health and fortunate they can accomplish so much. May it continue!

I hear from Harold Buser regularly. He enjoys his books; lives on a farm by himself and always gives me a report on his soy bean crop. He takes a lot of pictures and very often encloses one in his letter. Quite frequently he goes to Goodmans for the holidays. This year his planned trip was interrupted due to George's hospital confinement. Harold seems to be blessed with good health as he never mentions any ailments. His cooking must agree with him.

George Goodman has had quite a siege which started around Thanksgiving. He went into the hospital because of terrific pain in his hands but during the course of a physical exam they discovered an aneurism which was extremely close to bursting. Surgeons did an abdominal aortic aneurism by-pass operation. The pain in both hands was due to ganglions. They operated on one hand and as soon as he regains his strength he will return to the hospital for surgery on the other hand. He will regain about 60% feeling in one hand and 40% in the other. He had hiccoughs for 11 days which would sap a well person's strength. Any of you classmates that would like to send him a card, his address is 5502 Wooded Lake Dr., Louisville, Ky. 40299. Their son Joe lives close by so I'm sure he takes good care of him. We wish George well and hope the New Year will be a better one for him.

A card from Richard Fergusons, Richmond, Indiana, told of the success of his grandsons all of whom live in the East. He still spends a few days each week in his office.

A pleasant surprise recently, in a letter from George Hayworth. He sees Willard Stolting rather frequently as they live fairly close to each other. The Hayworths and Stolting had had a pleasant trip to Florida last year. Willard is not too well physically and we hope for an improvement in his health real soon. Hayworth reported having seen Muriel Robinson, Conley's widow, on a visit to Linton, Indiana to visit Conley's brother.

The Cochranes lead a very quiet life. . . I still have problems with skin cancers and recently had to have chemosurgery on four more places. We are so glad to be closer to our son and his family. We see our grandson frequently. He attends Mt. Hood Community College and commutes each day. Recently he received his private pilot's license, a dream fulfilled.

We enjoyed our night's visit with Cleona Harvey McCreight and her new husband, Don. They were enroute to Seattle.

*It was very nice to receive such a lovely Christmas greeting from Dr. and Mrs. John W. Ryan this year. Think this brings us up to date with some of the remaining members that I keep in touch with. . . Our best to you all in 1983.*

Marvin S. Cochrane

### **Class of 1933**

We are sorry to report the death of Dr. Hector E. Hickman on June 24, 1982.

### **Class of 1934**

We have received a change of address for

Dr. Richard G. Smith  
8024 Broadway  
Indianapolis, IN 46240

### **Class of 1938**

We are very sorry to report the death of Dr. Abraham Alpert.

### **Class of 1939**

We have received the newsletter for the Class of '39 dated January 1983, and just in case some of you did not receive yours, or did not have time to read it — here it is again - for your interest and for the interest of all the other classes, also. We all enjoy reading Dr. Carr's newsletter!

*The Fall Conference was a great success but was unusual because the Syracuse football game was a night game so we had our banquet a little early in order to see the game.*

*The conference was dedicated to Drex Boyd and we are proud to have him as an honorary member. Other honorary members present were: Dr. M.K. Hine, Dr. Ralph McDonald and Dr. Bill Gilmore. Pell also brought a guest from Brazil (Indiana). The other loyal classmates were Boren, Campbell, Carr, Davis, Harvey, Mintz, Vendes, Yoder, and Young. We had a great dinner in the Federal Room.*

*Campbells enjoyed seeing their daughter who is in school at Bloomington. Yoders spent time with their son's family.*

*I was reminded that Rutledge's name was left off of the roster list that I mailed last summer. His address is: 75 Gardendale Rd., Terre Haute, Indiana 47802 and 201 N. Ocean Blvd., Pompano Beach, Fla. 33062 Apt. 712 Sorry about the omission, Byron!*

*Harold Mintz had a coronary last November and had a quadruple bypass. Last I heard he was doing fine. He is on a good exercise program and sounded great when I talked to him on January 24th. His son is doing well in dental school and their daughter Mindy is a newscaster for Channel 6 in Indianapolis.*

*Manny Green is still busy and hopes to get down to the April Indiana Dental meeting.*

*Al Yoder is ready to retire and is looking for someone to buy his office.*

*I saw Campbell and Vendes at the ADA Meeting in Vegas. Walt and his wife took an extended trip after the meeting to visit relatives including: Mary R's twin sister and their mother near Phoenix and then to Calif. to visit an aunt and uncle; after the Vegas meeting they went to Tempe Ariz. to visit Mary R's kid sister and husband. Walt and Mary R. registered 1250 miles on a rented car.*

*Walt furnished some information on class numbers:*

*Harrold Mintz telephone no.*

*R. 219-836-5292*

*O. 219-398-2781*

*W.E. Prentice*

*812-265-5767*

*410 1/2 West St.*

*Madison IN 47250*

*Tilford Beck*

*473-3823*

*13 1/2 West 3rd*

*Peru, IN 46970*

*F.W. Gamble*

*O. 317-282-4774*

*R. 317-282-7859*

Sam Groher  
R. 203-966-0294  
44 Harrison Ave.  
New Canaan, Conn.

Julius Segal  
203-887-0788

Herman Lieberman  
O. 812-424-5277  
R. 812-477-0800

*Received some Christmas cards from classmates—Livingstons still enjoying Florida—sent their regards and mentioned that they are real proud of their granddaughter. Harry and Eva Whetstone are still traveling and enjoyed time in Scotland and Ireland (I think). Wilbur is still hunting but found the birds rather scarce this season.*

*I understand the class had a reunion at Sanibel Island this last fall. Those present were: Harvey, Campbell, Boyd and McDonald.*

*Hope to have an open house at the Hyatt during the April IDA meeting.*

*Keep me posted about any new news.*

Jack D. Carr

#### Class of 1940

Dr. F.K. Etter  
1709 Roscomore Rd.  
Los Angeles, CA 90024

sent the following note to the Alumni Bulletin Staff: *Again—thanks for the Fall Issue of the I.U.S.D. Alumni Bulletin. Great! Especially the photocopy of the 2-story out-house which I walked by many times! Hi to Sam Patterson, etc. I'll try to pop in in June when (if) I come back for my 50th anniversary at Tech High School in Indianapolis.*

#### Class of 1941

We are sorry to report the death of Dr. Lester H. Mosson, Lajolla, CA 8-17-82. And also the death of Dr. Byron E. Price of Terre Haute 5-28-82.

#### Class of 1942

We are sorry to announce the following deaths in this class:

Dr. Robert Nickels, passed away Dec. 4, 1982

Dr. Eugene F. Yoder, passed away June 15, 1982.

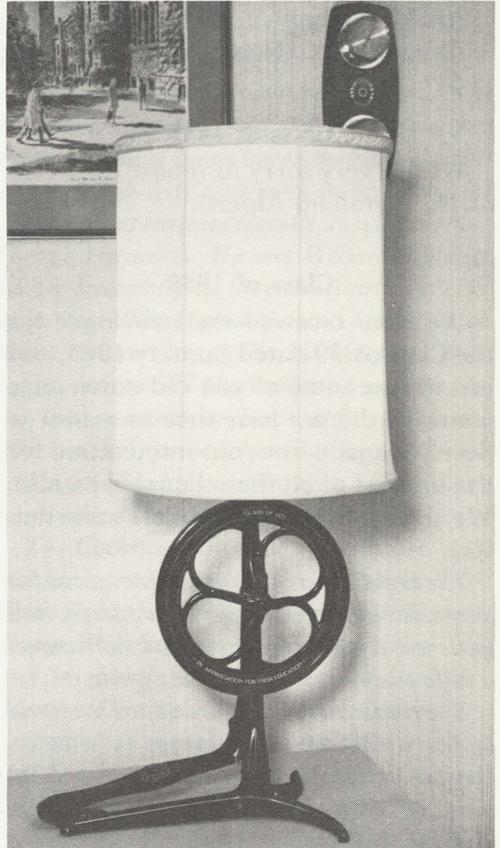
#### Class of 1943

We have a change of address for

Dr. Robert N. Berman  
5901 Washington Ave.  
Evansville, Indiana 47715

and for

Dr. William D. Micheli  
5317 Fallwood Dr. #110  
Indianapolis, Indiana 46220



This unusual table lamp, which Dr. Delmar R. Faun made out of an old dental foot engine, has been given to the School of Dentistry. In presenting the lamp to Dean Ralph E. McDonald, Dr. Faun said that when he entered Indiana Dental College in 1924, each student had to have his own foot-powered dental engine.

### Class of 1945

Dr. S. Miles Standish was honored at Methodist Hospital's Second Annual Seminar on "The Dentist's Role in Oral Cancer" by having the program dedicated to him. In a special program note, Dr. Standish was recognized "for his contributions as a clinician, educator, and leader in the field." Dr. Standish is Associate Dean for Graduate and Post-graduate Education and Chairman of Oral Diagnosis/Oral Medicine.

### Class of 1952

Dr. Hine shared with us a delightful Christmas greeting he received from the Harvey Jr. and Harvey Sr. Chong families. The greeting says, *we are reminded of your love, kindness and are thankful for the Christmas spirit shown to us throughout the years. 1982 was full of surprises and excitement for us . . . we visited Indiana twice; once for Harvey Jr.'s graduation from IUSD and another time to attend the wedding festivities of Harvey Jr. and Cheri Ann Kinder. Chuck is a junior at Occidental College. We visited him in May and enjoyed meeting his friends. Robert decided to live with us again and we're back to Cub Scouts, Boys Club, etc. However, Mayette and Carrie are still in Honolulu. With additional office staff, tutoring and Robert, life is hectic (but enjoyable) for Phyllis and she is looking forward to joining Harvey, Sr. in retirement in 18 months. Until then, Harvey Sr, and Harvey Jr. each works 36 hours weekly and fully utilize our office. Harvey, Sr. is busier than ever gardening, swimming, fishing, square dancing with Phyllis, serving as President of the Y.M.C.A. Board of Directors, etc. . . .*

*As another year passes, we all send our love, together with our best wishes of PROSPERITY, CONTENTMENT, GOOD HEALTH AND HAPPINESS, to you and yours. Merry Christmas and Happy New Year from the Chongs. The Harvey Chongs address is 1031 Kahoa Rd., Hilo, Hawaii 96720.*

We are sorry to report the death of Dr. Howard L. Weatherholt, San Jose, CA on July 22, 1982.

### Class of 1954

We have the following changes of address for this class:

Dr. Emery E. Alling  
923 Greyhound Pass  
Indianapolis, Indiana

Dr. Cecil F. Bachele  
P.O. Box 27B  
Pittsboro, Indiana 46167

Dr. Guthrie E. Carr  
41 Lafayette Bank & Trust Bldg.,  
Lafayette, Indiana 47901

Dr. Harry R. Kerr  
5699 East 71st Street  
Indianapolis, Indiana 46220

Dr. Owens Miller  
3737 N. Meridian Street  
Indianapolis, Indiana 46208

Dr. James H. Worster  
777 Broadway  
Anderson, Indiana 46012

### Class of 1955

We have a change of address for

Dr. Charles D. Hall  
2207 10th Ave.  
Vero Beach, CA 32960

And are sorry to report the death of Dr. Richard F. Walling of Thousand Oaks, California on May 5, 1982.

### Class of 1957

The Waldo Scales family  
160 Marine Street  
St. Augustine, Fla. 32084, again have sent us an interesting Christmas letter which we wish to share with you: *Greetings. Here it is another Christmas and you older ones remember when it took forever*

from one Christmas to another Christmas; but as you get older the time goes so fast and now it is Christmas time again. . . . All of our family has had a good year, and now about our family: Mother and I have been married 25 years now going on 26 years; I swear she doesn't look a day older. She may be a little harder to get along with and a little more set in her ways! . . . She works every day and I don't believe the office could operate without her . . . She says she is going to "quit" one of these days and I tell her when she quits, I quit. We have worked together all these years and gotten along—we do have a few words now and then, but Mama usually wins. What irritates me most is when Mama asks me something and then gets mad when I don't agree with her. I hope Mama keeps her health and lives to a ripe old age as we all love her and couldn't get along without her!

Jane is now 15 years old and a fully grown woman. She got her height and maturity at a young age and could easily pass for 21 years of age. She is a pretty good girl most of the time. She has tendencies toward being headstrong and wanting her own ways. Her mother says she acts just like her father, and if you don't mind a prejudiced opinion from her loving father, she is a beautiful girl. Jane's primary interest is boys, boys, boys. She is a sophomore in Jacksonville Episcopal High School . . . She still works with her music and loves her church.

James Raymond will soon be 20 years old. He is a sophomore at Flagler College, which he enjoys very much. He actually appreciates his education more than the other two because he's hungry for knowledge. As I have told you before, college is not easy for James Raymond but he is willing to go that extra mile and he is going to make it. He still loves his toys, such as his four-wheel drive Jeep, his automobile, etc. He has a nice little girl friend who he has gone with for several years. . . . He still wants to get through college and teach in a vocational school and with any kind of luck he will make it.

Bill is a senior at Jacksonville University, starting his last semester. On paper it is still possible for him to graduate cum laude if he

can hold his grade average to the end. He will graduate with good grades regardless of whether he makes this honor or not. . . . He still lives at home and drives back and forth every day. He has 246,000 miles on his car and he knows the car could make the trip alone without him. If nothing happens he will graduate in June with his undergraduate degree. He has worked very hard and long hours to get this degree, and we hope he will profit from the fruits of his labor. He hopes very much to go to dental school and follow in the footsteps of his father—I hope.

I am now 52 years old and have been in practice 25 years. I still enjoy it as much today as I did the day I started. I hope I live and can keep my health to teach Bill to do good dentistry . . . I still enjoy my heavy equipment and enjoy watching the boys operate it.

God bless you all

Waldo and Family

#### Class of 1962

We are sorry to report the death of Dr. Peter L. Shideler, North Judson, IN on June 10, 1982.

#### Class of 1965

It is with much regret that we announce the death of Dr. Robert A. Zager, of Martinsville, Indiana on July 4, 1982.

#### Class of 1966

We are also sorry to report the death of Dr. John T. Boyle, Anderson, IN on June 13, 1982.

We have a change of address for

Dr. John P. Nelson  
Box 610  
NUCLA, Colorado 81424

Dr. Byron Rutledge, Jr. was featured in the January 31st issue of the American Dental Association News. Accompanying the article was a picture of Dr. Rutledge standing outside his dental office, the only commercial solar building in Terre Haute, Indiana. Dr. Rutledge recently received a local chamber of commerce award for the building. Dr. Rut-



A look at the Alumni Hospitality Room in Chicago.



ledge's address is 2499 Margaret Ave.,  
Terre Haute, IN 47802.

#### **Class of 1967**

We have a change of address for:

Dr. John H. Steel  
14185 Vereda Del. Portal  
Salinas, CA 93908

Also a change of address for

Dr. Thomas Wells  
6405 Colgate  
Anchorage, Alaska 99504

#### **Class of 1968**

We are sorry to report the death of Dr.  
John Kneipple on January 2, 1982.

#### **Class of 1969**

We have a change of address for:

Dr. Robert D. Holm  
9515 Crystal Lake Dr.  
Woodinville, Washington 98072

#### **Class of 1970**

We have just been informed that Dr.  
Howard Beastall, whose address is 1042  
Morio Road, Fallbrook, California  
92028, is working at Camp Pendleton as  
head of the Oral Surgery Department at  
the main clinic. In June he will be going  
to the U.S.S. Kitty Hawk as a dental de-  
partment head. This will be a 2-year tour  
and there are some good and some bad  
things about it; his wife and the girls are  
going to stay in Fallbrook and he hopes  
when he returns to get on the staff of one  
of the hospitals in this area.

Sue is working for an optometrist and  
keeping quite busy with the two girls to  
take care of. She sent their good wishes to  
all.

#### **Class of 1971**

We have address changes for:

Dr. Michael J. Scheidt  
89th Medical Detachment  
APO, New York 09102

Dr. John R. Sisk  
2606 Wildwood Drive  
Jeffersonville, Indiana 47130

#### **Class of 1972**

Dr. Robert Sexton, Assistant Professor of  
Oral and Maxillofacial Surgery, pre-  
sented a lecture during a seminar on  
"The Dentist's Role in Oral Cancer" at  
Methodist Hospital in Indianapolis.

#### **Class of 1974**

We have a change of address for:

Dr. Theodore L. Gehrig  
2912 N. Commonwealth #5A  
Chicago, Illinois 60657

Dr. William H. Stalker  
SHAPE Dental  
APO, New York 09055

Dr. Randolph W. Sturrup (M.S.D.)  
6735 Cypress Point  
Houston, Texas 77069

#### **Class of 1975**

We have a change of address for:

Dr. Vivian L. Ong  
1822 Marcheeta Pl.  
Los Angeles, CA 90069

Dr. Robert B. Booher  
62 S. Girls School Rd.  
Indianapolis, Indiana 46231

Dr. Sammy J. Euler  
630 Plaza Drive  
Evansville, Indiana 47715

Dr. Daniel W. Fridh  
 1200 Andrew Ave.  
 LaPorte, Indiana 46350

Dr. Mary Beth Johns has been appointed team dentist for the Phoenix, AZ pro football squad in the new U.S. Football League. Dr. Johns also serves as associate director of the cheer leading corps. Dr. Johns' address is 6767 N. 7th St., #110, Phoenix, AZ 85014.

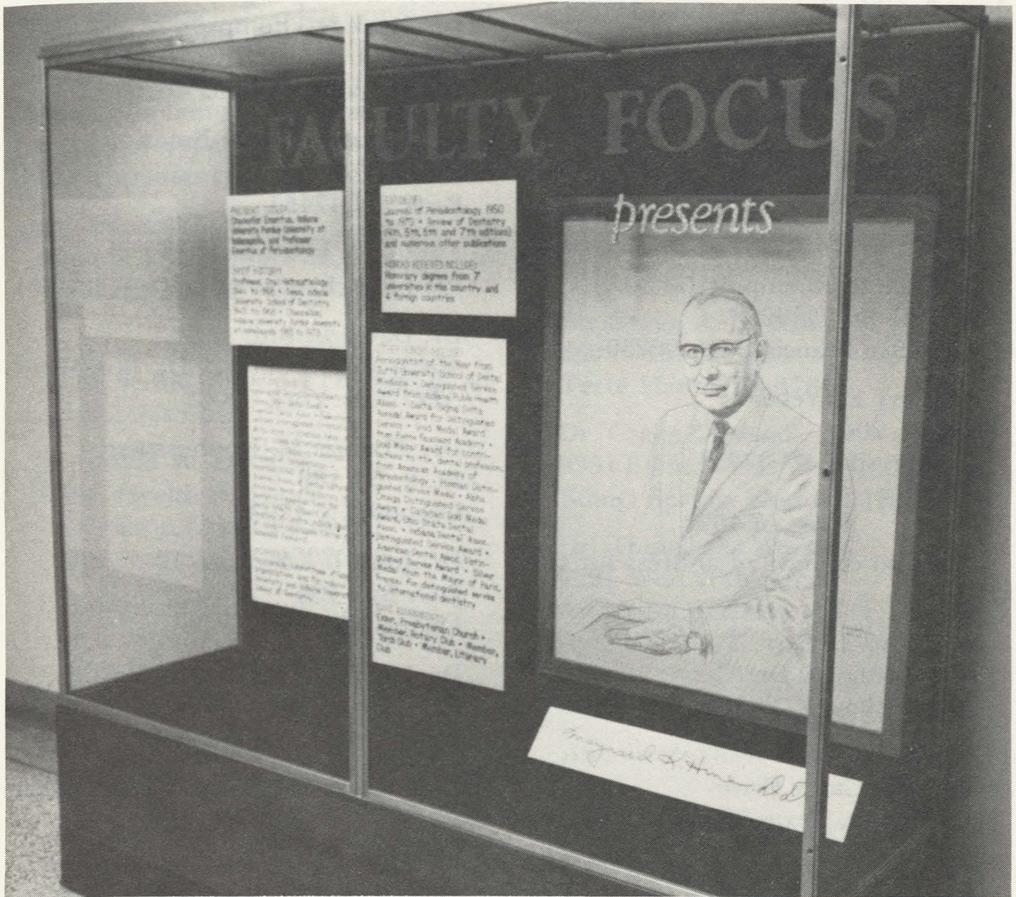
In a note received from Dr. and Mrs. Marvin Cochran they reported an article about Dr. Vaughn Wedeking. The article said he had practiced in Florida for three years prior to coming to Oregon. He was from Evansville, Indiana

and had attended Jacksonville University and played basketball before entering Dental School. The Cochranes said in case we did not have a current address for him his office is at 9053 S.W. Beaverton Hillsdale Hwy., Beaverton, Oregon 97005 and his residence is 12415 N.W. Haskell Court, Beaverton, Oregon 97005. We were glad to receive this note from the Cochranes—be assured we will see that our records show the proper address! And thank you!

**Class of 1976**

We have a change of address for:

Dr. James R. Nicholson



"Faculty Focus" is the name of a new exhibit which is on view in a case near the Michigan Street entrance of the Dental Building. The display is designed to acquaint students and others with the careers and contributions of faculty members. Dr. Maynard K. Hine, former Dean who is now Chancellor Emeritus of IUPUI and Professor Emeritus of Periodontics, is the first subject of "Faculty Focus." The exhibit was planned and executed by the Dental Art Department under the direction of Dr. Rolando A. DeCastro.

Eastgate  
Dent. Arts Bldg.  
141 N. Shortridge Road  
Indianapolis, Indiana 46219

And for:

Dr. Neville W. Richter  
4218 181st Ave. Southeast  
Bellevue, Washington 98008

And for:

Dr. Jeannie M. Vickery  
723 57th St. S.W. #328  
Calgary, Alberta, Canada T2V 4Z3

#### **Class of 1977**

We have the following changes of address for this class:

Dr. James R. Hull  
3772 N. Tillotson  
Muncie, IN 47304

Dr. Michael G. Kelley  
7607 Allisonville Road  
Indianapolis, Indiana 46250

Dr. Dale R. Ruemping (M.S.D.)  
PSC #1 Bx 23499  
APO, San Francisco CA 96230

Dr. Gary E. Weber  
321 W. 20th  
Connerville, IN 47331

#### **Class of 1978**

And also changes of address for this class:

Dr. David L. Carr  
5814 Pettigrew Dr.  
Fayetteville, NC 28304

Dr. Karl F. Frey  
1622 Ed. Carey Drive  
Harlington, Texas 78550

and

127 E. Price Rd.  
Brownsville, TX 78520

Dr. Deborah Howerton  
610 Paddy Run  
Clarksville, TN 37040

Dr. Charles H. Keever  
P.O. Box 20112  
Indianapolis, IN 46220

Dr. George E. Kirtley  
6360 Bayside S. Dr.  
Indianapolis, IN 46250

Dr. Anita C. Murray  
238 Gage Blvd. #605  
Topeka, Kansas 66606

Dr. Michael D. Smith  
11405 Antler Ln  
Austin, Texas 78750

Dr. George D. Tarquinio (M.S.D.)  
Naval Regional Dental Center  
Pensacola, Florida 32508

Dr. Mark I. Thompson  
4111 Oil Creek Drive  
Indianapolis, Indiana 46268

Dr. Michael K. Van Emon  
Route 2  
Paoli, IN 47454

#### **Class of 1979**

We have changes of address for:

Dr. David L. Judy  
464th Med. Dent. (DSD), Box 1048  
APO New York 09067

Dr. Thomas M. Konnersman  
Rt. 2, Bx 186  
Osgood, IN 47037

Dr. John J. Kussmaul  
P.O. Box 486  
Loring AFB, ME 04751

Dr. Lawrence Eugene Miller  
Rt. 2, Box 506/Old Vincennes Rd.  
New Albany, IN 47150

And we received the NICEST note from

Dr. and Mrs. R. Orlandi-Alvarez  
6880 W. Fairfield Dr., #45  
Pensacola, FL 32506

announcing the birth of their first child, Carlos David, born December 8, 1982. The proud father and mother report that they are both very thrilled, of

course. Pat received the RDH in 1978. We all are thrilled right along with you, and wish you the very best in this start of your family!

And here are a few more address changes:

Dr. Thomas R. Peters  
50 Chelsea Hills Drive, #10  
Benicia, California 94510

Dr. Joe M. Poland  
1602 Kessler Blvd. N. Drive  
Indianapolis, IN 46208

Dr. George P. Willis, Assistant Professor of Dental Practice Administration, was featured in Dan Carpenter's column in the Indianapolis Star last summer with an account of a six-hour root-canal procedure that he performed on three canines of a lion at the Columbian Park Zoo in Lafayette. (George's own story about it appears elsewhere in this issue.)

Dr. Randall D.J. Yee  
1063 E. Lower Main St., Apt. 221  
Wailuku, Hawaii 96793

#### **Class of 1980**

We have the following changes of address for this class:

Dr. David W. Douglas  
Rural Health Activities  
605 Wilson Creek Road  
Lawrenceburg, IN 47025

Dr. Thomas M. Kennedy  
832 Montclair  
Madison, IN 47250

Dr. Terrence S. McDermott  
761 W. U.S. Highway 30  
Valparaiso, Indiana 46383

Dr. John W. Reichle  
R.R. 8, 1417 Country Club Road  
Connersville, IN 47331

Dr. Jeanette D. Sabir  
3074 N. Pennsylvania  
Indianapolis, Indiana 46025

Dr. Rachelle L. Shaw  
San Gabriel Plaza  
3900 Eubank N.E. S-2  
Albuquerque, New Mexico

Dr. David Wiener  
Apt. 2B, 9114 Bryant Ct.  
Indianapolis, Indiana

#### **Class of 1981**

More address changes.

Dr. David W. Bolinger  
2216 Point West Drive #3D  
Fort Wayne, IN 46808

Dr. Mark Hinman  
1976 Juno Road  
Juno, Florida 33408

Dr. Sidney S.F. Martin  
7525 N.W. 17 Street  
Plantation, Florida 33313

Dr. Sara J. Plaiss  
2227 Spring Ave., #10  
New Albany, Indiana 47150

Dr. Gregg A. Sweeney  
600 S. 4th St., #34  
Terre Haute, IN 47807

Dr. Craig C. Wood  
8951 Bonita Beach Road, S.E., Suite E  
Bonita Spring, Florida 33923

Dr. Thomas E. Worster  
4521 West 25th Street  
Anderson, Indiana 46011

#### **Class of 1982**

And we also have these changes of address:

Dr. Timothy J. Alford  
P.O. Box 384  
Lynn, IN 47355

Dr. Jay R. Beagle  
151 Todds Rd. #249  
Lexington, Ky. 40509

Dr. Diane M. Buyer  
4350 N. Franklin Road  
Indianapolis, IN 46226

Dr. Roger W. England  
R.R. 14, Box 492  
Bedford, Indiana 47421

Dr. Vincent M. Guido  
3132 Court House Dr. #2C  
West Lafayette, IN 47906

Dr. Jill Jones  
3351 W. 34th St. #C  
Indianapolis, IN 46222

Dr. Kurt Kingseed  
1701 S. Webster  
Kokomo, IN 46902

Dr. Joseph P. Manley  
3256 Eden Park  
Carmel, Indiana 46032

Dr. Jerry Rinehart  
6049 Tall Willow Dr.  
Memphis, TN 38114

Dr. Randolph S. Shaw  
3512 Northside Blvd.  
South Bend, IN 46615

Dr. Jack J. Wehrly  
10512 Brandywine Dr.  
Fort Wayne, IN 46825

### Some more changes of address!

We are sorry we received these address changes too late to include in the proper classes. But here they are:

### Class of

1917: Dr. Edwin T. Foster  
General Delivery % Amendola  
Ashfield, MA 01330



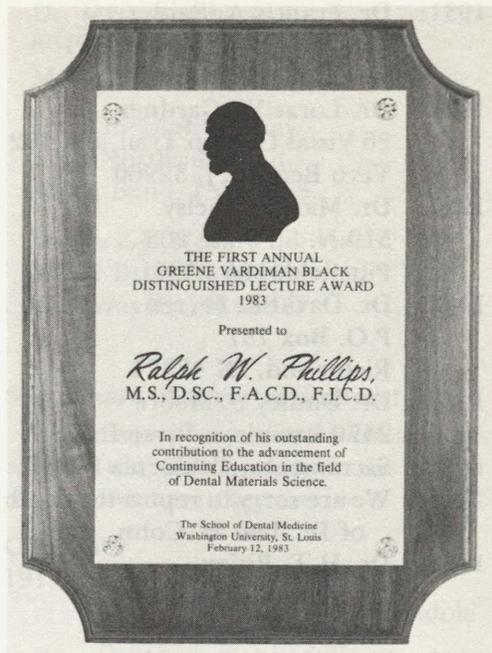
Recipients of scholarships from the Dr. Stephen D. Slavin Memorial Fund for 1982 were congratulated by Mrs. Linda Slavin Needham (fifth from left) at a ceremony in the School of Dentistry. The recipients are, from left: Karen Hays, Jaime Lemna, Douglas Stanley, Nancy Humbarger, Kevin Klinedinst, Daniel Wheeler, David Harrison, and Scott Trout. All scholarship recipients are students at IUSD and former students of Muncie high schools. The fund was established several years ago in memory of Dr. Slavin, a 1967 graduate. Prior to his accidental death in 1975, he practiced in Muncie and served on the Muncie Community School Board. This fund is perpetuated through memorial gifts, and the Memorial Board hopes that additional gifts will be made to permit the selection of other recipients next year.

- 1931: Dr. Francis A. Reid  
166 State Street, Box 184  
Windsor, VT 05089
- 1937: Dr. Loras W. Gardner  
26 Vistas Garden Trail, apt. 102  
Vero Beach, FL 32960
- 1937: Dr. Michael Shelsy  
510 N. St. Suite 208  
Pittsfield, MA 01201
- 1943: Dr. David L. Ferrell  
P.O. Box 757  
Richmond, IN 47374
- 1944: Dr. Dudley S. Moore  
2470 American River Drive  
Sacramento, California 95827
- 1945: We are sorry to report the death  
of Dr. Leo M. Cohn.
- 1950: Dr. H.T. Risley  
2719 N. Rockford Ct.  
Kokomo, IN 46902
- 1952: Dr. Odus L. Balbridge  
6042 Westknoll Bldg., 42 #544  
Flint, Michigan 48507
- 1958: Dr. Ralph E. Beatty  
30 E. Main St., #5  
Carmel, IN 46032
- 1959: Dr. James Felder  
1637 Portage Ave.  
South Bend, IN 46616
- 1962: Dr. James A. Ford  
6016 S. Hohman Ave.  
Hammond, IN 46324
- 1962: Dr. Michael Hopping  
1143 Moorestown Circle  
Decatur, Georgia 30033
- 1964: Dr. James P. McKnight (M.S.D.)  
279 Buena Vista Place  
Memphis, Tennessee 38127
- 1965: Dr. Jan L. Silagi  
1635 Lee Trevino #A  
El Paso, Texas 79936
- 1966: Dr. Carl J. Andres  
PSC 3 Box 16064  
APO San Francisco, CA 96432
- 1967: Dr. Mark F. Miller  
% Dental Care, Inc.  
1521 Rockford Ct.  
Kokomo, IN 46902
- Class of**
- 1968: Dr. Stephen F. Cullison  
R.R. 1  
Bemtone, IN 46539
- 1970: Dr. G.P. Aitkens  
% ARAMCO, UDHAILIYAH  
Saudi Arabia
- 1970: Dr. Stephen L. Nelson  
50700 Woodbury Way  
Grainer, IN 46530
- 1971: Dr. Steve Davis  
315 N. Elm St.  
High Point, NC 27260
- 1971: Dr. Thomas A. Johnson  
Rt. 1, Box 88A-10  
Tifton, Georgia 31794
- 1971: Dr. Arthur S. Roberts  
203 W. Washington  
Shelbyville, IN 46176
- 1973: Dr. Mark W. Bantz  
820 E. Colfax  
South Bend, IN 46617
- 1973: Dr. Richard D. Ellsworth  
42 Thise Court  
Lafayette, IN 47905
- 1973: Dr. Stephen O. Raibley  
4254 Zenith Avenue, South  
Minneapolis, MN 55410
- 1974: Dr. David F. Pascoe  
P.O. Box 962  
Cutchoque, New York 11935
- 1974: Dr. Gary L. Plymale  
2517 Indigo Drive  
Dunedin, Florida 33528
- 1974: Dr. Richard R. Rutkowski  
R.R. 2, 64351 S. Hickory  
Bremen, IN 46506
- 1976: Dr. Neville W. Richter  
10809 SE 17th St.  
Bellevue, Washington 98004
- 1977: Dr. Robert D. Branstrator  
566 Dover Road  
Tequesta, Florida 33548
- 1977: Dr. John V. Edwards  
P.O. Box 5914  
Winston Salem, NC 27109

- 1978: Dr. Leslie H. Brooks  
9338 Lamerton  
San Antonio, Texas 78250
- 1978: Dr. David M. Fairchild  
905 Heritage Ct., #302  
Crown Point, IN 46307
- 1978: Dr. Alex M. Kordis  
241-6 Country Club Dr.  
Concord, North Carolina 28025

**Class of**

- 1979: Dr. Michael E. Goodman  
4308 Dahlia Ct.  
Indianapolis, IN 46220
- 1979: Dr. Matthew B. Logman  
251 173rd St.  
Hammond, IN 46324
- 1980: Dr. Lawrence N. Fortress  
7202 Forest Park Dr.  
Indianapolis, IN 46217
- 1980: Dr. Raymond J. Wise  
40 Laurel Ave.  
Lee, MA 01238
- 1981: Dr. D. Craig Fitch  
2022 S. Freeman  
Oceanside, CA 92054
- 1981: Dr. D. Kevin Hogan  
1948 Ringle Road  
Caro, MI 48723
- 1981: Dr. David J. Howell  
1343 Whitewater  
Memphis TN 38117
- 1981: Dr. Michael A. Pitt  
E. South Street, P.O. Box 187  
New Harmony, IN 47631
- 1982: Dr. Joyce E. Coats  
105 Braeburn Dr., St. Andrews  
Sub  
Ocean Springs, MS 39564
- 1982: Dr. Mary M. Eichler  
1660 N. LaSalle #312  
Chicago, IL 60606
- 1982: Dr. Michael E. Keller  
R. 1, Box 327 A  
Milltown, IN 47145
- 1982: Dr. Mark R. Montgomery  
903 Tekulve Rd., #1  
Batesville, IN 47006



This plaque was recently presented to Dr. Ralph W. Phillips, Associate Dean for Research at the Indiana University School of Dentistry, by the Washington University School of Dental Medicine. The plaque, representing the new G.V. Black Distinguished Lecture Award, honors Dr. Phillips' achievements in Dental Materials research.

**ANIMAL DENTISTRY**

*(continued from page 22)*

off quickly. Instead of awakening, however, he clamped his mouth shut and went into violent convulsions. It took about five people to keep him from flipping himself off of the table. After about 15 seconds he settled down and we proceeded. This happened three times during the procedure, and was pretty startling each time it occurred!

According to post-op evaluations from both veterinarians, all of the "patients" are doing better than ever. Although I did not use conventional endodontic therapy, this technique seemed to work quite well for canal lengths of 80-90 mm and a one-time appointment situation. I have enjoyed my initiation into animal dentistry and will continue to be active in this new and growing area.

# IU Dental Student Wins Award in Cartoon Contest

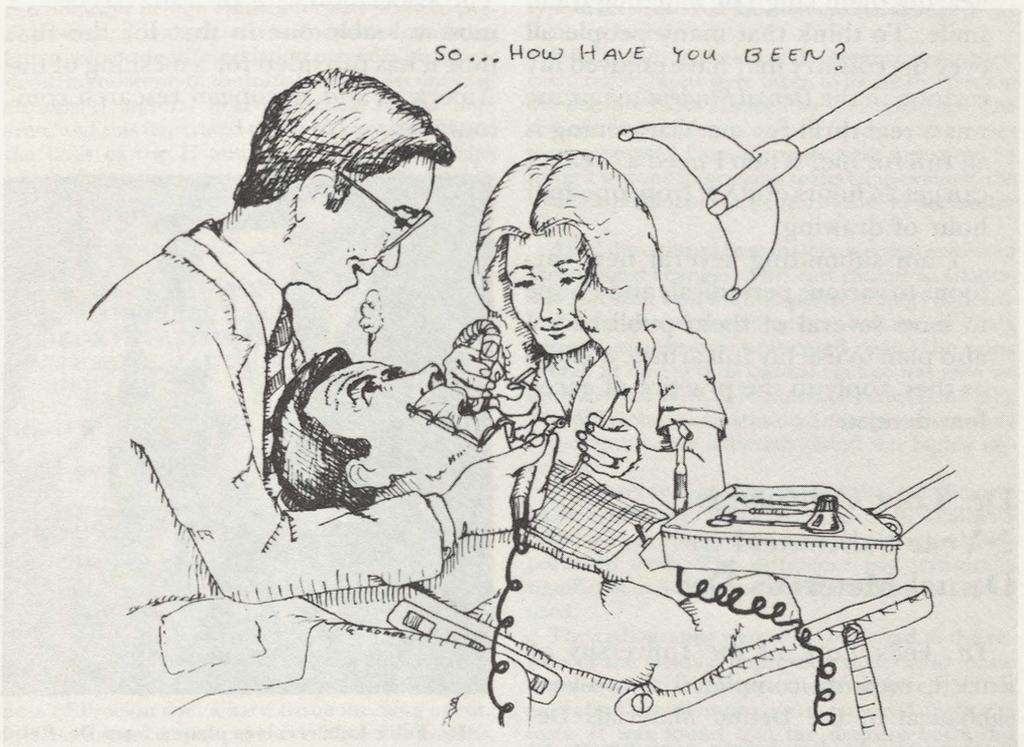
Second year dental student Mark Gardner, who pursues cartooning as a hobby, recently won first prize for the cartoon he submitted to a cartoon contest featured in the *Dental Student*. The winning cartoon, along with a photo and biographical sketch on Mr. Gardner, appeared in the January issue of the magazine. He has been commissioned to do a cartoon ad for the Sagamore (the IUPUI student newspaper) soon. In an interview with the School of Dentistry Newsletter, Mark offered these observations on art and dentistry:

For as long as I can remember, I've been interested in art of all kinds. I have very fond memories of coloring

with my mother and my two brothers. My interest in drawing cartoons came in college, when my first roommate showed me some of the cartoons he had done. I had not thought about cartooning until then and I was impressed, so I tried it.

Unger's cartoon, *Herman*, is one that I really admire. Davis' *Garfield* is a recent discovery for me, and a cartoon I always enjoy. I have not tried to emulate anyone's style but I do appreciate the humor as well as the art work of each of these cartoonists.

I feel that my artistic skills have greatly affected the way I approach dentistry. The reason, or one of the



A recent Mark Gardner cartoon.

reasons why I chose dentistry over research and medicine in my senior year at IU, was because I saw that much of what a dentist does is artistic in some ways. Having already been trained to be aware of angles, varying lengths of lines, thinking in three dimensions and harmony of shapes and colors, gave me an advantage in learning many of the skills involved in dentistry. I have always likened a surgical procedure that is well done to a beautiful piece of music that is well orchestrated, or a masterpiece of art work.

My style is a very realistic one. What makes my art work unique, I suppose, is that I translate what I perceive into my work. We all perceive things differently and if my work is unique it is because it reflects what I see.

Sometimes a cartoon comes first and dictates the obvious caption and sometimes I draw the cartoon to fit a funny line. If people enjoy my cartoons, I get a lot of satisfaction from hearing them laugh or watching them smile. To think that many people all over the country may have enjoyed my cartoon in the *Dental Student* magazine was a real thrill for me. Cartooning is *all* fun for me. When I need a break, I can get 24 hours of R&R from one-half hour of drawing!

I am submitting several new cartoons to various periodicals and I hope to have several of them published. I also plan to use my full artistic abilities as they apply to the practice of excellent dentistry.

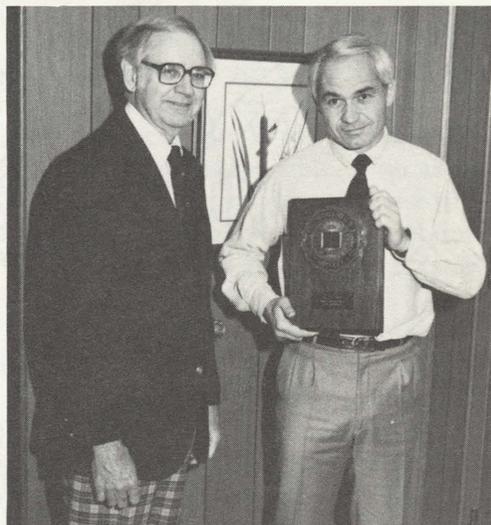
## Dr. Lutz Completes 2-Year Sabbatical in Dental Materials Dept.

Dr. Felix Lutz, of the University of Zurich, recently completed a two-year sabbatical in the Dental Materials Department. At his home university in Switzerland Dr. Lutz holds the faculty

position of Senior Assistant in the Department of Cariology, Periodontology and Preventive Dentistry. The chairman of that department is Professor Hans Mühlemann, a leading authority on dental caries.

Dr. Lutz himself is a world authority, in the field of composite resin systems. It is well known in the profession that no other area of restorative dentistry has seen such a transition with the advent of the visible light cured and microfilled systems. Dr. Lutz's chief mission at Indiana has been to correlate laboratory data with quantitative clinical results with the current and potential posterior composites.

A series of papers have been submitted for publication dealing with the results of this research and establishing a new and promising classification system for composites. These papers are co-authored with Associate Dean Ralph W. Phillips and, in several cases, Dr. James Setcos from the Dental Materials Department. The association with Dr. Lutz has been a most valuable one in that for the first time it has provided for a meshing of the American and European research communities.



Dr. Felix Lutz receives plaque from Dr. Ralph W. Phillips upon completion of sabbatical at IUSD.

## Abstracts of Theses by Graduate Students

### ALTERED H ANTIGEN REACTIVITY AS AN EARLY INDICATOR OF MALIGNANT TRANSFORMATION IN ORAL EPITHELIUM

Paul L. Auclair

This study was undertaken to determine whether or not the blood group H antigen reactivity of oral epithelium has any value in predicting malignant transformation. Tissue from three groups of patients was studied retrospectively utilizing an immunoperoxidase technique. From each patient two biopsy specimens obtained at different times, but from the same site, were investigated for the presence of H antigen. Group I consisted of patients in which the initial biopsy was histologically benign but in which the subsequent biopsy revealed epidermoid carcinoma. The initial biopsies in Groups II and III both histologically revealed epithelial dysplasia, but whereas the subsequent biopsy in Group II revealed carcinoma, the subsequent biopsy in Group III remained non-invasive. Normal epithelium was also studied.

The results demonstrated that in normal epithelium H antigen negative cells are rarely seen, but in the initial histologically benign specimens of Group I 81 per cent showed negative areas. Therefore it was concluded that altered H antigen reactivity in histologically benign epithelium may serve to predict eventual malignant transformation, and that immunologic dedifferentiation precedes histologic dedifferentiation. In the initial biopsy specimens of Groups II and III nearly identical results were seen, and this illustrated that it was not possible on the basis of the H antigen reactivity to predict which dysplastic lesions will progress to epidermoid carcinoma.

### AN IN VIVO STUDY OF THE USE OF A NONRESORBABLE CERAMIC HYDROXYAPATITE AS AN ALLOPLASTIC GRAFT MATERIAL IN PERIAPICAL SURGERY

Robert J. Beck-Coon

The purpose of this study was to evaluate the hard tissue response to a hydroxyapatite alloplast and the speed and quality of the bony fill following endodontic treatment and periapical surgery.

Thirty eight root canals in each of two monkeys (*Macaca Speciosa*) were endodontically treated and apicoectomies performed, leaving bony defects at the apex of each root. The surgical sites were either packed with the Durapatite ceramic or allowed to fill with blood. Each animal received at least one dose of Procion dye, a hard tissue marking agent.

After experimental periods of 2 and 6-months, the apices were examined clinically, radiographically and histologically. The histologic

examination included light and fluorescent microscopy of unstained slides for Procion labelling.

The ceramic material was well tolerated clinically with no gross evidence of inflammation or rejection. All surgical sites healed rapidly with no visible or palpable difference between experimental and control sites.

Histologically, Durapatite was biocompatible, with no evidence of inflammation. Healing of the experimental sites consisted of an initial investment in connective tissue followed by the eventual replacement with bone. In spite of the excellent biocompatibility of Durapatite, its use in periapical defects appeared to retard the natural healing process. Although the ceramic eventually became entrapped in bone, without an intervening layer of connective tissue, there was a significantly greater amount of new bone in control sites.

### DIMENSIONAL CHANGE OF DIFFERENT DENTURE BASE MATERIALS USING DIFFERENT TYPES OF ARTIFICIAL TEETH

Orlando L. Cayetano

This in vitro investigation compared the degree of dimensional change of denture bases constructed from conventional heat-cured resin, two brands of 20-minute-boil resin, and autopolymerizing resin.

The investigation also evaluated the effect of type of teeth used on the dimensional change in the denture bases.

Prior to the separation of the dentures from their casts, radiographs were taken to locate the areas in the denture bases affected by these changes. The dimensional changes occurring after the bases were separated from the casts were measured by using a silicone impression material to evaluate the total adaptation of the denture bases to the master die.

All of the denture base materials tested exhibited dimensional changes. The least change in adaptation was seen with the autopolymerizing resin, followed by one of the 20-minute-boil resins (Coe), and the conventional heat-cured resin. The worst overall fit due to dimensional change was seen on the other brand of 20-minute-boil resin (Dentsply). The difference in dimensional change between any two denture base materials tested was highly significant.

The investigation also showed that the denture bases containing plastic artificial teeth exhibited better adaptation on the master die than those with porcelain teeth. The difference was statistically significant irrespective of the denture base material used.

The radiographs were also compared to the results of the residual impression material to locate the dimensional changes which occurred before and after the dentures were removed from the casts. It was found that the denture bases did change in dimension when separated from the casts.

## THE EFFECT OF SOLDERING AND GLAZING ON THE MARGINAL ADAPTATION OF THE COLLARLESS METAL-CERAMIC CROWN

John A. Ianzano

The effect of soldering and glazing on the marginal fit of 40 collarless crowns was investigated. The crowns were constructed with the platinum foil technique and were divided into four equal groups. The groups were glazed or post-ceramically soldered with either the foil matrix in place or removed.

An additional 10 collarless crowns were constructed with the correction powder technique and the change in marginal fit due to soldering was examined.

The crowns were sectioned and the marginal fit evaluated using a comparator microscope.

The 10 crowns which were glazed with the foil in place showed a significantly better fit than the 10 that were glazed with the foil matrix removed.

There was no significant change in marginal fit when the crowns were post-ceramically soldered either with the foil matrix in place or without the foil matrix.

The crowns that had the marginal area replaced with correction powder showed no difference in marginal fit due to post-ceramic soldering.

## AN EVALUATION OF THE EFFECT OF HYDROXYAPATITE AND DECALCIFIED DENTIN ON THE HEALING OF RAT PARIETAL BONE DEFECTS

Michael J. Kasle

This study evaluated the effect of hydroxyapatite and decalcified dentin on healing of surgically created defects in rat calvaria. Forty male Wistar rats were divided into two equal groups. One group was implanted with hydroxyapatite crystals, the other with decalcified dentin. Each animal had two defects created, one in each parietal bone. One defect served as the implant site, the other as a control. The animals were sacrificed at one, four, eight, and twelve weeks after surgery. Histologic sections were prepared and examined microscopically. No new bone was seen in the one-week specimens except one control. All defects receiving hydroxyapatite showed severe foreign body reactions, and over the 12-week period most implant crystals were removed by multinucleated giant cells. Only slight new bone was seen within the defects at any interval. Defects receiving decalcified dentin, and control defects showed new bone formation at the four-, eight- and twelve-week intervals. No difference could be observed in the rate of new bone formation.

It was concluded that the hydroxyapatite as used in this study with gas sterilization was detrimental to healing of the defects, and that decalcified dentin appeared to be osteoconductive rather than osteoinductive and did not improve the rate of healing.

## THE NEUROTROPHIC INFLUENCE ON CRANIOFACIAL DEVELOPMENT SUBSEQUENT TO *IN UTERO* UNILATERAL TRANSECTION OF THE TRIGEMINAL(V) NERVE

John Stephen Kishibay

Transection of the root (sensory and motor) of the trigeminal(V) nerve and/or Gasserian ganglion was produced unilaterally in Long-Evans rat fetuses *in utero* at 17.5, 18.5, and 19.5 days of gestation to delineate the role of the trigeminal(V) nerve in the regulation of cellular differentiation, tissue morphogenesis, subsequent development and growth, and maintenance of the craniofacial complex. This research is believed to be the first time that such a procedure has been attempted on a mammalian fetus.

Each animal was clinically evaluated and then sacrificed at specific intervals between birth and 75 days postnatally. Methods of evaluation included gross observations of physical appearance and neurological condition, histology (i.e., light microscopy), cephalograms, and ossified tissue straining of whole specimens.

Transection of the trigeminal(V) nerve did *not* result in an absence or inhibition of morphogenesis and development of the craniofacial elements (i.e., skeletal). The results indicate that attainment of cellular differentiation and fundamental form of skeletal elements, including the temporomandibular joint, are inherent (i.e., genetic) and independent of both functional demand and biomechanical factors. Normal growth and maturation of the skeletal components were achieved without neural innervation; however, maintenance of the functional skeletal form, of the proliferating progenitor cells of the secondary cartilage of the temporomandibular joint, and of minor skeletal morphogenetic features (e.g., origin and insertion of muscle) were at least partially dependent upon the presence of functional musculature and local mechanical stimuli. Since development and subsequent growth of the mandible did occur without neuromuscular innervation, the secondary cartilage of the temporomandibular joint probably constitutes a center of adaptive and compensatory growth. Even though the neuromuscular junctions (i.e., motor) were prevented from normally developing after birth, no craniofacial asymmetries were noted at 1 day postnatally. Expected craniofacial asymmetries of muscle mass and skeletal elements did result after 14 days postnatally due to abnormal functional compensation from a developing occlusion. Animals with transection of both the root and Gasserian ganglion of the trigeminal(V) nerve were not distinguishable clinically or histologically from those animals exhibiting only the transection of the root. The lack of neural innervation appeared to have no discernible effect on the initiation of tooth germ tissues in specific tissue interactions, the synthesis of extracellular matrices of hard and soft dental tissues, the spatial relationship of tooth germs in alveolar bone, the development of the periodontium, and the process of eruption.

The trigeminal(V) nerve does *not* directly influence or regulate the primary initiation, spatial positioning, cellular differentiation, tissue morphogenesis or fundamental form, development, and subsequent growth of skeletal tissues; therefore, it is *not a major mechanism* of regulation of craniofacial skeletal morphogenesis and development.

#### **A COMPARISON OF THE PHYSICAL PROPERTIES OF ROOM TEMPERATURE VULCANIZING SILICONE MDX 4-4210 AND ROOM TEMPERATURE VULCANIZING SILICONE MODIFIED WITH DOW CORNING 360 MEDICAL FLUID**

**Hagop J. Kouyoumdjian**

The room temperature vulcanizing silicone MDX 4-4210 and this silicone modified with an addition of 5%, 10%, 15% 360 Medical Fluid 100cs were tested within two weeks of vulcanization for the following physical properties: tensile strength, ultimate elongation (ASTM d412, Die C), tear resistance (ASTM D624, Die C) and Shore A Durometer hardness (ASTM D2240).

The results were subjected to the analysis of variance or the Welch Test. The Newman-Keul's sequential range test was used for individual comparisons. Linear regression analysis was also carried out on the data for each property as a function of the amount of 360 M.F. added.

The study showed that the initial mechanical properties of R.T.V. silicone were superior to those of R.T.V. silicone modified with 5%, 10% and 15% 360 M.F. except for hardness.

The values for each property measured were found to decrease linearly with the amount of 360 M.F. added. If additional softness is desired, it can be achieved with the addition of 360 M.F. to R.T.V. silicone at the expense of decreased strength, elongation and tear resistance. Even with the addition of 15% 360 M.F., the values for tear resistance and elongation were within the "Lewis Standards" range. The tensile strength of unmodified R.T.V. silicone fell below the "Lewis" values.

#### **THOMSEN-FRIEDENREICH ANTIGEN IN SALIVARY GLAND NEOPLASMS**

**Lee J. Slater**

This study investigated whether an avidin-biotin-peroxidase technique which indicated the tissue distribution of a putative carcinoma-associated antigen, Thomsen-Friedenreich antigen (TF antigen), could be used to distinguish benign salivary gland neoplasms from malignant ones. Thirty benign neoplasms (15 pleomorphic adenomas and 15 monomorphic adenomas) were compared to 30 malignant neoplasms (15 adenoid cystic carcinomas and 15 adenocarcinomas, not otherwise classifiable.)

The results indicated that the presence and distribution of TF antigen were essentially the same in benign and malignant salivary gland neoplasms. TF antigen apparently is not a carcinoma-associated antigen in salivary gland tissue.

#### **A COMPARATIVE EVALUATION OF THE CONSTRUCTION AND MARGINAL ADAPTATION OF THE COLLARLESS METAL-CERAMIC CROWN**

**Anthony J. West**

Collarless metal-ceramic crowns were constructed by four different methods and evaluated for marginal adaptation, surface contour and character, and ease of construction.

Forty specimens were fabricated using standardized gypsum dies, injected wax patterns, conventional investment and casting techniques and substructure preparation. Porcelain procedures were different for each group of 10 specimens. Group I and II samples were constructed on platinum foil matrices spot welded to gold castings. Group I specimens were manually ditched, while those of Group II were ditched with the aid of a separating varnish. All samples in these groups were naturally glazed. Group III and IV samples were fabricated on treated gypsum dies by "direct lift off" techniques. Group III specimens had a shoulder of body porcelain, while those of Group IV had a shoulder of opaque porcelain. All specimens of these groups were margined with correction firings and overglazed.

Evaluation was conducted by several methods. The crowns were first examined for shade continuity, glaze and casting adaptation; then they were embedded in epoxy resin and sectioned three times labiolingually. Porcelain shoulder adaptation was assessed by gap measurements at three standard sites with a comparator microscope. Porcelain marginal contour was subjectively examined with 80 power microscopy and representative specimens were examined with a scanning electron microscope.

Clinically acceptable porcelain margins were achieved with each technique. There was not statistically significant difference in marginal adaptation between the groups but there was a significant difference in shoulder adaptation between certain sites within the groups. Specimens constructed with the platinum foil methods had subjectively sharper, less discolored and less porous porcelain margins than those constructed by the "direct lift off" methods. The Group II platinum foil technique was judged the method to produce the best and most consistent collarless metal-ceramic crown.

# Book Review

*Primitive Remedies*. Edited by Howard B. Weeks, Ph.D. 142 pages, Woodbridge Press Publishing Company, 1975.

The editor's special note advises the reader that the book is an authentic reproduction of John Wesley's *Primitive Remedies* and is presented as a work of cultural and entertainment interest only.

John Wesley (1703-1791), the noted reformer, evangelist, and founder of the Methodist Church published his book, *Primitive Remedies*, in 1755 to give the common people "a plain and easy way of curing most diseases; to set down cheap, safe and easy medicines; easy to be known, easy to be procured, and easy to be applied by plain unlettered men." In uncommon or persistent cases, he advised "every man without delay to apply to a physician that fears God."

Several dentally related remedies appear in the book, for example:

## **To Clean The Teeth**

Rub them with ashes of burned bread.

## **To Kill Animalcula That Cause The Gums to Waste Away From The Teeth**

Gargle thrice a day with salt and water.

## **To Fasten The Teeth**

Put powdered alum, the quantity of a nutmeg, in a quart of spring water for 24 hours: then strain the water and gargle with it. Or, gargle often with phyllera leaves boiled with a little alum in forge water.

## **To Prevent The Tooth-Ache**

Rub the teeth often with tobacco ashes.

## **To Cure The Tooth-Ache**

Be electrified through the teeth. Or, apply to the aching tooth an artificial magnet. Or, rub the cheek a quarter of an hour. Or, lay roasted parings of turnips, as hot as may be, behind the ear. Or, put a leaf of betony, up the nose. Or, lay bruised or boiled nettles to the cheek. Or, lay a clove of garlic on the tooth. Or, hold a slice of apple lightly boiled between the teeth. Or, keep the feet in warm water, and rub them well with bran just before bed time.

## **Miscellaneous Advice**

Sweet meats are apt to hurt the teeth, if the mouth be not rinsed after them. Cracking nuts often breaks off the enamel; so does biting thread in two.

Constant use of tooth-picks is a bad practice, constant smoking of tobacco destroys many good sets of teeth. . . .

While many of these old nostrums appear ludicrous by today's standards, it is quite possible that 100 years from now, much of our "scientific wisdom" will appear equally strange.

**Roberta Hilderbrand, L.D.H., B.S.**

Indiana University School of Dentistry  
(ALUMNI BULLETIN)  
1121 West Michigan Street  
Indianapolis, Indiana 46202

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