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Loma Linda University School of Dentistry

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LOMA LINDA UNIVERSITY

Dentistry



Advances in
clinical endodontic
instrumentation

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LOMA LINDA UNIVERSITY DENTISTRY

VOLUME 22, NUMBER I WINTER/SPRING 2011

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Mission

Loma Linda University School of Dentistry seeks to further the healing and teaching ministry of Jesus Christ by providing an environment wherein:

Students learn to provide high quality oral healthcare based on sound scientific principles

Patients receive competent care, which is preventive in purpose, comprehensive in scope, and provided with compassion and respect

Faculty, students, and staff value the patient relationship, respect diversity, and share responsibility by working together toward academic, professional, spiritual, and personal growth

Scholarly activity and research provide a foundation for evidence-based learning and enhance whole person care

The workplace environment attracts and retains a superior and diverse faculty and staff who motivate, educate, and serve

Our communities (local, global, and professional) benefit from our service, stewardship, and commitment to life-long learning.



Dr. Lloyd Baum poses with early International Dentist Program students, circa 1985, and colleague William Seibly, SD'59, PhD'81 (see pages 32-35).

Purpose

Loma Linda University Dentistry informs alumni, faculty, students, and other interested individuals about current School programs, events, and activities, as well as accomplishments of fellow alumni, faculty, and students. The journal is published twice each year by Loma Linda University School of Dentistry.

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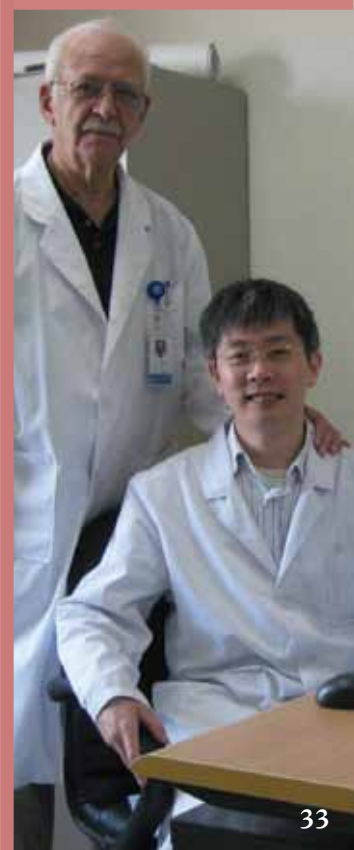
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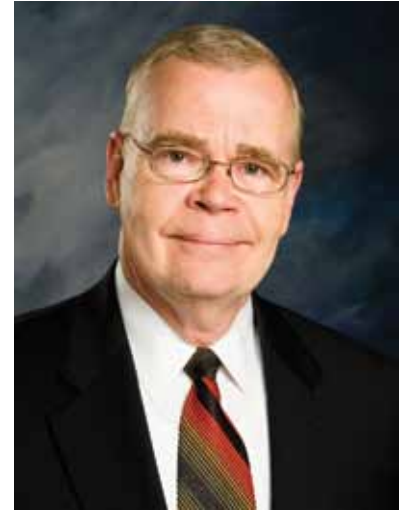
Much is expected

As an alumnus of Loma Linda University School of Dentistry, you have been blessed with an education that few of the world's population possess. Your education has provided you with special opportunities that have made you who you are. When we are given special opportunities, we also have special obligations.

"For everyone to whom much is given, from him much will be required" (Luke 12:48, The New King James Version of the Bible).

"From everyone who has been given much, much will be demanded; and from the one who has been entrusted with much, much more will be asked" (Luke 12:48, New International Version of the Bible).

These Bible verses reveal the requirements we all have when we have been given much. I believe we all have a responsibility to give back, and fulfillment can occur in many forms. We have a responsibility to give back to our families, our patients, our students, our communities, our churches, and the educational institutions that made us who we are. Giving back can occur in many forms, such as years of service, outreach activities, teaching, and financial support. I hope you enjoy this issue of *Dentistry* that contains articles representative of some of the means by which individuals have given much.



Charles J. Goodacre, SD'71, MSD
Dean

Ways to give much . . .

- *Make a gift of appreciated stock, get a deduction for the full value of your gift, and avoid capital gains tax.*
- *Create a charitable gift annuity with a maturing CD to increase your income and obtain a charitable income tax deduction.*
- *Designate the School of Dentistry as a partial beneficiary of your qualified retirement account (IRA, 401(k), etc.) and save your family future taxes.*
- *Make a gift of a life insurance policy that is no longer needed.*
- *Contribute rental property to a charitable remainder trust as an alternative to a 1031 exchange and continue a steady stream of income for life.*
- *Include the School of Dentistry in your will.*

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Alumni president's message:

Appreciating the unheralded



The core of any business or educational institution is its staff, especially the long-term staff. Yet they are the ones who are rarely acknowledged. The School of Dentistry relies heavily on its support personnel to run the academic offices, the clinics, and the service departments. This journal includes an article on a dozen employees who have each served over a quarter of a century at the School of Dentistry. I would like to add one more staff member to the list, who needs to be thanked in a special way. Jeri Fowler has served as assistant director for the Alumni Association for the past six years. Jeri single-handedly manages our annual convention, including all the scientific sessions, the banquet, golf tournament, and the exhibitors. Next time you see Jeri, tell her, "Thank you!"

Every year, the homecoming banquet focuses on anniversaries: the February 2011 banquet will honor the Class of 1961 during its 50-year reunion, as well as the International Dentist Program (IDP) on the occasion of its 25-year anniversary. The Loma Linda University International Dentist Program is unique in that applicants must, as a prerequisite, pass both National Boards Parts I and II. This distinction is important because the IDP students arrive on campus with a solid didactic background, and focus on honing their clinical skills during their two years in the program. I know both the Class of 1961 and the IDP alumni will enjoy the banquet. Short documentaries will be shown featuring the members of both these groups for a heart-warming trip down memory lane.

The new dental (104) and dental hygiene (42) students recently arrived on campus, and the dental students already experienced a two-week intensive orientation prior to the start of their academic quarter. This additional foundation will better prepare them to understand the connections between basic sciences and dentistry that will serve them throughout their dental education and professional career.

Despite these harsh economic times, activities continue. I know each alumnus is affected by the global financial crisis in one way or another, and I understand that belts are being tightened. The School of Dentistry administration is doing

its part: Each administrator took a 6% pay cut, meals are no longer provided at committee meetings, and the travel budget has been reduced.

Our philanthropic efforts have experienced a sharp downturn. This is understandable, but I ask each of you to remember the Alumni Association as you review your finances. Your donations make possible very important and wonderful projects: The Dental Alumni Student Loan Fund, that has loaned over \$11 million to students since the fund was established in 1987; Bibles for incoming students and white coats for seniors; and transportation for students going on international mission trips. These activities, along with others, need to continue and to be funded. Current and future students will remember their time at Loma Linda University in part because of the loans they were able to access, Bibles and white coats they were awarded, and service learning trips they took. Through your gifts to the Alumni Association, you participate in some of the most memorable activities the students experience!

I trust you will search your soul for financial support.

Please plan to come on campus for the February 2011 convention, and continue to represent your alma mater in your professional associations, communities, churches, and families.

Best Regards,

A handwritten signature in blue ink that reads "Tommy L. Thompson DDS, M.S." The signature is written in a cursive, flowing style.

Tommy L. Thompson, SD'60, MS'64
President, Alumni Association

Staff veterans—the core of the School

Tucked in offices throughout Prince Hall and its auxiliary facilities are twelve LLUSD staff members whose combined service record totals 357 years. Asking them why they're still here evokes enthusiastic responses, suggesting that the right people are in the right places.

In recent interviews, these veteran staff members with 25 or more years of continuous LLUSD employment expressed loyal commitment to their tasks and the people they serve.

Carl Imthurn

No, Carl Imthurn didn't anticipate spending 25 years of his life at Loma Linda University School of Dentistry as a computer programmer and analyst. A German major in college, his question upon graduation was, "What am I going to do with this degree?"



Carl Imthurn, programmer analyst, Dental Computer Services

Fortunately, his practical mother had exposed him to data processing, often taking her four children with her to work (evenings) at a San Diego hospital. "We knew enough to keep our hands out of anything," he recalls. Beginning with his first post-college job doing data entry for patient admissions and charges at a hospital, Carl has been "self taught." His bookcase contains books on Oracle PL/SQL, Crystal Reports and Microsoft C#.NET, among others. "You buy a book," he says, "and learn what you have to learn. There are also a lot of online resources—newsgroups."

After a stint working in Loma Linda University computing, Carl joined the School of Dentistry staff. "I've stayed here so long," he says, "because it's an interesting field. There's enough going on in computing so that my job duties never get boring. There's a lot to learn; the field is growing so exponentially that you have to pick something and learn it well."

A researcher will ask him to retrieve information to pursue a study. Carl knows that the information hasn't been stored

in a manner to permit retrieval. "We are not capturing that data," he'll explain. Then, ever helpful, he will ask, "What's Plan B?" En route to his mountain home, he'll ponder the request. With his expanding expertise, he is about to enter a cooperative endeavor to retrieve the unretrievable. His programming expertise has been a great help to the School of Dentistry.

Nellie Greene

She's modest, does most of her work by phone (she's a "collections agent"), yet appears every day in a subdued groomed manner. The grooming, Nellie Greene recalls, goes along with the strict dress code her employers introduced to her when she came to LLUSD in 1979. "I didn't know much about Loma Linda," says the San Bernardino native, "but what they said was all right with me."



Nellie Greene, financial assistant, Patient Business Office

A dental assistant, she didn't know the School would hire outside dental assistants until a recent dental graduate in her office said flatly, "You should go to Loma Linda." Following an interview (well, three interviews to be exact), Daniel Tan, SD'75A, and Gil Dupper, SD'67, placed her on the dental assisting team in the main clinic.

She learned that she and her staff associates' schedule included chapel. "I enjoyed that," she says. Imagine getting to go to chapel. "And we had group prayer before we started in the morning. We would pray before we saw our patients." She adds, "Of course I would pray on my own as well. When you start the day off, you need to talk to the Man and get a few things straight."

Transferring to the orthodontic clinic, Nellie was there for several years. Later, in the patient business office doing insurance billing, she was tapped for collections. Now in her eleventh year of collections, Nellie is phoning all day (and

notably successful), dealing with people “and everything that goes along with it,” she adds. And she smiles confidently when she says, “You learn how to deal with disgruntled people. I love Loma Linda. I wouldn’t want to work any place else. I love this place.”

Nellie is similarly enthusiastic about another accomplishment in her life. With four boys semi-adopted and living in her home, she became a coach in the Fontana basketball league as each boy achieved a spot on the team. “I had a blast,” she says of her coaching experience. “The boys filled my life.”

George Dobrota

In the dental lab, George Dobrota speaks with enthusiasm of his job that demands technical precision: “It’s easy for me to do this job. Most of the time it’s very enjoyable.” Colleagues note that his precision reflects a 34-year casting career at Loma Linda University School of Dentistry.

George readily demonstrates his craft, narrating the birth of a casting: “A student has a patient who needs a crown. The student gets an impression, pours the model, then uses wax to model the crown. Next he inverts the crown by placing it



George Dobrota, dental technologist, Dental Laboratory

inside a metal ring and placing refractory material around it, which allows the wax to melt. When it melts,” he says, “we melt some gold. This is called Lost Wax Technique. We lose the wax and replace it with something else. In dentures, the wax is replaced with acrylic.”

By this time, George is polishing the crown in a noisy sand blaster. “I was here before we had a sand blaster,” he comments, describing the more tedious task of polishing the tooth manually. “I also process dentures. I replace whatever is missing so that the denture fits closely again.”

What are his challenges? “Some days we get requests that can’t be fulfilled—If-I-bring-it-tomorrow-can-I-have-it-yesterday requests,” says George. “So many people come in with job requests,” he comments. What is his response? “You listen,” he says. “It has to work. I go through in my mind how the task is to be done. Sometimes I just have to say, ‘It can’t be done this way; maybe we could do it another way.’”

He’s aware that he’s called on another set of skills when he sums it up: “It’s almost like a negotiation.”

Max Hernandez

Another laboratory technician, Max Hernandez works in the color-corrected light specially provided for the 12 dental lab technicians. The light duplicates the light in the main clinic upstairs; both create an outdoor illumination, important in a precision-dominant business, where the technician needs to re-create the shades and colors identified by the students and dentists in the clinic. Max explains that each tooth has three shades—gingival, middle, and incisal.



Max Hernandez, dental technologist, Dental Laboratory

A dental ceramist, this 30-year veteran of the lab offers a metaphor for a novice inquirer:

“I make sand castles,” says the lab’s ceramist, describing the very fine sand he places on a coping. Applying porcelain atop the sand on the thimble, he puts it in an oven (specifying its temperature—1,760 degrees Fahrenheit) where the porcelain turns into glass and emerges in different colors. Using stones and diamond burs, he shapes it, then fires it in a glaze cycle for final shine. From here it goes to quality-control supervised by dental faculty. Ultimately it is ready for the student’s patient.

Max is enthusiastic about his job. “Here we see all the new technologies that come through the industry.” A certified technician, he pursues annual continuing education to remain current. “This keeps me going—learning new things,” he says. “Every year it’s new blood, new interests, new personalities.”

“Additionally, the students are always learning. I can give them confidence—hints and explanation about procedures they may have missed in class. I help them avoid pitfalls that would require re-doing things.”

“One of the reasons I enjoy working here is that Loma Linda stresses quality over quantity. Commercial labs survive on quantity. We strive for the highest quality. All of the faculty are on board with that. They want to provide the patient with the best product possible. One of the things I enjoy the most is working with our doctors. It seems we have respect for each

others' talents. You don't always have that mutual respect at other places. They are very much a part of why I work here."

Amalia Hernandez

The patient records department is always making changes to improve the service it provides. As a matter of fact, it almost always has been since Amalia Hernandez arrived 29 years ago. Initially, a student could retrieve a patient's records by signing a slip of paper that indicated the location of that patient's records. Considerable legwork and handwritten jottings kept the records circulating from a Grand-Central-Station location at the entrance to the main clinic.

Amalia's tenure in the department has included three subsequent upgrades in records. Initially, response to electronically filed record requests resulted in the production of "pages and pages" of records for a student. Today, axiUm (the third software program Amalia has "mastered") is rendering the records office paperless. Well, not yet, of course. First Amalia must oversee the removal of 50,000 patient



Amalia Hernandez, supervisor, Dental Records

records to a secure storage area. And she is monitoring the purging of totally inactive records.

So is the record office becoming totally automated? Hardly. Entering Amalia's office, now in a remote area of Prince Hall, you're likely to be greeted by an assistant who asks, "Did you come for a subpoenaed record?" The records office serves the court, lawyers, and patients' families seeking evidence to identify missing persons. Additionally, dental faculty pursuing research often request a set of charts to collect pertinent data, and patients who are moving can be expected to request x-rays and notes.

Amalia's long-term service is a distinct asset. Finding two records with similar entries (names spelled almost the same, or one number different in date of birth or social security number), she suspects a possible record duplication, perhaps a typographical error; she institutes her own detective work—all executed to achieve accuracy and efficiency in her department. With one son, Ruben Jr., now working in

the School's computer service department and another still in school, serving part-time in records, Amalia can point proudly to a two-generation involvement at LLUSD.

Linda Carlisle

Linda Carlisle's mother was about to retire from a position in LLUSD's dental supply department when Linda applied for the position. The department's administrative secretary, Linda has now worked in dental supply for 30 years. Each quarter she oversees ordering and preparing supplies (issues) for the dental students to pick up on Day One of the quarter.



Linda Carlisle, administrative secretary, Dental Supply

She remains the go-to person when students run out of a needed material.

Having used up a tooth, a student announces breathlessly, "I need a tooth for tomorrow's class." The students are always in a hurry, Linda notes. Long ago she came to expect their urgency.

"I love working with the students," Linda says. "I love my job. That's why I have been here so long. I get to meet all the people and interact with them. They are family."

The students' little dramas keep her going. "The doctor I'm working with is a hard one!" a student complains.

"Well," says Linda, "you just have to deal with it."

Quick to identify shy students, she is committed to "bringing them out." She'll engage one with her cheery, "How was your weekend?" Later she turns to her staff, "We'll need to work on that one."

"It's a fun challenge to cheer them up," Linda notes. That's why she's here—and that's why the students come for more than supplies at the dental supply office.

Debbie Catino

After 32 years in the endodontics clinic, Debbie Catino says, "I manage most everything that happens in the endodontic clinic." She calls herself a "working manager," because she has served in all the staff positions. Although her position emphasizes the business side, she also had "on-the-job" training in dental assisting. Thus she can work on the



Debbie Catino, manager, Endodontic Clinic Office

floor, and she can run the back office. "A good manager has to know all the jobs," she says.

Debbie oversees scheduling for predoctoral students, dental assistants, and graduate students rotating through the clinic. Unlike a non-school clinic, she is assimilating new practitioners every July. "I have to get to know each one of them as if he or she is the only dentist I'm working for," she says. "I work with this group for 27 months—and then they are gone."

Debbie faces the daily challenge of making sure the clinic has a good patient flow, working closely with urgent care to funnel patients into the clinic. Debbie describes the two-edged sword she wields in management: "We want efficiency," she says; "in addition, we want the students to learn everything they can—and when they're learning, they must be given the necessary time to master the task."

Crediting Dr. Leif Bakland, who hired her, with teaching her a great deal about management, diplomacy, and professionalism, Debbie seeks to pass these lessons on to students in the clinic. She is alert to their diversity and needs. "Take the millennials," for example, she says. "They have changed the way we teach and manage." The millennials can expect to find a safe place with Debbie in endo.

Evie Roach

For Evie Roach, a coordinator and auditor of Urgent Care, it seems as if the phone never stops ringing. "Usually there are three or four patients on hold," she says with a calm that belies the anxiety patients typically unload on her.

A valuable staff member at LLUSD since 1980, her career path has taken sharp turns. A native of Buffalo, New York, Evie arrived in Southern California curious to see Loma Linda University that she had heard about throughout her youth. As a food service manager, she had been hired to manage massive food production at La Sierra University.

After 13 years at La Sierra, in an ambitious moment, Evie responded to a friend's query, "If you know of anyone

interested in becoming a dental assistant . . ." and exchanged the gallon measurements of food service for the millimeter measurements of dental care.

Ready for a new challenge, she was hired into the DAU/TEAM program and soon after became an RDA and CDA. Moving to the dental records department, Evie became a chart auditor, advising students on the particulars of documentation so that their entries would be legally qualified.

The School's labyrinth of departments beckoned again and Evie moved to urgent care. "It's unique here," she says. "We are serving patients in great discomfort, many of them scared because of past dental care in other facilities." Evie sees her job a matter of calming fearful patients. In a quiet voice she suggests that they try to calm themselves by relaxing and thinking of the best vacation they have experienced. Grateful patients emerge from treatment with words of appreciation: "You really helped me. My dental treatment was much easier and more pleasant." And Evie turns to provide a less harried existence to another person on the other side of the window.

Off-site from the busy LLUSD reception area, Evie adds



Evie Roach, record analyst, Clinic Administration

her calm demeanor as a volunteer videographer at Loma Linda University chapel service, Loma Linda University Church services, and Loma Linda Broadcasting Network, where she also serves as the trafficking manager. She is a member and the recording secretary for the University Church media board and Loma Linda City CERT (Community Emergency Response Team) Board.

Gloria Ramirez

Gloria Ramirez arrived at the School of Dentistry in 1972 to work in the dental assisting program. She first mastered the tasks of checking patients in at the front desk, then switched to radiology, and then to the surgery center. In 2000 Gloria arrived at the main clinic as manager of patient care coordinators.

"The people I worked with had more faith in me than I had," she comments. Marking the 10th year of her current position, she sees her task as keeping everybody happy—



*Gloria Ramirez, manager, patient care coordinators,
Clinic Administration*

faculty, students, and coordinators. "I love the people I work with," she says. "We are like a little family here."

She calls her coordinators "a great group of people." A good coordinator, according to Gloria, has to be fairly able to multitask, be professional, and communicate well.

During her 36 years at LLUSD, Gloria has seen a lot of changes and enhancements, and has always chosen to support the changes.

If anyone should complain about a coordinator, she's sure to say, "I believe there's always two sides to a story." Confident that it isn't good to try to change a person, she says. "I'll examine their performance. If it's good, we can live with it." And she enthusiastically supports her team: "They are a terrific group to work with. They strive hard and want to do the best possible."

Her coordinators, each in charge of approximately 30 students, are like front office personnel in a private practice. Gloria notes that many of them are recipients of cards, gifts, and words of appreciation from the students. This isn't expected, she says; it comes spontaneously.

Gloria interacts, too, with the predoctoral students. "They are at a learning stage—a receptive stage. We can influence them here."

Declaring LLUSD "a good place to work," Gloria says, "The people are pleasant and service oriented." She looks forward to possibly five more years at the School. She notes that her son Gabriel has joined her as a School employee in the patient business department. And then with a broad smile she mentions the post-retirement traveling conversations she's been having with "the love of her life," a detective in San Bernardino's sheriff's department.

Marianne Bossert

Marianne Bossert is a School of Dentistry employee who demurs when asked for her job title. "I do a little bit of everything," she says during a break in the orthodontic clinic. Wearing many hats, she has been assisting a resident the

past hour. She is adept at records and sterilization. She does all the ordering and purchasing for the department. And she undertook considerable unpacking and sorting of the hundreds of boxes that facilitated the department's recent relocation to Hospitality Lane.

Marianne came to the School as a dental assisting student; after her 1979 graduation, she "stayed on." She worked first in DAU and the radiology department, then became a coordinator in charge of the supplies in the orthodontic clinic. She is enthusiastic about the variety her job offers. "I want to interact with the students and give them a positive view of the field of dentistry," she says. "I make their life easier while they are in the program." In an academic mode, she teaches an orientation class for residents, sharing, for example, her expertise in positioning x-rays for desired results, and even her recommendations about suppliers whom she recommends as dependable—valuable information for when residents open their practice.



Marianne Bossert, dental assistant, Graduate Orthodontics

She is quick to respond when patients ask, "Do you like your job?" Marianne will encourage them to explore a dental assisting career. "You get to meet a lot of people," she'll say. Those people often have words of appreciation for Marianne: "You don't poke and hurt me."

One of her more adventuresome jobs came when Toufic Jeiroudi, SD'82, invited Marianne to help train the staff in his new practice in Abu Dhabi, United Arab Emirates. Using both dental and people skills, Marianne responded positively to the staff (coming from many different countries) and to the Middle East culture. Shrugging as she recalls the challenge of using equipment unlike that available back home, she cherishes the memory of helping plant another LLUSD alumnus overseas at a site more than 8,000 miles from her home turf.

Mary Hartwell

Mary Hartwell easily identifies the time she began working at The School of Dentistry: November 1979. She became an administrative secretary for Dr. Kenneth Wical. Five years later, she answered a call from then Dean Judson Klooster and Dr. Kenneth Wical who were asking, "Why haven't you



Mary Hartwell, manager, dental clinics, Clinic Administration

applied for the personnel management position in the clinic?"

"I never thought of it," she replied. She explains that she had no training in personnel management.

"We'll send you to classes in personnel management," Dr. Klooster promised. Mary's adept on-the-job learning at overseeing clinic supply, PBX, and helping out in sterilization assured her colleagues that she'd be right for the position—or positions. She began by establishing job descriptions for staff personnel. Her job expanded to overseeing staff personnel assigned to the clinics, clinic supplies, and sterilization; and she was keeping managers current on regulations, and monitoring budget compliance.

Sitting comfortably in her office adjacent to the busy predoctoral clinic, Mary seems at home in a predominantly male context. "You have to learn how to work in this environment," she says. She credits Associate Dean of Clinic Administration, Paul Richardson, SD'72, with giving her sound advice as she matured into the job: "Don't spend time here getting your feelings hurt."

Today, Mary admits, "I have a passion for this School. It has been my mission. Even on my worst days I love coming through the doors in the morning."

She likes having both academic and clinical concerns in her position. "In academia," Mary says, "it's quiet. Then I go into the clinic. There a line of 37 students is waiting for supplies—or a breakdown in the suction mechanism challenges us." She smiles and adds: "We are a family at the School. We are known throughout the campus for this." You can tell Mary means it when she says, "I believe in the School and in what we do."

Floyd Ferguson

Of his 30-year service record in the School's dental supply office, Floyd Ferguson says, "I've seen it change." He describes the dental supply operation before gloves, masks, and gowns became de rigueur in the clinic. When male students wore shirts and ties, he recalls, "we kept four or five loaner ties for guys who showed up without them because, unlike the current personal protective equipment, ties aren't disposable."

His computer skills recommended Floyd to the

job. Learning dentistry connections on site, he created computer-driven purchasing and billing, becoming liaison with dental representatives from various companies. Today he processes computer ordering for over 65 faculty and staff in labs, clinic, and classrooms. Additionally, all mail deliveries come through his office, and he manages "the store" where students get their supplies.

"This is the only dental school that issues supplies to students quarterly," Floyd says with satisfaction. Ordering, packaging, billing, and delivering these quarterly "issues" to students is a significant convenience for the students,



Floyd Ferguson, manager, Dental Supply

says Floyd, noting that in some dental schools the students must order and pick up their own supplies—even teeth for typodonts—from various sources. Supplying the materials committee with information regarding pricings and backgrounds of the suppliers, Floyd is valued by his colleagues, who say, "We know Floyd will bring many of the issue and materials agenda items to our meeting."

Wearing another "hat," Floyd serves on the disaster preparedness committees for both the School of Dentistry and the University. His interest in disaster preparedness came during his involvement at Big Bear's 1992 Scottish games. He watched the ski slopes crumble in a 6.5 earthquake. His typical fondness for research led Floyd to seek expertise in meeting disasters competently.

Even what he pursues "for fun" aligns with Floyd's propensity for gathering information. The president of Yucaipa Genealogy Society, he has visited England, Normandy, and Scotland for historical and genealogical information and artifacts. More recently Floyd and his 15-year-old son explored Civil War sites. "Right now," Floyd says proudly, "my son says he wants to be an archeologist." Using information-gathering, a well-developed family trait, Floyd says, "I feel there's a specialty that I can bring to the operation of the University." That specialty serves the School of Dentistry well.

Faculty Dental Practices move

The Loma Linda University (LLU) School of Dentistry held ribbon-cutting ceremonies Wednesday, November 10, 2011, to mark the completion of the LLU Center for Dentistry and Orthodontics at 159 West Hospitality Lane, San Bernardino, California.

The three-story treatment, research, and teaching facility brings together the University's Advanced Education Program in Orthodontics and Dentofacial

from Taylor Street on the University's main campus to the Center's newly renovated first floor.

With the arrival of these practitioners—40 of whom are teaching faculty in the University's School of Dentistry—the Center is equipped to provide fully integrative oral health-care, including general dentistry, periodontics, pediatric dentistry, orthodontics, prosthetic dentistry, endodontics, oral surgery, sleep apnea therapy, dental implants, head and neck pain management, and treatment for temporomandibular joint dysfunction (TMD).

"Our patients have the advantage of multiple dentists, specialists and auxiliary healthcare providers working in a true team effort to achieve better treatment outcomes," says Joseph Caruso, DDS, MS, MPH, associate dean for Strategic Initiatives and Faculty Practices, who spearheaded the Center's development. "The School of Dentistry's goal was to bring to this community a fully integrated practice where patients needing any dental treatment—from routine cleanings to complex surgeries—could find care that is specialized, coordinated, and convenient."

"Many group dental offices in Southern California are controlled by large corporations and end up losing focus on the key point: that

the patient is most important," says Kevin Brown, DDS, a full-time clinician in the faculty dental practices. "I'm proud to work in an office where it's evident that patients come first and where dentists stand by the quality of their work."

"It is a pleasure to be affiliated with dentists, specialists, assistants, and support staff who embrace the University's mission concept of 'wholeness' in their approach to patient care," says Tina Malmberg, manager, Faculty Dental and Specialty Practices. "I'm delighted with the opportunities



Participants in the ribbon cutting for the LLU Center for Dentistry and Orthodontics are (L-R): D. Graham Stacey, PhD, associate dean, Student Affairs; Ronald Dailey, PhD, executive associate dean; Roland Neufeld, DDS, MS, assistant professor, Department of Orthodontics and Dentofacial Orthopedics; Joseph Caruso, DDS, MS, MPH, associate dean, Strategic Initiatives and Faculty Practices; Richard Hart, MD, DrPH, president, Loma Linda University; Patrick J. Morris, JD, mayor, San Bernardino; Charles J. Goodacre, DDS, MSD, dean, Loma Linda University School of Dentistry; Kevin Lang, MBA, chief financial officer, Loma Linda University Adventist Health Science Center; W. Patrick Naylor, DDS, MPH, MS, associate dean, Advanced Education; Ronald Secor, MBA, associate dean, Financial Administration; Leroy Leggett, DDS, MS, PhD, director, Advanced Education Program in Orthodontics and Dentofacial Orthopedics; and Kathleen Moore, MHIS, associate dean, Dental Educational Support Services.

Orthopedics and the School of Dentistry's faculty practices, creating the most comprehensive oral health care center in the Inland Empire.

For about a year, the Center's second and third floors have been home to the University's Department of Orthodontics and Dentofacial Orthopedics—including its research lab, graduate clinic, classrooms, and academic offices. But the Center was not complete until the second week in November, when the Faculty Dental and Specialty Practices moved



Visti the Center for Dentistry and Orthodontic's website at:
<http://www.llucenterfordentistry.com>

the new multi-specialty dental center offers our patients, our team, and our community."

The move to the Center's 9,000-square-foot first floor represents an enormous relief to faculty practitioners who for years have worked in a 3,500-square-foot building. Unlike the older location, which was dated, cramped, and perpetually short on parking, the new facility offers more places to park, more room to move, upgraded technology, and updated décor.

The Center is equipped throughout with closed-circuit TV monitoring—from patient waiting rooms to operatories and hallways—and has been wired throughout for state-of-the-art internet connectivity. Its custom-designed tele-dentistry mobile unit displays patient images in real time, allowing for consultation as needed with instructors at the School of Dentistry or elsewhere. And its video conferencing capabilities can include up to 35 participants joining from up to four locations, facilitating guest lectures and conferences with people anywhere in the world.

Judi Penman, chief executive officer of the San Bernardino Chamber of Commerce, presided over the 10:00 a.m. ribbon-cutting ceremony for three orthodontic department areas, each named in honor of a man who figures significantly in the department's history: the J. Milford Anholm Graduate Orthodontic Clinic, the Alden B. Chase Classrooms and



Bill Emmerson, DDS, MS, senator, 37th District of California, holds the California Senate Certificate of Recognition for the Thomas J. Zwemer Conference Room, as he chats with Charles J. Goodacre, DDS, MSD, dean, Loma Linda University School of Dentistry; and Joseph Caruso, DDS, MS, MPH, associate dean, Strategic Initiatives and Faculty Practices.



Participating in the ribbon cutting for three Department of Orthodontics and Dentofacial Orthopedics areas—the J. Milford Anholm Graduate Orthodontic Clinic, the Alden B. Chase Classrooms and Video Conferencing Center, and the Thomas J. Zwemer Conference Room—are (L-R): Leroy Leggitt, DDS, MS, PhD, director, Advanced Education Program in Orthodontics and Dentofacial Orthopedics; J. Milford Anholm, DDS, MS, professor, Department of Orthodontics and Dentofacial Orthopedics; Joseph Caruso, DDS, MS, MPH, associate dean, Strategic Initiatives and Faculty Practices; Bill Emmerson, DDS, MS, senator, 37th District of California; Charles J. Goodacre, DDS, MSD, dean, Loma Linda University School of Dentistry; and Roland Neufeld, DDS, MS, assistant professor, Department of Orthodontics and Dentofacial Orthopedics.

Video Conferencing Center, and the Thomas J. Zwemer Conference Room.

The Faculty Dental and Specialty Practices' ribbon-cutting took place at noon, with Penman again presiding and Mayor Patrick J. Morris welcoming the Center to the City of San Bernardino.

Alaskan collaborative adventure

Bonnie Nelson, SD'88, chair, Department of Pediatric Dentistry, and **Laura McCormack, DDS**, Pediatric Dentistry resident, collaborated in April 2010 with dental professionals from three other American dental schools in a professional outreach to the underserved in central Alaska.

This was the second trip to the country's largest state, arranged by the New York University College of Dentistry—Henry Schein Cares Global Student Outreach to Alaska, aimed at achieving a sustainable reduction in dental caries in areas where the caries incidence is more than twice as high as anywhere else in the United States.

The addition of participants from the dental schools at Loma Linda University and the University of Washington to the NYUCD effort brought the total number of students and faculty participating in the 2010 mission to 30, more than double the number who first provided dental services to Alaska's underserved in 2009.

LLUSD team members, Drs. Nelson and McCormack, spent five days administering dental care to children on the cusp of the Arctic Circle—a day of screenings at Fort Yukon (population 600), located on the north bank of the Yukon River, 145 miles northeast of Fairbanks; and two days each of comprehensive care in the overwhelmingly rural villages of Venetie (200 souls), 35 miles north, northwest of Fort Yukon; and Circle (population 100), at the northern terminus of the Steese Highway 55 miles south, southeast of Fort Yukon at the Yukon River.

Adding to the Loma Linda cohort's capabilities and camaraderie was Travis Nelson, SD'07, who joined the outreach independently from the University of Washington. The weather was mild and the days were sixteen hours long. The sun was low but up from before six in the morning until almost ten at night.

The visiting dentists stocked up on food and notions at a Fred Meyer in Fairbanks, Alaska, where they boarded air taxis for the 150-mile flight northeast to Fort Yukon.

At the two smaller villages, the dentistry team slept on

air mattresses in the local grade school classrooms. They even enjoyed hot and cold running water and showers.

Dentistry was practiced in the school gymnasiums using portable dental units and NOMAD handheld radiograph systems. The visiting professionals provided the children with oral health education, screenings, fluoride varnishes, sealants, restorative treatments, extractions, and they trained teachers and local healthcare workers to reapply the varnishes at three-month intervals.

Dr. Nelson and Dr. McCormack both report that the teeth of the Alaskan children generally were in better shape than what they see typically in young patients from Southern California's less advantaged population at the LLUSD clinic, perhaps due in part to the unavailability of so much junk food in their regular diet.

Dr. McCormack enjoyed very much working with the residents from NYU and LLUSD alumnus Travis Nelson, and says, "I still keep in contact with them via Facebook."

The presence of LLUSD's faculty and alumnus on the Alaska outreach is indicative of the NYUCD-Henry Schein Cares program's intention to enlist additional dental schools for each mission, in order to be able to simultaneously deploy multiple teams to provide care to more villages. Ultimately, the goal is to have each dental school take the lead in one area, enabling other schools to move on to serve additional villages.

Dr. Nelson is considering the possibility of staging annual Department of Pediatric Dentistry trips to Alaska—excursions that she imagines would involve four to six residents and two faculty. NYUCD's Office of International Affairs & Development would continue to smooth over many logistic and legal hurdles as well as financing the effort.

A veteran of the LLUSD's outreach missions to Honduras and Nicaragua, Dr. Nelson said, "This was the easiest outreach I ever participated in. NYUCD Program Coordinators Rachel Hill and Amanda Meissner made all the necessary arrangements, including helping me to obtain the temporary license I needed to practice dentistry in Alaska."



Drs. Laura McCormack and Bonnie Nelson



An air taxi loads passengers and baggage in Venetie.



Drs. Nelson and McCormack teamed with new friends and one old friend and colleague, Dr. Tavis Nelson, 5th from left.



Drs. Nelson and McCormack pose with a happy patient.



A young fisherwoman eats the eyeball of her first catch—an Alaskan tradition.



Dr. McCormack is bracketed by new friends and colleagues—Drs. Doan and Chung, pediatric dentistry residents from NYU.



This shot of the Chandalar River illustrates how bleak and spare are the eastern Alaska landscapes.

South Korean academic dentists visit LLUSD

August 24 was the occasion of a visit to the School of Dentistry by two visitors from Kyung Hee University School of Dentistry in Seoul Korea: its dean, Joon Bong Park, DMD, PhD, and Kyoung-Kyu Choi, PhD, chair, Conservative Dentistry.

As it happens, Dean Park was a grade school classmate and friend of LLUSD's Sean Lee, DDS, associate professor of restorative dentistry and director of clinical research at the Center for Dental Research, when they both attended Dong Duk Elementary School, Taegu, Korea.

Dr. Lee served as translator while hosting the visits of Drs. Park and Choi with Dean Charles J. Goodacre, SD'71, MSD, who introduced them to the School's digital education material. They discussed the possibility of future collaboration between the two schools. The visitors toured the International Dentist Program's clinic and lab hosted by its director, Gregory Mitchell, SD'84; and Mr. Joe Arnett introduced them to the School's Educational Support Services, which he manages.

While Dr. Lee was a second-year dental student at UCLA in 1986, Dr. Joon Park, by then an associate professor at Kyung Pook National University School of Dentistry, was spending a year at UCLA as a visiting scholar. There he and Dr. Lee assisted No-Hee Park, DMD, PhD, professor of Pharmacology, UCLA School of Dentistry, in his research on oral herpes.

The three dentists were reunited over dinner at the home of Dr. No-Hee Park, now dean of the UCLA School of Dentistry. It was a 24-year personal and professional reunion. And no translator was needed.



Dr. Kyoung-Kyu Choi, Dean Charles Goodacre, Dean Joon Bong Park, and Dr. Sean Lee



Joon Bong Park



Sean Lee



Dean Joon Bong Park, Mrs. Park, Dean No-Hee Park, and Dr. Sean Lee

Wolfram wins again

Klaus Wolfram, SD '71, MS '73, associate professor of periodontics since 1991, and on assignment to the International Dentist Program since 2005, was given the program's Teacher of the Year award for the fifth consecutive year on May 27, 2010, at the International Dentist Program's annual banquet.



Dr. Wolfram enjoys his award.

Bemused colleagues are wondering what they have to do to end Dr. Wolfram's protracted streak.

Although he had taught part-time at LLUSD for the decade after his completion in 1973 of the School's Advanced Education Program in Periodontics, and then full-time in its Department of Periodontics, beginning in 1991 (before being assigned to the International Dentist Program in 2005), he doesn't know why he keeps receiving this honor. "I just come to work on time, do my job, and practice periodontics," he smiles innocently.

Governor appoints Steven Morrow to the Dental Board of California

Steven Morrow, SD'60, professor, Department of Endodontics, has been appointed to the Dental Board of California by Governor Arnold Schwarzenegger.

Dr. Morrow has worked for Loma Linda University School



Dr. Steven Morrow

of Dentistry as professor of endodontics since 1981 and director of patient care services and clinical quality assurance since 2000. Previously, Dr. Morrow practiced privately in the San Fernando Valley and Loma Linda from 1962 to 2005. He was a lieutenant in the U.S. Navy Dental Corps on active duty from 1960 to 1962 and in the U.S. Navy Reserves from 1962 to 1968.

Dr. Morrow is a member of the American Dental Association, California Dental Association, Tri-County Dental Society, American Association of Endodontists, California State Association of Endodontists, Southern California Academy of Endodontics, American Dental Education Association, American College of Dentists and Loma Linda University School of Dentistry Alumni Association.

Dr. Morrow is a prior board member of the American Association of Endodontists, and past president of both the California State Association of Endodontists and the Southern California Academy of Endodontics.

In 2009 Dr. Morrow was honored with the School of Dentistry's Distinguished Service Award for more than three decades of creative and noteworthy service to his alma mater.

The lion's endodontist

Big cats in captivity enjoy at least one advantage over their independent relatives: access to free dental care—sometimes even that of specialists such as endodontist Roderick William Tataryn, SD'89, MS'94.

Recently this School of Dentistry alumnus was asked to perform two root canal procedures on a famous Barbary lion. Zamba, the former MGM actor and source of the studio's trademark movie-opening roar, was suffering at his retirement placement in Cat Tales Zoological Park near Spokane, Washington, from the result of two right canine teeth broken off at the gum line, exposing the nerves. The tissue around the lower cuspid tooth was infected and pus laden.

Dr. Tataryn was chosen to treat the 650-pound lion, not only for his proximity and professional expertise, but because he had a portable root canal surgery setup. Nevertheless, he had to special order 5-inch files to clean and shape the canal systems sufficiently deep to treat Zampa's compromised teeth, the largest dental procedure he has ever attempted.

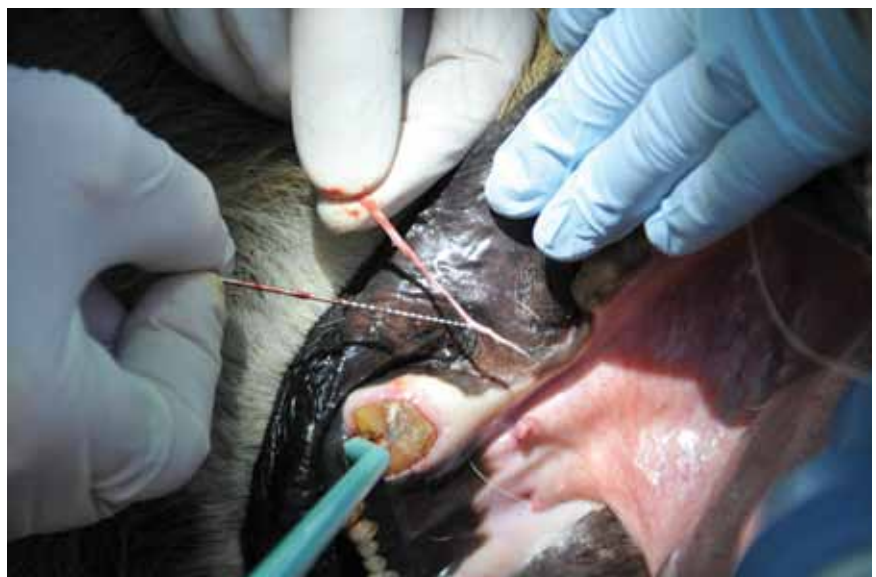
Mike Wyche, Zamba's keeper at Cat Tales, put the lion to sleep with a shot to the flank from a dart gun, and eight workers and volunteers moved the cat to a makeshift operating table where Dr. Brian Hunter put the temporarily sedated animal under general anesthesia for the three-hour procedure.

With relief from his oral misery, Zamba's disposition has returned to the norm that

allowed him before his retirement to appear in movies such as *Gladiator*, television specials like NBC's *Noah's*



Dr. Rod Tataryn and his three endodontic assistants—Lisa Howard, Emily Ballensky, and Jerilynn Cunningham—pose with Zamba as he recovers from general sedation following his two root canal treatments.



Using a veterinary endodontic instrument, Dr. Tataryn removes pulpal tissue from Zamba's lower canine.



A lion skull illustrates the massive size of the upper and lower canine teeth. Zamba had broken off both the upper and lower right canine teeth at the gum line, exposing and infecting the large pulpal nerves.

Ark, and commercials, such as one for Right Guard that featured Bret Favre.

Zamba's home, Cat Tales Zoological Park, was founded and licensed as a zoo in 1991 primarily to rescue and nurture big cats. Cat Tales is also home to the Zoological Training Center, the only school in North America that teaches exclusively zoo keeping as a state-licensed trade school. Cat Tales boards a menagerie of animals that includes bears, snakes, geese, parrots, lizards and goats.

But it is nearly 50 large cats (lions, tigers, pumas, panthers, lynx, leopards) that are the park's biggest attraction and who eat the "lion's share" of the roughly 15,000 pounds of food its guests consume each month.

Zamba's British Columbia-born and raised endodontist, Rod Tataryn, graduated at Walla Walla College, before earning his DDS degree from Loma Linda University in 1989. He returned to his alma mater for a two-year post-graduate residency in endodontics, for which he received a master's of science degree in 1994, and then established Tataryn

Endodontics in Spokane, Washington, where he continues to practice.

Dr. Tataryn has participated in research and published scientific and clinical articles in the field of endodontics. He is a contributing author to the sixth edition of *Ingle's Endodontics*. With his wife Carol, Dr. Tataryn is raising their four sons: triplets—Alexander, Nicholas, Christopher—and Zachary.



Endodontic treatment on Zamba's lower canine—shown here drying the canal with a large veterinary paper point.

Videos related to Dr. Tataryn's work on Zamba can be viewed at the LLUSD online news page: http://www.llu.edu/dentistry/news/index.page?story_id=1032

Mission to the center of Central America

Ronaldo Fritz, SD'72, MPH'72

Connecting North and South America are seven countries that sprawl southeastward from the southern border of Mexico, each unique in its own way. In the middle of this chain of countries, known as Central America, lies roughly triangular shaped Nicaragua—destination (June 2010) for a group of 59 LLU School of Dentistry students, dentists, nurses, and auxiliary personnel.



A common scene in Nicaragua, even in the capital city of Managua. This is the way goods are hauled to market or to home.

With a population of less than six million, Nicaragua, which translates “land of volcanoes and lakes,” is the largest and least populated Central American country. It is also the second poorest country in the western hemisphere (after Haiti in the Caribbean) and the poorest on the continent, with 70 percent of its people surviving on less than two American dollars per day.

Nicaragua declared independence from Spain in 1821; and despite its tumultuous history of dictatorships, revolution, civil war, natural disasters, and economic collapse, Nicaraguans are happy and optimistic people, friendly and warm. The secondary language of the indigenous people is Miskito, money is the Córdoba (US dollar also is widely used), 1,400 animal species abound, there are over two million cell phones, 12 percent of roads are paved, and the voting age is 16. Nicaragua’s national dish is “Gallo Pinto” (speckled rooster). In a region so obsessed by rice and beans,

it is hard to believe that anyone claims to have invented the process of mixing the two, the result of which is known in Nicaragua (and in Costa Rica) as Gallo Pinto. This national dish is comfortably eaten at morning, noon, and night. The national drink is “Macua,” a blend of white rum and guava juice. And the “Chichi,” or “Chichi Bruja,” is a bright pink, fermented corn beverage.

Nicaragua’s civil unrest has had a reputation for some time, but a ceasefire went into effect 20 years ago. Even though the country has its share of challenges, with jobs scarce, the economy poor, and its politics challenging, it is today a safe and peaceful country. Members of the dental team strolling a lovely plaza or gazing down toward Granada and Lake Nicaragua (Lago Cocibolca) from high up on Mombacho Volcano felt they were living a dream.

At one point in the 1850s, the strong desires of conservatives in Granada and liberal party members to the north in Leon, each for their city to be the capital of Nicaragua, resulted in civil war. To resolve this, a compromise was reached that concluded the contentious internal rivalry: Managua, the small, proud indigenous fishing village on the shores of Lago Xolotlán (Lake Managua) between the two was finally named capital of Nicaragua. This city of 1.5 million probably can best be described as disorganized



Looking down from Mombacho Volcano to huge Lake Nicaragua, and the city of Granada on its shores.



Dr. Fritz, DDS, MPH, confers with Lorenzo Muños, DDS, MD, PhD, dean of the UNICA Schools of Medicine and Dentistry.

and disjointed—a scattered, disheveled urban sprawl with no center, looking like a bomb hit it. That bomb was a 7.5 magnitude earthquake in 1972, five miles below the center of the city. Rebuilding on the shifting tectonic nightmare was considered pointless, which left today's capital a ghost town, surrounded by dispersed, anonymous neighborhoods, pockmarked with craters and crisscrossed with streets that lack character as much as they lack names. Addresses are not given as a street and number, but rather as a few descriptive lines of where they are in relation to a landmark, business, or other reference point.

The Loma Linda dental group entered this environment as a mission project to improve the oral health in five

separate Nicaraguan areas. The sponsors were Loma Linda University and the Foundation for Worldwide Health (FWH), of which Mark Carpenter, SD'80; Tom Rogers,



Some of the patients presented with either a difficult procedure or were uncooperative. Brian Goodacre, class of 2013, assists Dr. Fritz with a surgical procedure on a frightened little girl.

SD'83, MPH'96; and Henry Mercado, SD'77, are directors. When Dr. Carpenter visited Nicaragua in 1999 to do some electrical repair and maintenance, he noticed the high incidence of oral disease in the children. The result was the formation of FWH and now its 11th June dental mission



Dr. Carpenter addresses the Nicaraguan students from the dental school in Leon to orient them on how the clinic will operate.



Brian Goodacre, LLUSD class of 2013, performs a meticulous procedure with rubber dam, emphasizing the quality of care given to the needy patients, while Dr. Fritz checks his steps.

trip to Nicaragua. One offshoot is "Nathan's Project," to provide handicapped children who need dental treatment under general anesthesia. Dr. Mercado's son, Nathan, born with Down's Syndrome, unfortunately died several years ago at the age of 23. Nathan's name and spirit live on to provide important help for other Down's syndrome children.



Dr. Carpenter works with a Nicaraguan student, being assisted by class of 2011 dental students Rebecca Flais and Justin Schmidt

One of the five mission groups stayed and worked a couple of hours drive west of Managua in Leon. Other groups went to San Marcos, Acahualinca, Catholic University School of Dentistry (UNICA), and Hospital Metropolitano in Vivian Pellas. Providing dentistry with portable units and modified adjustable aluminum lounge chairs was intense and backbreaking. At UNICA, the dean, Lorenzo Muñoz, MD, DDS, PhD, originally from Cuba, arranged a mirrored clinic so that his third year-students (of a five-year curriculum) could work side by side with LLUSD students, often mixing in and working on “the other side of the aisle.” Students’ confidence strengthened as relatively sophisticated dentistry was lovingly provided for these beautiful children.



This little patient is very pleased after LLUSD’s class of 2011 dental student Kenny Basit, finishes treatment with the help of third year Nicaraguan dental student, Adriana Cotte.

Why would people travel to Central America, incur expenses, provide free care, struggle with foreign language, food, and culture? Where there is the potential to help others, the golden rule prevails. Service to others in need is not only an obligation, but an opportunity, and a distinct privilege as well.

One of Dr. Mercado’s young patients from a previous visit handed him a note in a home-made envelope. He opened it to read: Doctor, *Gracias por su atención en mis dientes, gracias a usted y a mi dios, mi Padre Eterno. No me duelen mis dientes. Yo lo quiero mucho a todas las personas que tengo como amigo*



LLUSD students worked along side Nicaraguan students, all with the same goal of improving their patients’ oral health. Bonds of international friendship were formed that will last for the duration.

ahí y a usted. (Thank you, Doctor, for your attention to my teeth. Thanks be to you and to my God, my Eternal Father. My teeth don’t hurt anymore. I love all the new friends I made there, including you.)

The magic happens when, in our attempts to give to needy Nicaraguans, we end up looking back and realizing we have actually received more than we have given. A spiritual blessing is the deep sense of unselfish gratitude at being trusted to relieve the suffering and pain of others.

“Inasmuch as you have done it unto one of the least of these, . . . you have done it unto Me.”

International Service Learning—2009/2010

Since 1998, when the National Association of Seventh-day Adventist Dentists (NASDAD) board voted a five-year endowment of \$50,000 to support a LLU School of Dentistry service learning program, service learning has become a significant part of the curriculum for dental and dental hygiene students and students in the International Dentist Program.

While the preponderance of service learning takes place within the continental United States, overseas service learning trips provide an opportunity to demonstrate the School's motto—Service Is Our Calling—in a variety of unique settings.

The numbers for the past year (June 2009 – May 2010) certainly are inspiring: 69 students, 15 faculty, 11 trips, 10 countries, 4,131 patients and 6,148 procedures. The following table specifies the Service Learning trips for the recent year:

Country	Number of Students	Number of Faculty	Number of Patients	Number of Procedures
Nicaragua	15	4	760	950
Philippines	8	2	580	766
Peru	9	3	564	1,775
Grenada	3	1	571	646
St. Vincent	4	0	178	156
Bangladesh	11	2	1,000	900
Mexico	5	1	30	109
Honduras	8	3	238	688
Brazil	6	1	210	158
TOTALS	69	17	4,131	6,148

CDA awards Nadim Baba

Nadim Baba, DMD, MSD, LLUSD professor, Restorative Dentistry, has been selected to receive the 2010 Dr. Arthur A. Dugoni Faculty Award sponsored by the California Dental Association Foundation. The endowed award was established by the CDA in recognition of Dr. Dugoni's "remarkable accomplishments in dental education and organized dentistry." CDA Board of Directors chair Lindsey A. Robinson, DDS, wrote that the LLU School of Dentistry "is fortunate to have an instructor who is so committed to the preparation of our future dental professionals."

The \$5,000 award is intended to support Dr. Baba's study in the areas of restorative, prosthodontics, biomaterials, and removable prosthodontics as well as enhance his relationship with students and faculty development.

Dr. Baba had indicated that the funds will help him specifically to continue the development of electronic educational material on removable partial dentures that he has been working on for several years.

Dr. Baba was recognized before the Board of Directors and CDA Board of Trustees during their November 14, 2010, meeting.



Dr. Nadim Baba

Advances in clinical endodontic instruments

by Robert Handysides, DDS

Endodontic instruments are continually at the forefront of discussion among general practitioners and endodontists alike. We are easily intrigued with the latest and greatest in gadgets and equipment. The proverbial saying of “he with the most toys wins” appears to be very relevant to the endodontic field. With what seems to be the annual addition of more file systems and means of cleaning and shaping the canal morphology, basic foundational principles of instrumentation are often overshadowed in favor of integrating new technology. The purpose of this paper is to explore historically where endodontic instrumentation began, and where it now stands in the developmental journey of endodontics. In addition this article will review foundational principles of instrumentation applicable to whatever instrumentation technique the clinician should choose to utilize.

Historically dental pain and its management have been well documented. Some of the oldest recorded information we have regarding toothaches comes in the form of ancient Anastasia Papyrus and Chinese documents. The

first mention of a “tooth worm” theory was found in the Anastasia Papyrus of the thirteenth century BC.¹ This theory hypothesized that the invasion of worms into the tooth via a cavity was what created dental pain. According to Tsai Fang, “The oracle bone inscription, dated to the Yung Dynasty (14th century BC), clearly shows a Chinese character whose meaning is interpreted as caries.”² By the year 200 AD, the Chinese were using arsenic compounds to treat pulpitis, preceding the Europeans and Spooner by 1,600 years.² The first documented case, however, of instrumentation inside a tooth comes from the skull of a Nabatean warrior (200 BC).¹ A radiographic examination of the skull revealed a 2.5mm bronze wire in the root canal of the maxillary right lateral incisor. One explanation of this primitive endodontic procedure was to prevent “tooth worms” from burrowing into the teeth and creating further pain. In the mid 1700s, Pierre Fauchard was recommending the removal of diseased pulp tissue as a form of treatment. Dr. Louis I. Grossman, in his 1976 JADA article, described extensively the role of endodontics during the preceding 200 years.³ It appears that it was not until the late 1800s and early 1900s, with the development of anesthetics, antisepsis, and radiography, that the use of endodontic instruments also emerged.

The first mention of a “tooth worm” theory was found in the Anastasia Papyrus of the thirteenth century BC.

Initially there were two types of endodontic instruments. The endodontic file was to be used in a push/pull rasping motion, and the endodontic reamer was to be used in a rotating/twisting motion. Prior to 1957 these files came in six sizes conveniently labeled 1-6. The problem was that there was no standardization of the sizes of instruments, and definitely no standardization among manufacturers. In 1904 the Kerr Company had come up with the original design of instruments but no major changes had occurred since then. In 1957, John I. Ingle* and others issued a plea to the profession and manufacturers to standardize endodontic instruments. A Swiss company, Maillefer, picked up on the challenge, and the newly designed instruments were designated the “International Standard” by the International Standards Organization. Standardized instruments were designated in sizes 10 to 100. A file sized 100 has a tip size of 1mm and

a file sized 10 has a tip size of 0.1mm. The taper was standardized so as to increase at a fixed rate. It was decided to increase the diameter of the file by 0.02mm starting at the tip

of the file and increasing every mm of flutes up the shank of the instrument. Hence we have our 0.02 tapered ISO standardized hand instruments of today. Upon the completion of the ISO standardization, changes once again stagnated and occurred only slowly for a number of years. Initially there was a change from carbon steel to a stainless steel, but little changed in terms of design. Then a new metal alloy was introduced into the field of dentistry, and the innovations in endodontic file designs accelerated.

Walia in 1988 was the first author to describe the use of a metal alloy called nitinol in endodontic instruments.⁴ The name “nitinol” was derived from nickel, titanium, and the Naval Ordinance Laboratory and was first described in a review article by Buehler and Wang for oceanographers.⁵ Today, in the endodontic literature, the name has been shortened significantly and instruments containing the nitinol metal are referred to as NiTi instruments. When comparing nitinol to stainless steel, Walia described the

* On a side note, we are honored to have Dr. Ingle as a faculty member in the Department of Endodontics at Loma Linda University. Thank you, Dr. Ingle, for all you’ve done for the specialty and for dentistry.

properties known at the time that included increased elastic flexibility and superior resistance to torsional fracture. Subsequent to the publication of this original paper on the basic properties of this unique alloy, much research has been done on NiTi files. Many aspects have been investigated, including the metallurgical properties, fatigue, and torsional strength, as well as separation, distortion, and surface treatment of an instrument. The amount of information on this topic is vast and accumulating.

When evaluating a NiTi instrument, clinicians must be familiar with some basic properties of the instrument design. Because numerous designs and properties are available with the various instrument systems, it is important to understand these differences and how they affect the instrument. What follows reviews a few of these characteristics.

Landed versus non-landed instruments

A cross section of the instrument reveals certain characteristics. A radial-landed instrument has a flattened aspect on the external aspect of the flute (Fig 1), whereas a



Figure 1.



Figure 2.

non-landed instrument does not (Fig 2). While all files, if used improperly, can create challenges in maintaining a natural canal shape, a radial-landed instrument tends to stay more central in the canal space because of the flattened portions pressing against the lateral aspects of the canal walls. A non-landed instrument tends to cut the tooth more efficiently, but distortion of the canal is a much greater problem, especially for the less experienced clinician. This distortion of a canal's shape tends to lead to iatrogenic mishaps such as straightening of canals, apical transportations and perforations. Proper

attention to details must be maintained regardless of the type of instrument used.

Taper

Another consideration in instrument selection deals with taper, defined as a gradual diminishing of thickness in diameter or width in an elongated object.⁶ When the term is used with endodontic files, it typically applies to an increase in thickness/diameter/width from a standardized file tip size as it progresses up a file's shank/flutes. Various tapers exist in all file systems. Most instrument tapers are fixed, meaning they increase at a standardized, consistent rate from

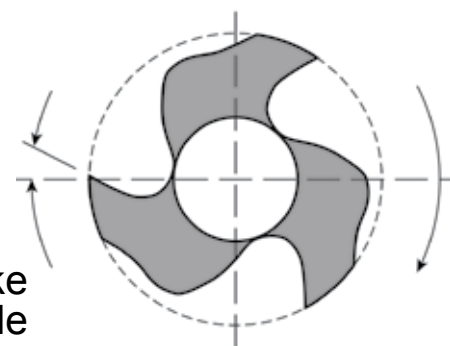
the tip of the file up to the end of flutes. These fixed taper file systems range from 0.02mm taper to 0.12mm. Some of the newer instruments have a variable taper built into the instrument. Thus within a single instrument the taper varies, sometimes starting at a specific taper and then altering the tapers as it travels the shank so as to improve efficiency in its cutting. An example of this would be a ProTaper Shaping file SX instrument⁸ by Dentsply International. Understanding taper is an essential component for predicting final shapes and sizes of canals. The canal shape and size will ultimately be determined based on the anatomy of the tooth, the canal system being instrumented, and the clinician's decision about the canal's final configuration.

Flexibility

Flexibility and stiffness of a file are primarily derived from the size of an instrument's core. The thinner an instrument's core, the more flexible the instrument will be. Flexibility is a cherished characteristic allowing files to follow the natural curvatures and irregularities of a canal system. As with most characteristics, there are positive and negative aspects. The down side to a flexible and thin core is that a file with these features has less torsional strength. This was clearly shown in an article by Xu et al. in 2006.⁷ While various designs and fluting styles may disperse and distribute some of the torsional stresses better and more evenly, the size of a core is relevant in regard to its fracture potential. The thinner the core the more likely it is to succumb to torsional fracture.

Rake Angle

Rake angle refers to the cutting edge of the flute file. It has long been a goal of instrumentation to be as efficient as possible. Having a "positive" rake angle makes for a sharper cutting instrument and one that more efficiently shaves off dentin. A negative rake angle occurs when an instrument scrapes the wall rather than cutting into it. Figures 3 and 4 represent configurations of a positive and negative rake angle. Figure 3 is a representation of a K3[®] file and figure 4 is representation of a Profile[®] cross section. An interesting study by Kum et al. compared the amount of smear layer produced; and they found that the Profile instrument produced more



Positive Rake Angle

Figure 3. K3[®] file cross section

Negative Rake Angle

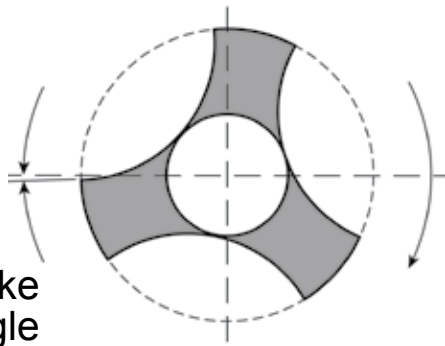


Figure 4. Profile[®] cross section

of a smear layer than did the K3.⁸ While both instruments produced a smear layer, no clinical relevance can be inferred from this study. It makes sense that it is more efficient to cut than scrape a surface, yet aggressiveness needs to be counterbalanced with safety in the amount of tooth structure that is removed.

Tip Modification

While the sharpness and cutting abilities of early hand instruments were top priorities, in the 1980s the sharpness of a tip received attention. Although the sharper instrument tip is more effective in penetrating and cutting dentin, it also leads to more iatrogenic complications. These complications include the common clinical difficulties, such as the potential of ledgeing, canal transportation, and perforation. In the mid eighties, Roane, followed by Powell, started to modify the tips of K-files by "grinding to remove the transition angle" from tip to first blade.^{9,10} The articles showed that while the modifications made cutting of the dentin less efficient, the files stayed more centered within the original canals and cut all sides more evenly. Many rotary instruments today have both a cutting and a non-cutting tip, and this point is important to a clinician when deciding which instrument to use. When using a slightly less aggressive tip, there is less likelihood of an iatrogenic mishap and an increase in safety of the procedure.

All of these developments and changes in our instruments have taken place during the last few decades. The reason for these efforts to improve endodontic instruments relates to one of the foundational principles in endodontics: canal debridement and disinfection, sometimes better known as cleaning and shaping. The major objectives of cleaning and shaping involve locating all of the canals inside a tooth, obtaining a straight-line access to these canals, and removing all the pulpal tissue remnants while conserving tooth structure. Shaping is an essential component of canal preparation. The instruments provide the shape while the irrigants cleanse and disinfect. If an inadequate shape is produced, it greatly diminishes the effectiveness of the cleaning effort and complicates the filling of the canals. Schilder,¹¹ in his classic article, outlined the principles of shaping as developing "a continuously shaped conical form from apical to coronal. The

apical preparation should be as small as is practical and in its original position spatially." This continuous flow, from apex to chamber, facilitates the irrigation process and allows for better cleansing of the canal system without the removal of excessive tooth structure. When talking about instrumentation one sometimes gets caught up in the technology and forgets the biological principles of disinfection. While technology has progressed to facilitate the instrumentation and shaping component, it is important not to forget the importance of irrigation. It is the copious lavage with the various irrigants that leads to maximum success.

Just as "there is more than one way to skin a cat," so there is more than one way to instrument and shape root canals. As discussed here, there are many instrument systems with numerous differences to select from. It is for the clinician to decide what system will provide the best possible care for her or his patients.

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Alumnus contributes to field of forensic odontology

Crime Scene Investigation (CSI) is not what most people think of when they consider a career in dentistry. But Gerald Reynolds, SD'69, assisted such investigations many times during his 41 years of clinical dentistry in northern California—the last 19 in associateships from South Lake Tahoe to Rancho Cordova and Marysville, California.

The son of missionary parents, Gerald arrived at his profession a little late. Graduating from La Sierra College with a degree in biology and a minor in chemistry, he spent three years earning a master's degree in Pharmacology at Howard University (1962), while simultaneously employed teaching science at Takoma Academy in nearby Takoma Park, Maryland. Gerald then spent nearly three years working in the area of inhalation toxicology for a private research laboratory in Falls Church, Virginia. While there he decided if he was going to do something with his life he would need to get a doctorate in pharmacology or take medicine or dentistry. He was accepted by the two dental schools to which he had applied: Howard University and LLUSD.

Having lived for a time as a child with his parents in Santa Rosa, Dr. Reynolds was attracted to Northern California, and after dental school, in 1969, he set up his private practice in Yuba City. In 1979, he could boast of having the first computer dental patient record management system among the dentists of the Butte-Sierra District Dental Society, and to being that society's first peer review committee chair.

Dr. Reynolds' interest in forensic science initially was piqued while he was attending La Sierra College. His older brother, Glenn, a medical student at LLU, persuaded him to sit in on a forensic medicine lecture by Dr. Thomas Noguchi, later appointed chief medical examiner-coroner for LA County, and later still a personal friend.

Like everyone else in the summer of 1971, Dr. Reynolds was scandalized to learn of the murder of 25 migrant workers

by Juan Corona, discovered in shallow graves around a peach orchard near Yuba City. So he took the opportunity in 1972, as a lieutenant in the dental corps, US Naval Reserve-Ready, to attend the Armed Forces Institute of Pathology's course in forensic dentistry, during which he was persuaded by instructors Drs. Paul Stimpson, Curtis Mertz and, particularly, Lester Luntz, to join the American Academy of Forensic Sciences.



Dr. Gerald Reynolds

In September 1978, Pacific Southwest Airlines flight 182, with 135 passengers aboard, collided with a light plane over San Diego. Dr. Reynolds rushed to San Diego to help with the effort to identify the badly mangled and burned bodies, in particular that of a stewardess. Although the recovered portion of her jaw had no teeth, Dr. Reynolds, together with county dental deputy coroner Dr. Robert Siegel, was able to match antemortem radiographic images from her dentist of record with the postmortem analysis, and provided some closure to her grieving relatives.

A particularly gruesome case in which Dr. Reynolds' work was pivotal involved a man who murdered his next-door neighbor, biting off one of the woman's breasts during the attack. Dr. Reynolds was called to the morgue to take impressions. Then the manacled suspect was brought to his operatory, along with his public defender, the district attorney, the prosecuting attorney, the court reporter, and four armed sheriff's deputies—all crowded

At the preliminary hearing, the match of the two impressions sets was so obvious to the public defender that the perpetrator entered a plea.

into Dr. Reynolds' office to watch Polyvinyl siloxane impression material used to record both the mandibular and maxillary dentitional status of the suspect. At the preliminary hearing,

the comparison between the suspect's dentition and the edges of the traumatized breast injury were so consistent that the public defender advised his client to plea bargain, to spare himself conviction under California's Special Circumstance law mandating the death penalty.

Not long before the PSA crash, Dr. Reynolds was pondering the inability of local law enforcement agencies

to communicate across county lines. He contacted Assemblyman Gene Chappie, his representative in Sacramento, to propose a mechanism for data sharing of missing person records among California's 58 counties—the kind of mechanism that would facilitate, for instance, the comparison of antemortem and postmortem x-rays. An elaboration of this concept was signed into law (Assembly Bill No. 81) in 1978 by then Governor Jerry Brown, and later revised and expanded with the advancement of computer software originally adapted for forensic dentistry by Dr. Norman Sperber, a prime mover in what became the National Criminal Information Center.

In the effort to provide bite mark evidence that conforms to the current rules of Expert Testimony under Daubert Rules of Admissibility, Dr. Reynolds has developed a bite analyzer. Casts of a suspect's dental models are mounted in an articulator. Air pressure is used to cause the model of the suspect's dentition to bite into fetal pig tissue, and the result is compared with models of the victim's bite wounds.

In 1983 Dr. Reynolds was elected president of the American Society of Forensic Odontology. Much more recently his peers have recognized his contributions to the field. At the turn of the millennium (2000), the American Society of Forensic Odontology established the Gerald Reynolds Humanitarian Service Award in recognition of his lifelong dedication to humanitarian, philanthropic, and community service—especially his work, in 1993 and 1994, to establish, under the Seventh-day Adventist Church's Global Mission, the first dental clinic in the Republic of Djibouti. Five years later (2005), having served the society for over 30 years, he was named its first member emeritus "For his valuable contributions to forensic odontology and especially for his contributions (including research grants and fundraising) to the American Society of Forensic Odontology. And this year Dr. Reynolds was presented the American Academy of Forensic Sciences, Odontology Section Lester Luntz Award, in recognition of his services to the field of odontology.

The actively retired dental sleuth speaks warmly of his forensic odontology friends and colleagues—Greg Golden, Gerald Vale, and Skip Sperber—as he enjoys his 10.2-acre mound in Penn Valley, with its view out across the Yuba River to Beale Air Force base and beyond.

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The International Dentist Program: from conception to successful reality

by Clyde Roggenkamp, DDS, MSD, MPH

Since its development by Lloyd Baum, DDS, at the Loma Linda University School of Dentistry in 1985, the International Dentist Program (IDP) has graduated more than 400 students from 78 countries.

The IDP is designed to allow qualified dentists from other countries to earn a dental degree that prepares them for licensure and dental practice in the United States. Eligibility for applying to the IDP requires a dental or equivalent dental degree from a World Health Organization-recognized, accredited college or university with a cumulative GPA of at least 3.0. Applicants also must have an acceptable GRE or GMAT score, and must have passed both American National Boards Parts I and II.

Early Inception

In the early 1970s, some states (including California) began to permit foreign-trained dentists to sit for state board examinations, usually following successful completion of National Dental Boards and simulated clinical bench tests. It became apparent that many foreign-trained dentists performed well on didactic tests but need additional clinical experience. As a result, some schools began offering advanced standing programs for such dentists.

The LLU School of Dentistry administration also recognized the need to offer foreign-trained dentists an opportunity to learn up-to-date clinical skills and obtain a DDS degree that would prepare them to sit for licensing examinations in the United States and Canada. This led to the beginning of the International Dentist Program at Loma Linda University.



Former and current IDP chairs, Drs. Fitzpatrick and Mitchell, bookend Ewa Parciak, ID'10, of Poland.

One of the School of Dentistry's pioneering faculty members, Dr. Lloyd Baum, had returned to his alma mater in 1982, after spending more than a decade teaching in New York and Connecticut dental schools, and became involved with LLUSD's General Practice Residency program. He soon recognized that the GPR program was not cost-effective for the School and for a short time introduced an advanced general dentistry residency. Then a serendipitous event took place.

After a meeting with the California State Board of Dental Examiners, Dr. Baum and Thor Bakland, SD'62, associate dean for academic affairs, proposed changing the one-year Advanced General Practice Program into an 18-month (two academic year) International Dentist Program. After obtaining University approval for the new program, the first three students were accepted in 1985. The faculty consisted initially of Dr. Baum and William Seibly, SD'59, PhD'81. They were later joined by John Whittaker, SD'67, and Bruce Pence, SD'65, the latter becoming director in 1994 and serving until 2003.

The School of Dentistry faculty was at first hesitant to accept this new and unusual program. With Dr. Baum's



Dr. Baum poses with early IDP students, circa 1985, and colleague William Seibly, SD'59, PhD'81.

extensive administrative experience, motivational spirit, and ability to promote this new and innovative concept, however, the faculty gradually grew to support the forward looking effort.

Groundwork for the IDP had started in 1983-1984, after Drs. Baum and Bakland reviewed the University of Southern California IDP curriculum, which was the only one in California at that time. They were intrigued by its potential to provide a different learning environment, one that emphasized a strong clinical practice experience. As a consequence, Loma Linda University School of Dentistry became the second California dental school to offer an IDP, followed by the University of the Pacific. Later, programs were started by the University of California at San Francisco and the University of California at Los Angeles.

Selection Process

The selection of candidates for LLUSD's IDP is based on a dexterity test, followed by an interview. The dexterity test involves examining the candidate's skills with chalk, plaster, wire-bending, hand pieces, and instrumentation. Approximately 100 applicants are invited to take the dexterity test. From those a small number are invited to an interview. An even smaller number is accepted. Currently, the class size is approximately 25 students per year.

Developing a Practical Curriculum

The unique educational program developed by Dr. Baum for IDP emphasized clinical experience supervised closely by faculty mentors and made possible by the advantageous faculty/student ratio. This permitted several positive outcomes. With close faculty supervision, IDP students could be assigned more

Advanced Restorative Training upgrades Adventist mission dentists

Beginning in 1990 or 1991, LLUSD IDP faculty began providing six-months of clinical education for foreign-trained dentists, primarily those serving in Adventist missions. Designated Advanced Restorative Training, the program's earliest participant was Dr. Victor Gil, an Adventist dentist trained in Pakistan who was providing dental care to the many Afghanis who fled the Russian invasion of their country in the 1980s and were living in refugee camps on the border with Pakistan.

Dr. Jan Paulsen, then president of the Trans-European Division of Seventh-day Adventists, became aware of the burden Dr. Gil had assumed, as well as the limitations he faced, and arranged for him to receive clinical tutoring at LLUSD. The University's plant manager found the visitors one of its rental apartments to live in. Dr. Thor Bakland and his wife Jean provided Dr. Gil, his wife and two children with the basics needed to live in it: bedding, the essential implements for a kitchen, and some modest furniture. Dr. Lloyd Baum took him under his wing clinically, and within a year Dr. Gil returned to his refugee mission, probably the best-trained dentist in Pakistan.

Dr. Larry Wu, a dentist trained in China, took the Advanced Restorative Training during the 2000-2001 school year and then became clinic director of Sir Run Run Shaw Hospital in Hangzhou, China. Less than two years ago Dr. Wu returned to Loma Linda to be baptized by Pastor John Brunt at the Azure Hills SDA Church, with his mentor and friend, Dr. Baum, attending the service.

Since 1990, 42 foreign-trained dentists have received clinical skill enhancement at LLUSD's Advanced Restorative Training program. Typically, the School provides half the tuition, and the National Association of Adventist Dentists the other half, with housing provided by the mission at which the indigenous dentist was working.



A consultant for several years to the Sir Run Run Shaw Hospital dental clinic, Thor Bakland, SD'62, meets with Dr. Larry Wu in his clinic office.

complex treatment situations. This was often made possible because of the students' extensive previous clinical experience. A significant, positive consequence was that the IDP became a very productive clinical program with a substantial financial benefit to the School.

The program started with six academic quarters lasting 18 months, accepting a new group of students every six months. In 2007, the IDP extended its 18-month curriculum to a full 24 months.

Faculty and Instruction

Specialists from across disciplines helped shape the IDP curriculum. Clinton Emmerson, DDS, prepared classes in pediatric dentistry, David Rynearson, SD'71, MS'87, and Milford Anholm, DDS, MS'62, taught orthodontics, and Donald Peters, SD'61, MS'69, PG'74, drove from his home in Idaho to present an intensive week of endodontics each year.

Part-time IDP faculty commuted from far and near. Harold Nemetz, DDS, traveled from Crescent City, California, and spent a day going through current literature and providing valuable three-inch-thick reference notebooks. Bruce Pence, Sr., SD'65, commuted from Oxnard two days per week, lodging overnight in a nearby motel. John Whittaker, DDS, a former LLUSD clinical instructor, came from Australia to teach in the regular pre-doctoral program and was later invited to teach in IDP. Even after retirement, Dr. Whittaker returns yearly to teach. The International Dentist Program has benefitted from a dedicated and enthusiastic faculty.

Past and present IDP leaders

Lloyd Baum, DDS, director, 1985–1993

Bruce Pence, SD'65, director 1994–2003.

Daniel Hall, DDS, PG'95, director, 2004–2007

Michael Fitzpatrick, SD'87, director, 2007–2010

Gregory Mitchell, SD'84, director, 2010 . . .

Dr. Clyde Roggenkamp extends thanks to Drs. Thor Bakland, William Seibly, and John Whittaker for their extensive interview information for this story.

Lloyd Baum: IDP pioneer

Although Dr. Lloyd Baum is easily recognized as the father of LLUSD's International Dentist Program, his significant contributions to dental research, education, innovation, and administration give him distinction in many other sectors as well.

Dr. Baum was born in Ashton, Idaho on May 11, 1923, as the middle child to Murray and Esther Baum. Under his mother's tutelage, Lloyd became an accomplished pianist; and it was riding to a piano performance with his Uncle Dale that he learned first-hand the experiences of a practicing dentist.



Dr. Lloyd Baum

Following Dr. Baum's graduation from Mt. Ellis Academy, he enrolled in Walla Walla College for pre-dental education. It was during this time that World War II broke out. Already enrolled in the Army Reserve, he became a buck private and was able to continue his education at the government's expense.

Dr. Baum's energy has always been legendary, as evidenced by the fact that he worked full-time at a feed mill, handling heavy sacks of grain, while in dental school, yet still had time to make the girls swoon while skating at the local roller rink.



Dr. Baum has always been in a hurry.

Following graduation in 1946 from the University of Oregon with a Doctor of Dental Medicine degree, and becoming one of its youngest alumni, Dr. Baum practiced for a short while and then joined the Navy. His two years of service sent him to Singapore, Shanghai, Tokyo, Borneo, Guam, Hawaii, Okinawa, Taiwan, and the Philippines.

At the National Association of Seventh-day Adventist Dentists (NASDAD) meeting in Seattle in 1951, Dr. Baum



Dr. Baum and Dr. Gurrinder Atwal ID'98

heard that the Adventist Church was going to establish a dental school. After meeting Webster Prince, DDS, he agreed to take postgraduate training in restorative dentistry at the University of Michigan. He then spent one year on the faculty of the USC School of Dentistry before joining Loma Linda University's fledgling institution, Loma Linda University School of Dentistry, to become one of its earliest clinical faculty. For a twenty-year period concluding in June, 1972, Dr. Baum was a key teaching clinician at the School, and earned a reputation as a superb role model of clinical resourcefulness and clinical precision in restorative dentistry and fixed prosthodontics. In addition to his full load of teaching responsibilities, Dr. Baum served at various times as a department chair, director of clinics, and an assistant dean.

In 1972, Dr. Baum accepted a position as professor of restorative dentistry at The State University of New York at Stony Brook, and then served as a professor of restorative dentistry at the University of Connecticut School of Dental Medicine.

It was Dr. Baum's vision to establish the International Dentist Program at Loma Linda University, and in 1985 the program accepted its first three students. Dr. Baum's leadership and influence was felt in this program until he retired from full-time service in 1993.

Dr. Baum's contribution to the dental profession includes developing the dental program at the University of



Dr. Baum with demonstration models

Montemorelos in Mexico, serving as the principal consultant from Loma Linda University in organizing and bringing to full operation the dental service at Sir Run Run Shaw Hospital in Hangzhou, China, authoring more than 100 articles in refereed scientific journals (and six textbooks), holding eight patents pertaining to dentistry, lecturing at hundreds of scientific sessions and postgraduate programs around the world, and receiving the Hollenbeck Memorial Prize for "development of operative materials, instruments, and techniques (including Goldent, a direct-filling gold, hand instruments, pin-retained casting, and a parallelometer)."

The International Dentist Program now has more than 400 alumni who have benefited from Dr. Baum's foresight and capable direction, dedication to dental education, and talent for resourcefulness and innovation. Through the years Loma Linda University School of Dentistry in particular, and the dental profession in general, has been enhanced by his excellent textbooks in restorative dentistry translated into several languages, his passion for teaching students, and his remarkable administrative and organizational insights.



LOMA LINDA UNIVERSITY
School of Dentistry



MaxiCourse® 2011

Continuing Education in Implant Dentistry

MAXICOURSE® DESCRIPTION

For more than 30 years, the Advanced Education Program in Implant Dentistry through the Continuing Dental Education Division has provided part-time didactic and clinical training in implant dentistry to general practitioners and specialists.

The 2011 LLU/AAID MaxiCourse® offers over 300 hours of lectures, hands-on workshop sessions, live surgical demonstrations, online lectures and clinical experiences placing dental implants on participants' patients. The LLU/AAID MaxiCourse® brings the experience of renowned instructors and clinicians from Loma Linda University and around the world.

The 10-month sessions (two days per month) also help prepare the participant to take the written portion of the AAID Associate Fellow Membership Examination. The didactic portion of the course includes information for beginners, intermediate and advanced clinicians in implant dentistry wishing to expand their knowledge in this field.

The program is designed to take the participants through a systematic learning approach of implant dentistry. *Starting with basic concepts, diagnosis, treatment planning, dental implant surgery and implant prosthodontics, the attendees have the opportunity to develop sequential treatment plans on their own patients and participate in performing surgeries with the assistance of experienced faculty and residents of the Advanced Education Program in Implant Dentistry.*

The attendees also experience hands-on workshops where procedures such as cone-beam imaging analysis, simulated patient-based dental implant surgery on life-like mannequins and guided-bone regeneration procedures on cadavers and pig jaws complete the understanding of basic and advanced dental surgical procedures.

During every monthly session, state-of-the-art audiovisual permits the participant the opportunity to observe live surgical demonstrations without missing any detail during the surgeries.

The 2011 series will add a hands-on workshop, utilizing cadavers and pig jaws in the anatomy laboratory for the training of advanced surgical procedures in implant dentistry.

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May 12-13

October 6-7

June 23-24

November 10-11

July 7-8

December 15-16

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D-1 Orientation: a practical revision

A major shift in the D-1 program brought entering students to the campus three weeks earlier than usual and paired them with George Lessard, PhD, emeritus professor, Dental Education Services. His objective: streamline the Biochemical Foundations of Physiology course to include topics with specific dental applications. He selected ten “hot topics,” including water, acids, enzymes, and metabolism, to become the core of the biochemistry course he designed, aware that for students this would be a review of what they had already studied to fulfill dental school prerequisites. “Here is how we look at metabolism as dentists,” he would say. “There’s nothing new in the course except the application to dentistry.”

Overriding all his presentations was Dr. Lessard’s conviction: Dentistry is a ministry, not just a job. He had a regular reminder: “At LLUSD our slogan is ‘I answer to a higher authority.’”

Supplementing the academic focus during three weeks of orientation, the 104 newly arrived students attended lectures by key personnel: Ronald Dailey, PhD, executive associate dean, on professionalism; Graham Stacey, PhD, associate dean, Student Affairs, on ethics; Lane Thomsen, SD’65, MS’74, chair, Oral Diagnosis, Radiology, and Pathology, on the history of dentistry; and 14 practicing professionals on dental pursuit areas, “just in case you want to start thinking about a specialty on the far end of these four years.”

Although teaching staff for a restorative class during orientation was not possible, laboratory sessions were de-

signed to move students quickly into the authentic task of getting their fingers wet. In four laboratory sessions orienting them to the clinic, students alternated in the role of patient and dentist. Heidi Christensen, SD’83, associate professor, Oral Diagnosis, Radiology, and Pathology, and Brian

Novy, SD’06, assistant professor, Restorative Dentistry, were providing students with hands-on experience to avoid a first-quarter experience of simply sitting down in a classroom and studying.

Initial instructions used kitchen vocabulary: “You need a mixing bowl, spatula, and

ziplock bag.” Donning gloves per the warning, “With glue on your hand, everything will stick to your hand the rest of the day,” the students were about to take impressions on each other and pour them up.

Another warning from Dr. Novy, “If you’re retaking impressions, stop at three and move to another partner. I’m not available to care for occlusal pain.”

Novice dentists were soon emerging with their first impression efforts—as well as lopsided moustaches, goatees, and ear-nose-cheek-hair smudges and smears from excess dental materials. Students with initial successful impressions turned to the task of making whitening trays.

At the end of three weeks, students were thinking “dental thoughts.” Their revised first quarter, freed up because of the initial biochemistry course, permitted a shift of a course previously taught second quarter. The clock was ticking, and the path to their chosen profession beckoned.



The LLUSD dentistry class of 2014 listen to Dean Goodacre.



Dr. George Lessard streamlined Biochemical Foundations of Physiology for first-year dental students.

Harold Schnepper, DMD, MSD, 1923-2010

by Clyde Roggenkamp, DDS, MSD



Dr. Harold Schnepper

The son of missionary parents, **Harold Ellis Schnepper** was born in Puiggari, Argentina, on December 16, 1923. In somewhat Spartan conditions, without a nearby hospital, baby Harold arrived in a girls' dormitory room at the River Plate School in Argentina.

Because his father was away on an important trip when Dr. Schnepper was born, the

newborn was nine days old when his father arrived to learn that the birth had not yet been registered. Told that a late registration fee would cost 50 pesos, the father provided the registry with the current day's date. Thus throughout his life, Dr. Schnepper's officially registered birth certificate date remained December 25.

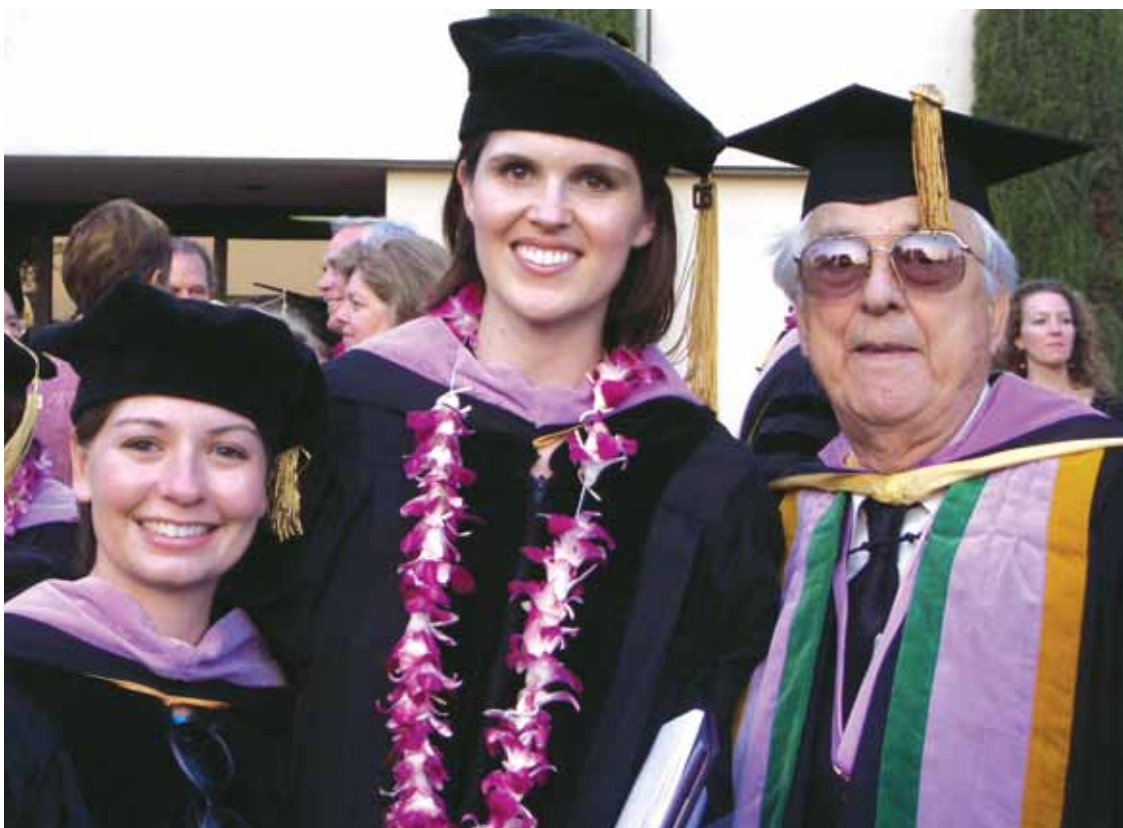
When the Schnepper family returned to the United States, Dr. Schnepper completed school at Yakima Valley Academy in Washington, pursued two years of premedicine at Walla Walla College, and received acceptance into the College of Medical Evangelists in 1942. But a mandatory draft date for induction into the army prevented his entrance into medical school. He could, however, achieve deferment

by entering dental school in Portland, Oregon, where the entrance day preceded the draft deadline.

His game plan: Start dental school and switch to medicine later; subsequently discovering he was well suited for dentistry, he stayed with it. Graduating from University of Oregon's dental in 1946 at the young age of 22, Dr. Schnepper moved with his bride, Clara Roper, to join a practice in Prosser, Washington; soon thereafter he established his own practice in Everett, Washington, while serving as half-time professor at the University of Washington School of Dentistry.

Invited to join the University of Washington's prestigious gold foil dentistry study group, Dr. Schnepper became one of the group's representatives at the next associated meeting of the dozen or so gold foil study clubs in the area.

Dr. Schnepper would become a pioneer in developing the lingual-approach class III gold foil restoration. Gold foil instruction was prominent in the 50s and 60s, being a significant part of the state board clinical requirement. Before he designed four special back-action hand instruments for achieving necessary angles of operation for a revised lingual approach, anterior teeth fillings were placed from the front, which usually left a small crescent of gold showing at their interproximal edge.



Dr. Schnepper celebrates the graduations of his grandniece (left), Heather Lauer, SD'03, MS'05, and his granddaughter, Gretchen Schnepper, SD'03, MS'05.

Joining the faculty at the new LLUSD faculty in 1953, Dr. Schnepfer received for his full-time appointment a twice-monthly paycheck of \$187. He subsequently became restorative department chair from 1967 to 1969. His continual teaching service became one of the longest of any LLUSD faculty members.

LLUSD will long be indebted to Dr. Schnepfer for fashioning a treasure trove of dental teaching models showing teeth with various cavity preparation designs carved out of dental plaster or stone. These models accurately reflect preparation designs taught at LLUSD and are painted to match the natural dentin and enamel of real teeth. Carving this series over a period of many years, he produced well over 200 mounted demonstration models including over 300 individual tooth models. Several gold foil teaching models of anterior teeth are mounted on revolving bases and stand over a foot tall.

These tangible, three-dimensional models surpass words and textbook line drawings in conveying preparation details. Student conformance to standards on lab projects is generally enhanced when Dr. Schnepfer's illustrative models are available.

In an extraordinary dedication to direct gold dentistry, Dr. Schnepfer mentored the Loma Linda Gold Foil Study Club for 35 years. With Bob Kinzer, SD'58, he co-authored the first comprehensive manual of gold foil techniques embodying the basic principles and latest esthetic modifications of cavity preparation design. This book, which achieved international recognition, has been translated to other languages including Japanese and German.

Dr. Schnepfer took a certain amount of pride in his unbroken 40-year attendance record at the midwinter national dental meetings in Chicago. His ardent advice to dental graduates was to join at least one dental organization in their special area of interest and become actively involved as officers.

His lifelong professional dedication exerts a continuing influence that would seem almost hereditary. One son, Jim, serves as public health programmer in Riverside County, California. His other son, Douglas Schnepfer, SD'74, practiced in Paradise, CA, until his death. Doug's daughter, Gretchen Schnepfer, SD'03, MS'05, practices orthodontics in Vancouver, Washington; his son is enrolled in LLU's School of Medicine.

Strong in spirit despite the loss in recent years, of two beloved family members—wife Clara and son Doug—Dr. Schnepfer continued to share his years of personal experience and expertise with students and faculty members



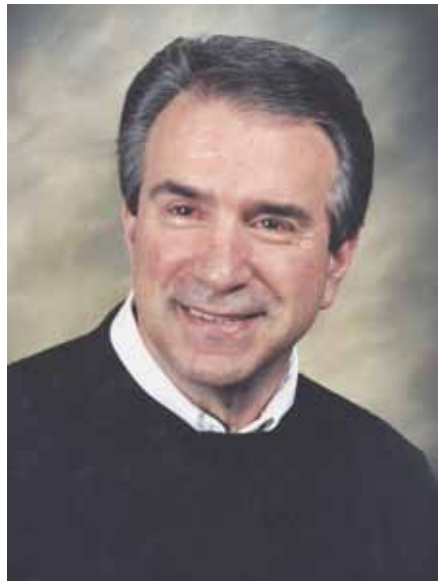
Dr. Schnepfer stands with a few of his demonstration models.

as an instructor in the laboratory portions of several classes, where he taught three half-days per week until shortly before his death on August 5, 2010. As a seasoned teacher, it seemed against his nature to be satisfied with minimal efforts. If students asked, "Is this good enough," he would often reply, "Is this the best you think you can do?" If not, he would suggest they bring their project back when it actually demonstrated their best work.

True greatness lies in daily excellence, mastered consistently over a lifetime. In many endearing ways, Dr. Harold Schnepfer represented a living legacy of the dental school; LLUSD was enriched by the continuing benefit of his invaluable service.

Roger Abrew

Joseph “Roger” Joel Abrew was born on September 2, 1943 and died August 25, 2010. He attended Golden Gate Academy and graduated from Pacific Union College with a master’s in mathematics and a minor in music. He taught math and music at Mountain View Academy for four years during which time his band, “The Royal Blues,” produced two records.



Dr. Roger Abrew

Opting for a career change, he attended Loma Linda University and received his dental degree in just three years, having distinguished himself in the clinic by completing 120 crowns (80 were required). After graduation, he accepted a teaching position under the mentorship of Dr. Lloyd Baum at the University of New York Dental School. A year later, in 1974, he returned to Vacaville and established his dental practice. Dr. Abrew worked as a dentist for 30 years until his retirement in 2004. A former Mountain View Academy student, Kurt Schindler, SD, '87, had joined his Vacaville practice and later his son, Joseph Abrew, SD'00, arrived to help continue the practice.

During his professional life, Dr. Abrew served on the peer review committee as well as filling a term as president of the Napa/Solano Dental Society. He also became a Dental Board examiner for the state of California.

An accomplished musician, during his college years Dr. Abrew won an invitation from Al Hurt to play with Hurt's Bourbon Street group in New Orleans, a gig which Dr. Abrew filled for a full summer. Later he would play first trumpet in the Solano Symphony.

An enthusiastic golfer, Dr. Abrew also flew his own Cessna 152 and then a 172 Cutless RG. He loved waterskiing and was skillful at skiing barefoot.

He is survived by his two children: Joseph and Lisa, and his two sisters, Diana Jennings and Darllyne Michael. In lieu of flowers, the family suggests that contributions be to the American Heart Association, Maranatha, or ADRA.

David Asatani

Only two months after a pancreatic cancer diagnosis, **David Asatani, SD'59, MS'68**, died September 29, 2010. Born in San Jose, California, Dr. Asatani attended Santa Clara High School and San Jose State University before graduating at Loma Linda University with a dental degree in 1959 followed by a 1968 master's degree in orthodontics. He practiced for 51 years in Covina, California, while retaining membership in the American Association of Orthodontists, Pacific Coast Society of Orthodontists, American Dental Association and San Gabriel Valley Dental Society.



Dr. David Asatani

A consummate fisherman, Dr. Asatani's skill and passion for the sport were known to many. A classmate says, “Dave was always supportive, in his very

quiet way, of the School of Dentistry and of our class projects. Maybe that's why he was so successful at fishing—because he was so quiet!” His nieces and nephews enjoyed his quiet regard for them, and his brother, Dr. Robert Asatani, says simply, “He was my best friend.”

Dr. Asatani is survived by his brothers Herbert and Robert, SD'57, MS'73; nephews Herb Jr., Steve, Paul, SD'93, and Daniel, SD'96 (wife Jayne, SD'93); niece Lisa; five grand-nephews, Alan, Andrew, Zachary, Nick and Ryan; and grand-nieces Brittany and Lexie.

In lieu of flowers, donations in Dr. Asatani's honor may be made to his church, Mountain View Japanese Seventh-day Adventist Church, Mountain View, California.

Vincent Brooks

Vincent Leslie Brooks, SD'72, died unexpectedly of a pulmonary embolism on August 24, 2010, near his home. Because of his service in the armed forces, he was buried with military honors in Cookeville, Tennessee.

Born during fierce bombing in Watford, England (February 12, 1944), Dr. Brooks' mother had raised him "beneath



Dr. and Mrs. Vincent Brooks

tables and in cupboards" for safety from the bombing. His parents brought him to the United States when he was two years old. Another war loomed in Vietnam just as he completed studies at La Sierra College. Drafted into the army, he demonstrated such adeptness

in a dental clinic at Fort Knox that his commanding officer declared, "I will provide you with all the dental education possible while you are here to prepare you for a dental career."

After graduation at Loma Linda University School of Dentistry (1972), Dr. Brooks moved to High Point, North Carolina, where he practiced dentistry for 35 years. There he established a very successful practice with a reputation for dental excellence and was beloved by his patients. His avocations included working in the out-of-doors and tinkering with technology; but he preferred recognition for being father to his identical twin girls, born on February 29, 1972, just months before his graduation at LLUSD.

An active member of the Cookeville SDA Church, he served in many positions including head deacon, finance committee chair, and staff member for Pathfinders.

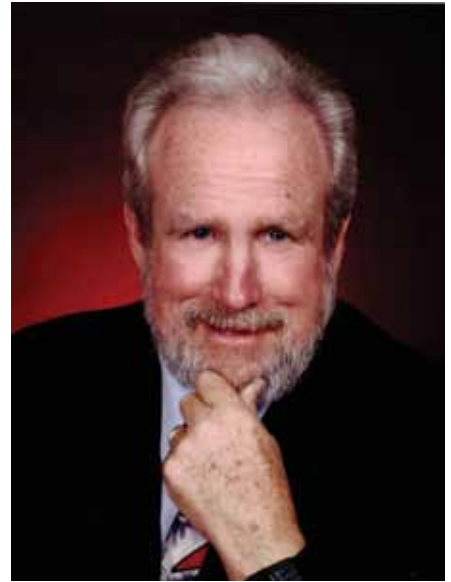
Dr. Brooks is survived by his wife of 45 years, Murleen Hoffman Brooks, two daughters and sons-in-law—Nicole and Jeremy Stoner of Cookeville, Leslie and Jim Sanderson of Landrum, South Carolina—sister and brother-in-law, Elizabeth and Gary Weber of Cleveland, Tennessee, and five grandchildren: Landon and Noelle Stoner, and Jonathan, Teddy and Charlotte Sanderson.

Because he carried a deep burden for paying off the mortgage at his home church, Dr. Brooks' family suggests that in lieu of flowers memorial gifts be made to the Cookeville SDA Church at 2700 Hwy 111 N., Cookeville, TN, 38506, with the memo line notation, "Brooks Memorial."

Ken Sanford

An active and productive life was cut short when **Ken Sanford, SD'71**, met with a motorcycle accident while on vacation with his wife near Boise, Idaho.

Born in Los Angeles, Dr. Sanford pursued predoctoral courses at Pacific Union College, where he met Marlene Darnell. The two graduated, married, and moved to Loma Linda in 1965, where Dr. Sanford completed dental school education in 1971. Exploring for a practice site while he worked in a Galt, California, office, Dr. Sanford determined that Galt would be a good place for a permanent office. His son, Steve (SD'97), would later join his practice there.



Dr. Ken Sanford

Combining a zest for active living with his practice, Dr. Sanford skied, backpacked, bicycled, and motorcycled. The family attests that he created "a wonderful life for his family." His friends and family benefitted from his plans for activities and trips involving them. "He could talk with anyone and easily made new friends," says his classmate, LLUSD Dean Charles Goodacre, recalling two recent trips the Sanfords and Goodacres took to Australia and China. Of his love for adventure, friends would comment, "He never lost the enthusiastic spirit of his youth."

But his patients became Dr. Sanford's focus at the office. He had time to sit and talk to them. It wasn't unusual for the assistant to come into the operator, take the bib off a patient and remind Dr. Sanford, "You have a patient waiting for you in the next room."

Active in the Lodi Fairmont Seventh-day Adventist Church, attentive to his family, dedicated to his profession, Dr. Sanford's untimely death on July 22, 2010, is an acute loss to those who cherished his friendship and to his family—wife Marlene, son Steve, daughter Kari McKinney of Sacramento, and four grandchildren.

Roscoe Webster

Born in Fairbanks, Alaska, on April 19, 1923, **Dr. Roscoe ("Rock") William Webster** died August 6, 2010, in Sandusky, Ohio.

When Dr. Webster graduated from Emory University Dental School in Atlanta, Georgia, in 1947, the first in his family to pursue dentistry, he was unaware that he was on

the way to establishing a dental dynasty.

He completed an internship in oral surgery at Cleveland Hospital (1948), then served during the Korean conflict in the navy and U.S. Air Force.

Practicing dentistry for 60 years at the family practice in Mansfield, Ohio, Dr. Webster enjoyed his occupation so thoroughly that he often referred to it

as his hobby. Thus it was that he passed his love of dentistry on to his children and grandchildren. Five of his six children are in the dental field. Seven grandchildren and five in-laws, a total of 17 family members, are dental students or careerists. Daughter Jill Kerbs (DH'80, SD'85) took over his practice when he retired.

Dr. Webster served as NASDAD president (1973-1974) and led several mission trips to Haiti, Mexico, and Turks & Caicos.

Dr. Webster is survived by his wife, Marian; three sons—Steve; John, SD'82; and Rock Webster Jr, SD'06—and three daughters—Susan Staker, RDH; Jill Kerbs, DH'80, SD'85; and Jodie McGill, DH'81—three sons-in-law—Rod Staker, DDS, James Kerbs, SM'87, and Ken McGill SD'83—three daughters-in-law—Mary Webster, Susan Webster, RDH and Debbie Webster, RDH. Other family members with dental and/or LLU connections include grandsons Michael Staker, SD'13, David McGill, SPT'12, and Steve Webster Jr., junior dental student, Ohio State University—granddaughters Stephanie Wendland, RDH, Amy Staker, SD'07, Stacie Elkhoury, RDH, Sandra Webster, RDH, Sara Staker, DH'08—grandson-in-law, Jad Elkhoury, DDS, and a granddaughter-in-law Lana McGill, SM'12. Dr. Webster had twenty-three grandchildren and six great grandchildren.



Dr. Roscoe Webster

Robert Wilkins

A lymphoma diagnosis in 1995 put a mere pause in **Dr. Robert Wilkins'** professional pursuits. During his final 15 years, he was awarded a PhD in educational psychology at USC (1996), held a faculty appointment first in cardiopulmonary science department of LLUSAH and then at the University of Texas. There respiratory therapy students, who called their textbook "Wilkins" after the senior author's name, discovered that the textbook author was now their department chair.

Dr. Wilkins, who was born in Camden, New Jersey, on April 21, 1954, received his first professional degree at Kettering College of Medical Arts in Ohio. There he also met and married Kristi Boas (DH'80, MA), current chair, Department of Dental Hygiene, LLU School of Dentistry.

Continuing his education at LLU's School of Allied Health, Dr. Wilkins joined the faculty while he steadily achieved research expertise and accompanying academic degrees. Authoring over 100 professional publications and producing four textbooks as chief editor, he also gained a reputation as a research specialist. In his final two years he became a valuable faculty member at LLUSD, assisting the outcomes assessment team, reviewing alumni surveys, teaching research in the dental hygiene program, and working with research students on their statistical designs.

The mother of his two sons and wife of 36 years, Kristi, comments on the 15 years that followed his initial diagnosis, which carried a two-year survival prognosis, and says simply, "He was my Hezekiah." She adds, "His fifteen-year walk with battling lymphoma and life's challenges provides his family and friends with the courage to continue their own journey." Survivors include his wife Kristi; two sons, Nicholas Ryan and Tyler Robert (wife Lindsey); a grandchild, Easton Tyler; mother, Ruby; and sister, Linda W. Chu, MD.

Memorial gifts to the School of Allied Health scholarship fund that Dr. Wilkins and his family established for respiratory care students will continue the positive impact of Dr. Wilkins' dedicated career.



Dr. Robert Wilkins

Eric Wolfe

Active in his Porterville dental practice until November 2009, when a massive infection left him a quadriplegic, **Erik L. Wolfe, SD'97**, died of pneumonia and subsequent onset of sepsis on September 20, 2010.

Born in 1961, the son of Stanford (SD'66) and Donna Wolfe, Dr. Wolfe grew up in Springville, California, attended Monterey



Dr. Erik Wolfe

Bay Academy and brought joy to classmates when he attended the thirtieth reunion of his academy class at homecoming in April 2010. Outfitted with a wheelchair driven with a mouthpiece, he sang with alumni during an Oceanaires concert. There he evoked the memory of a classmate in that select vocal group. Enroute to perform at the Dallas General Conference session, the classmate

recalls the 17-year-old's intense interest in following the map to track the trip's progress, which puzzled her. "Now," she says, "I can understand. Erik knew where he was headed." She adds, "We shall see him again if we are faithful."

Exploring career opportunities, Dr. Wolfe studied at Weimar, La Sierra, and Southern Adventist universities. While administering nursing home facilities, he completed predoctoral studies and entered LLUSD's class of '98. After dental graduation, Wolfe practiced dentistry with his father in Porterville, California, until taking over the practice in 2000. A former employee has reflected on working with Dr. Wolfe, "He was the greatest boss anyone could ask for."

A patient whose last appointment with Dr. Wolfe came right after she received a speeding ticket, was so impressed by her "special and caring" dentist. "He turned my mad to glad," she says.

Both his humor and good spirit have been cited by many who loved him and will miss him greatly. He is survived by daughters Kaitlyn and Lauren Wolfe of Tulare, California; parents Dr. Stanford and Donna Wolfe of Springville, California; sister Liana Wolfe, SD'90, of Asheville, North Carolina; and brother Patrick Wolfe, LLUAH BS'95, LLUSN, BS'98, of Loma Linda, California.

Memorial gifts can be made for the benefit of Erik's daughters through Bank of the Sierra, Porterville, CA 93257.

Ed Zbaraschuk

Dr. Edward Zbaraschuk, SD'74, who opened his Sequim, Washington, dental practice in 1974, and became an active community leader, died Monday, August 9, 2010, at home. A few months earlier Dr. Zbaraschuk had been diagnosed with signet cell adenocarcinoma.

Dr. Zbaraschuk was born in Prince Albert, Saskatchewan, Canada, on June 6, 1936, joining a bilingual (English and Ukraine) family. He worked as journeyman printer and foreman for the Herald Press in Prince Albert, where he met and married Melvina "Mel" Zary.

After graduating with a chemistry major at Walla Walla College, he worked as an industrial chemist at several corporations, including Crown Zellerbach



Dr. Edward Zbaraschuk

in Port Townsend. Completing dentistry at LLUSD with the class of 1974, he returned with his family to the Olympic peninsula.

Among his activities in the Sequim community, Dr. Zbaraschuk served as treasurer and president in Kiwanis and participated in the organization's annual Christmas tree fund raising project. An active lay leader at the Sequim Seventh-day Adventist Church, he taught an adult Bible class. He is remembered as a vigorous spouse, parent, grandparent, brother, and friend.

A family member credits Dr. Zbaraschuk's sense of purpose in personal life as an inspiration to him. From his efficiently thorough search, Dr. Zbaraschuk unearthed family documents that led to finding cousins in Poland, France, and Manitoba.

He leaves behind his wife of 51 years, Melvira; four children and their spouses—Richard, SD'89 (a partner in his father's dental practice since 1989), and Jennifer of Sequim; Tracy and Craig Reynolds of Sterling, Massachusetts; Cindy and Brent Robinson of Murrieta, California; Lori and Smari Thordarson of La Porte, Indiana—two younger brothers, Dennis and Ivan; and 12 grandchildren.

The family requests that memorial gifts be sent to the School of Dentistry.

It goes without saying that you're a pro with a half Hollenback carver,



but how's that employee manual coming along?

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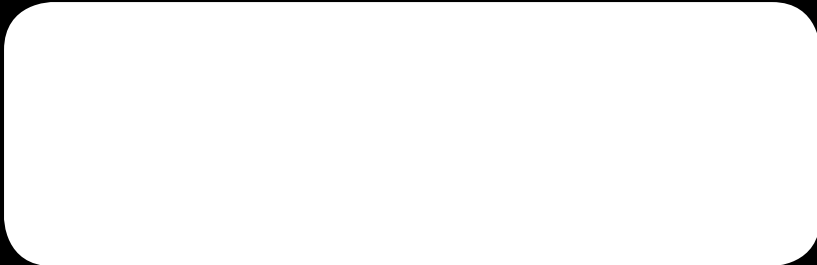




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