

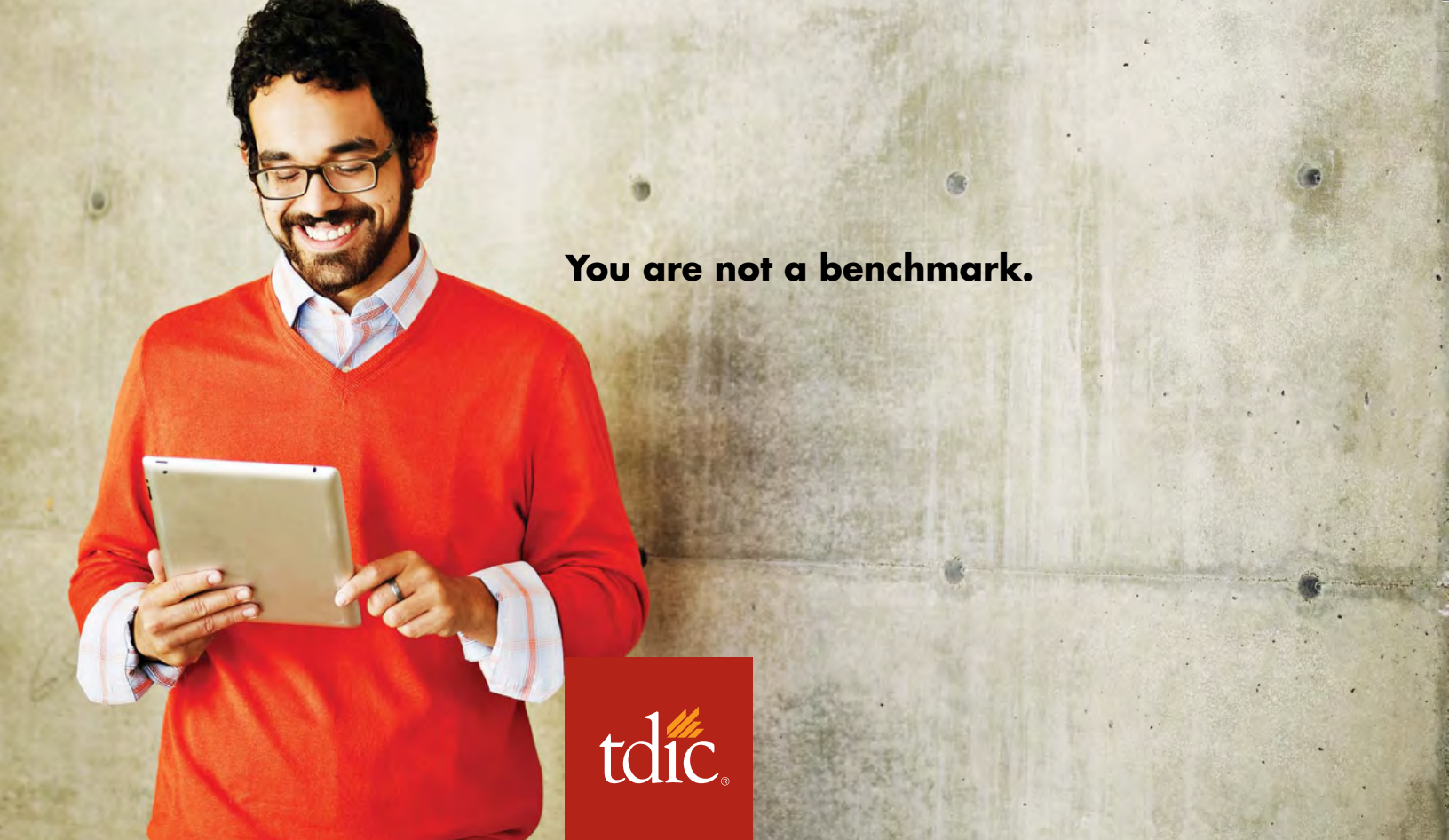
LOMA LINDA UNIVERSITY

Dentistry



Commencement 2014:
“You make us look good.”

Factors Affecting Pulp
Regeneration



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"It's the best thing I can do with my money— to invest in the School of Dentistry at Loma Linda University."
- Arlene Klooster



LOMA LINDA UNIVERSITY

Office of Planned Giving

LOMA LINDA UNIVERSITY DENTISTRY

VOLUME 25, NUMBER 2 SUMMER/AUTUMN 2013

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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.



Commencement Sunday, May 25, 2014: graduating Doctor of Dental Surgery class of 2014 president Roberto Espinoza addresses faculty, classmates, family and friends.

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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Cover: Commissioned as a Lieutenant with the Navy on commencement morning, James Gordon, DDS'14, is pictured with his wife, Lindsay, and their four children.



14



53



22

CONTENTS

**NEW POSITIONS FILLED:
BURDICK, LI, SHERWIN**
8-10

**ALUMNI STUDENT CONVENTION
CLASS OF '64**
14

**FACTORS AFFECTING PULP
REGENERATION**
18

STUDENT RESEARCH WINNERS
30

**COMMENCEMENT 2014:
"YOU MAKE US LOOK GOOD."**
34

OMNI DEAN
46

MARATHON MAN
49



49



46



38

Dean's message: *Studying ourselves*



In February 2016, the LLU School of Dentistry is scheduled for a site visit by the Commission on Dental Accreditation (CODA), the accrediting authority for all dental degree education programs in North America. Preparations include an 18-month “self-study” to promote institutional evaluation, awareness, and improvement. The self-study is a major undertaking and is important to document our combined programs’ status as a contemporary dental educational experience that meets the profession’s high standards. This event occurs every seven years and provides us the opportunity to reflect on how we can strengthen our School.

With a committed, constructive approach, the self-study will help us begin to consider creative ways to enhance our educational models and curriculum that better achieve our mission to meet society’s evolving needs. How we educate the next generation of dentists and dental hygienists is one way to have a profound effect on the future.

The self-study process anticipates the CODA site-visit and will scrutinize not only the pre-doctoral dental and dental hygiene programs, but also the advanced education programs, institutional finances, facilities, library resources, and affiliated clinics, as well as faculty and student resources. As we collect and review data from our departments and programs, we will inevitably generate transformative ideas for our future. I am very enthusiastic about this process and optimistic about its potential to give us the insights and courage to strengthen our School!

How we educate the next generation of dentists and dental hygienists is one way to have a profound effect on the future.

We are very fortunate to have Robert Handysides, DDS, MS, associate dean for Academic Affairs and Euni Cho, DDS, director of Assessment, to guide

us through both the self-study and the accreditation processes. They have developed an ambitious, inclusive plan—involving faculty, staff, students, and alumni—to gather data essential for a thorough evaluation of the School of

Dentistry. These data will be crucial to determining the direction of change.

I look forward to the results of this self-study because, as well as meeting and exceeding the accreditation requirements, it will help us understand how better to achieve our mission. It is an exciting time to be a health and science educator. I will keep you posted on the results of the self-study, and I appreciate your participation in this process.

As always, thank you for all that you do in support of LLU School of Dentistry.

A handwritten signature in black ink, appearing to read "Ronald J. Dailey".

Ronald J. Dailey, PhD
Dean, School of Dentistry

Alumni president's message: *Serving others defines us.*

Every Tuesday and Thursday evening, students from Loma Linda University School of Dentistry converge in Redlands for special nights out. Instead of hanging out with friends after long days of studying and treating patients, the students gather at the Blessing Center at Church Avenue and Stuart Avenue to spend several more hours of dental work to serve indigent persons of Redlands and surrounding areas. These students, led by Dr. Mark Carpenter (DDS, class of 1980), represent who we are and who we continue to aspire to be as the global LLUSD family.

In July 2013, the New Hope Free Clinic in Redlands welcomed the Compassion Clinic, which had been providing free dental care to the indigent and homeless at the Social Action Community Health System (SACHS) clinic in San Bernardino. Under Dr. Carpenter's supervision, LLUSD students now provide twice-weekly dental service at New Hope to the most needy and underserved members of the Inland Empire. To make the transition from SACHS to New Hope happen, students like Matthew Enns (DDS, class of 2014) and Eric Chen (DDS, class of 2014) have dedicated their time and resource to the establishment of the program in Redlands. Enns, for example, went to his home in British Columbia and returned with his family van to be used for the free clinic. Companies have donated dental materials, local LLUSD alumni have made contributions, and LLUSD has provided institutional support for the new launch.

Thanks to these collaborative efforts and dedication of student leaders, the dental clinic at New Hope has been open every Tuesday and Thursday after school, faithfully serving the needs of our community, never missing a day. The clinic operates eight dental chairs involving 24 dental students and serves about 20 patients each day.

The story of the New Hope Clinic illustrates who we are and what it means to be the family of Loma Linda University School of Dentistry.

First of all, it tells us stories of dedicated individuals. Dedicated and committed individuals are no strangers to us – starting with the administrators, faculty members, and staff who work tirelessly over the years and have placed our school on the map. Our pursuit of excellence and dedication to the profession is well known throughout the world. Our students also reflect the same dedication. Spending four to five hours each evening, twice a week, calls for an immense amount of commitment, especially with the students' busy schedule. The story of the dedicated individuals who run the dental clinic at the New Hope Clinic is an inspiration to us all.

Second, it shows us where our priorities lie. All of us remember the phrase "Service is Our Calling" that is posted



in many of our lecture and conference rooms at LLUSD. We follow a unique calling in the sense that our education focuses first on serving humanity. I always hear stories of students or alumni who are "addicted" to mission trips. For example, Jason Joo is a fourth-year dental student who has traveled abroad on mission trips almost every single school break since he started the DDS program here at LLUSD. Participating in such mission trips, local or abroad, requires financial sacrifice and time commitment. Without prioritizing service and mission, it is impossible to make such a commitment.

Third, it shows us how we should collaborate and work together as students and alumni to achieve great things. Students and alumni do not belong to two different groups. All the alumni once were students and the students will one day be alumni of LLUSD. We belong to one group called the LLUSD family. As a family, we are interested in helping and supporting each other. Students look up to the alumni, and the alumni provide guidance to the students. When the students and alumni come together, share common values, and work hand in hand to serve people in need, it is a most beautiful sight.

This is the story of our LLUSD family. I know that most of us already belong to a story that is similar to the Compassion/New Hope Clinic story. We regularly participate in mission trips with our local churches, volunteer at local health fairs, and provide pro bono dental care. Serving others is our second nature; it defines us. I thank you all for the great heart and love you give to your communities. We are proud to be the alumni of LLUSD.

A handwritten signature in black ink, appearing to read "Iris Choi". The script is fluid and cursive.

Iris Choi SD'10
President, Alumni Association



LOMA LINDA UNIVERSITY
School of Dentistry

Continuing Dental Education Courses 2014-2015

The Forensic Dentistry Side of Your Practice

September 14, 2014

Hot Topics in Infection Control and California Law

September 21, 2014

What in the World is That? A Review of Oral Pathology

October 5, 2014

Troubleshooting Removable Complete and Partial Dentures

October 12, 2014

Creating Predictable Restorative Results A Workshop Program

October 26, 2014

Emerging Technologies in Dentistry

November 9, 2014

Progressive Veneer Techniques for Optimal Esthetics

November 16, 2014

But Aren't They Just Baby Teeth?

December 7, 2014

Endodontic Symposium

January 18-19, 2015

To register and for more information call LLUSD Continuing Dental Education at (909) 558-4685 or visit www.dentistry.llu.edu



2015 LLU/AAID Implant MaxiCourse®

The 2015 LLU/AAID MaxiCourse® offers 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. Program runs one Thursday and Friday a month, with one Tuesday online session a month, March through December.

2015 Alumni Student Convention



Key Note Address by Ron Dailey, Dean, School of Dentistry

Changes at the School of Dentistry and the Profession — Do They Really Affect the Alumni?

Thursday, February 5, 2015, 8:30 a.m. to 10:00 a.m.
Centennial Complex

Following the key note address, join Dr. Dailey at the Alumni Association booth on the fourth floor of the Centennial Complex for some one-on-one time. This is your chance to interact with the Dean!

All Faculty, Staff, Students, Alumni and Vendors Reception

Thursday, February 5, 2015, from 4:30 p.m. to 6:30 p.m.

Centennial Complex, Fourth Floor

Come join us for a reception for everyone!

This is your chance to see the faculty and the students, as well as enjoy some food with the Alumni Student Convention exhibitors.

A meet & greet session will give alumni and students the opportunity to interact face-to-face regarding available practice opportunities. Alumni who are selling or leasing a practice, or looking for an associate to join their practice, will have the opportunity to meet students face-to-face who are interested in career opportunities. Students will be able to ask questions of alumni and both will benefit from getting to know each other!

If you'd like to participate in the practice opportunities event with the students, please contact Jeri Fowler at 909-558-4399.

Scientific Sessions

February 5 and 6

Laser Dentistry for the Auxiliary

February 5

Evaluating Your Bread and Butter

Radiology: Panoramic & Intraoral Imaging

February 6

Student Dedication Service

February 6

Dental Hygiene Luncheon

February 6

Class Reunions

February 7

35th Annual Anesthesia Symposium

February 8

Avoidance and Management of Complications in Implant Dentistry:

*Practical Prosthodontic Pearls
for Your Daily Practice*

February 9

**To register, or for more info, please call LLUSD Continuing Education at
(909) 558-4685 or visit www.dentistry.llu.edu**



LOMA LINDA UNIVERSITY
School of Dentistry

Jack Burdick leads Finance and Administration

John C. (Jack) Burdick IV, CPA(TN) MBA, joined the LLU School of Dentistry in January to fill the position of assistant dean for finance and administration.

Mr. Burdick directs the fiscal priorities and operational integrity of the School and ensures compliance with University policies and procedures. These priorities include preparation and administration of the School's department and program operating budgets, financial analysis, the implementation of financial controls, the development of pay scales, and the delivery of financial communications. He will also represent the School on several LLU financial and human resource administrative committees.

Dean Ronald Dailey, PhD, says, "We are delighted that Mr. Burdick has accepted our invitation to be the new assistant dean of Financial Administration for the School of Dentistry. His professional profile includes the academic pedigree, rich experience in academic and hospital accounting, and the personal characteristics and values we were seeking in a new chief financial officer." Dean Dailey applauds a priority expressed by Mr. Burdick to make the dental school finances more transparent.

A financial professional with 24 years of experience in accounting, finance, information technology, and financial aid, Mr. Burdick comes to the School of Dentistry following nearly seven years as senior finance administrator for Kettering College. That position included financial responsibility for 150 employees and adjunct instructors. His management of the college's non-profit finances produced an 11.2 percent five-year margin on \$77.1 million revenue. He collaborated with marketing and other business functions to produce a 19.2 percent five-year student enrollment increase, while holding non-payroll expenses to 2007 spending levels, even as he secured salary increases for all employed faculty (beyond annual increases). He also oversaw "clean" audits for 2008 through 2012 and the \$2 million renovation of a 45-year-old plant by investing in learning labs, classrooms,

common spaces, audiovisual facilities, security equipment, and other infrastructure.

Prior to his experience at Kettering, Mr. Burdick spent four years as director of student financial services at Union College, Lincoln, Nebraska, preceded by other business and finance positions in the for-profit sector. These included five years at Scientific-Atlanta, Inc., four years at MCI Telecommunications Corporation, and four years of public accounting in Baltimore, Maryland.

"I very much enjoy working in Adventist higher education," says Mr. Burdick, "and I'm pleased to collaborate with LLU faculty, staff and administration to continue supporting the lasting value that the School of Dentistry graduates demonstrate all around the world."

A Certified Public Accountant (Tennessee), Mr. Burdick earned his bachelor of arts degree in economics from the University of the South, Sewanee, Tennessee, in 1987, followed by a master of business administration degree (1989) with dual concentrations in accounting and management information systems from

the Vanderbilt University Owen Graduate School of Management, Nashville, Tennessee.

His wife, Janene, graduated from Southern Adventist University, Collegedale, Tennessee, with a degree in education. After teaching for a few years, she transitioned to the business sector. Having earned a brokerage license, she was an institutional trading desk manager during the couple's time in Atlanta. She transitioned from brokerage to motherhood while keeping up with her interests in marketing and customer service. As an accomplished internet entrepreneur, Janene operates a large eBay toy store. The schedule flexibility allows her to participate in the many school activities of the couple's four children (two sons, two daughters, ages 6-14).

Mr. Burdick is a great fan of professional baseball and football and local minor league baseball. He also appreciates very much classical music and jazz.



Jack Burdick, MBA

Yiming Li appointed associate dean for Research

The Loma Linda University Board of Trustees approved the appointment of Yiming Li, PhD, DDS, MSD, as associate dean for Research in the School of Dentistry, effective February 25. "This is a well-deserved appointment that reflects the elevated stature Dr. Li has achieved in Loma Linda University and the broader academic dental community," said Dean Ronald Dailey, PhD, as he announced the new position.

Dr. Li completed his DDS degree at Shanghai Second Medical University, College of Stomatology in Shanghai, China in 1977 and served on its faculty as an assistant teacher and researcher until 1982. Dr. Li then moved to Indianapolis, Indiana, to complete a master of science in dentistry degree in dental materials and operative dentistry at Indiana University, followed by a PhD in preventive dentistry and toxicology also at Indiana University Graduate School.

In 1987, Dr. Li became a research associate in the Oral Health Research Institute at Indiana University School of Dentistry. Over the next decade, Dr. Li served as director of the Cell Culture Research Laboratory, director of the Biocompatibility Core Facility, associate professor of toxicology, Department of Pharmacology and Toxicology, director of the Electron Microscopy/Confocal Microscope Facility, and in 1993 became director of the Cell Culture Research Laboratory where he served until 1997.

In 1997 Dr. Li was recruited to Loma Linda University as professor and director of the Biocompatibility and Toxicology Research Center until 2002, when he became director of the Clinical Research Program for LLU School of Dentistry. In 2004, Dr. Li assumed leadership as director of the Center for Dental Research at LLU School of Dentistry.

Dr. Li has served in multiple capacities including president of the Indiana section of AADR, U.S. expert on Biological Evaluation to ISO/TC106, chairman of ADA/SCDP Biological Evaluation and Tooth Bleaching Materials, consultant on Dental Products Panel U.S.

FDA, and consultant to American Dental Association and the California Dental Association. He has been an ad hoc reviewer of manuscripts for 16 journals and is a special reviewer for NIH/NIDR grants and small grant applications. He is an editorial board member of the *Chinese Journal of Dental Materials and Instruments and Dental Research & Application* as well as an international editorial board member for the *Shanghai Journal of Stomatology* and the *Journal of Dental Sciences*. Dr. Li has authored 110 articles and book chapters and 169 abstracts. In addition, he has presented 132 oral and poster presentations.

Since coming to the United States, Dr. Li has earned

grants of over \$18.4 million of which approximately \$11.4 million have come through the LLU Center for Dental Research.

Dr. Li has been an exemplary colleague, mentor, and friend to faculty and students in the School of Dentistry for the past 17 years. During his tenure at Loma Linda, he has helped numerous clinical faculty members become involved in research programs that have enabled them to achieve faculty rank promotions. In addition, he has helped to build the student and resident research programs to a level that has enabled LLUSD students to garner many state and national awards.



Yiming Li, DDS, PhD, MSD

Tim Sherwin directs development

Timothy Sherwin, MS, has joined the LLU School of Dentistry as senior development officer.

Mr. Sherwin is tasked to enhance the School's strategic plan and forward-looking mission by securing major gifts from alumni, grateful patients, and friends of the School—gifts that will enable the organization to continue to educate dentists and dental hygienists who through their professional practice enact its motto: "Service Is Our Calling." Mr. Sherwin will report to Dean Ronald Dailey, PhD, and Lisa Wright, LLU executive director for philanthropy.

"On behalf of the School of Dentistry, I am excited to have Tim Sherwin here with his experience and successful track record," says Dean Dailey. "Tim has a 'user friendly' personality that I know faculty and colleagues will enjoy."

A native of Michigan, Mr. Sherwin earned his bachelor of science degree in psychology and biology at Andrews University (1980) and a master of science degree (1982) in marriage and family therapy/counseling from Loma Linda University.

Before joining the School of Dentistry, Mr. Sherwin worked as a senior development officer for Andrews University, traveling to the West Coast every few weeks to visit with the School's alumni. Previous to that he spent a year working as a child abuse investigator for the State of Michigan's Berrien County.

With his MS in marriage and family therapy, Mr. Sherwin joined the 1,200-member Garden Grove SDA Church in 1982 as a minister of marriage and family. There he provided pre-marital and marriage and family therapy, coordinated interns from the LLU MFAM program, and held seminars on family living at schools, churches, and civic events. He also served as a Garden Grove police chaplain in the capacity of an emergency response worker.

But when the opportunity arose in 1986 to make a business of his love for water skiing and boating, Mr. Sherwin

established California Correct Craft, the first successful West Coast Ski/Air Nautique dealership. It was a business he ran for 23 years, 13 of them consecutively as the largest such dealership in the world. With annual gross sales exceeding \$9 million a year, he managed vendors, suppliers, and over 20 employees. As a successful entrepreneur, Mr. Sherwin established

owners' clubs and reunions, and frequently spoke at dealer meetings where he shared marketing methods, customer satisfaction strategies, and sales techniques. He also taught classes at local high schools and universities on topics pertinent to business startups, marketing and entrepreneurship.

After the California State government used eminent domain to take over his prime business location in Riverside, Mr. Sherwin "retired" in 2009 to the area of his Michigan upbringing. Two years later he emerged from retirement to work for a year as a child abuse investigator for Benton Harbor's Department of Health Services, before applying his therapeutic, entrepreneurial, marketing, sales and management skills to the role of senior



Tim Sherwin, MS

development officer for Andrews University.

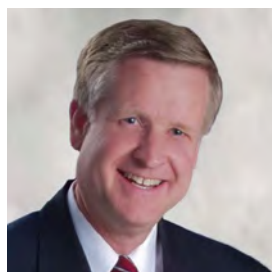
His new relationship with the School of Dentistry facilitates Mr. Sherwin's favorite pastime of riding motorcycles, especially with his sons, in the deserts and mountains of Southern California and Baja. He is married to fellow Andrews University graduate and registered dietician, Birgit Sherwin, who, like her husband, is an avid golfer. The couple's blended family includes four adult children.

"He floats easily among our alumni," says Dean Dailey, "and on behalf of the School of Dentistry, I can say we are gratified to have Tim Sherwin driving the School's development effort."



Biennial Medical/Dental/Health Professional CONVENTION

GATLINGBURG, TENNESSEE | OCTOBER 9-11, 2014



DIRECTOR, MEDICAL/DENTAL/HEALTH PROFESSIONAL DEPARTMENT, SOUTHERN UNION CONFERENCE **Jim Davidson**

Welcome to the 25th consecutive biennial Medical/Dental/Health Professional Convention. We invite you to fellowship together in the beautiful Smoky Mountains. We know your participation in the weekend will refresh your faith, renew old friendships, and reconnect you with your family and loved ones. Continuing education for physicians, pharmacists, dentists, nurses, and allied health professionals are also part of this special weekend. We look forward to seeing you there.



WEEKEND GUEST SPEAKER **Karl Haffner, Ph.D.**

Karl Haffner has spoken extensively to healthcare organizations on topics ranging from leadership issues to soul fatigue. His humor and enthusiasm are infectious, delighting audiences around the world with his passion and perspectives. His B.A. and Master's degrees in business administration, combined with his B.A. and Master's degrees in theology, along with a Ph.D. in leadership, make Karl a forceful and credible voice. Karl currently serves as the Senior Pastor for the Kettering Adventist Church in Kettering, Ohio, and also serves as the Mission Strategist for the Kettering Health Network.

SPEAKERS



Leif K.
Bakland



Eileen J.
Brantley



Willie L.
Davis



Naomi Florea



Holly Gadd



Henry Garcia



Barbara
James



Frances
Johnson



Michael
Liedke



David
Markoff



Philip Mills



Lilly Tryon

MUSICAL ARTISTS



Charles
Haugabrooks



Carolina
Heart-Song

GOLF TOURNAMENT

A Golf Tournament will be held at Gatlinburg Golf Course on Friday, October 10, at 11:30 p.m. Advanced registration is required by September 30, 2014.

"As challenging as it is beautiful, Gatlinburg's Golf Course features one of the most dramatic golf holes in America. Golfers say the 12th hole and the scenic beauty of the course is the reason they keep coming back year after year."

For more information or to register online go to,
WWW.SOUTHERNUNION.COM/MEDICALDENTALRETREAT

“The aroma of life”

Alumni Student Convention 2014—dedication service

Loma Linda University Provost Ron Carter, PhD, welcomed students, faculty, relatives, friends and well-wishers to the School of Dentistry’s 2014 student dedication service, Friday evening, February 7, at the LLU Church sanctuary.



LLU Provost Ronald Carter, PhD, welcomes School of Dentistry dedication service attendees.

Dr. Carter reminded his audience that “Loma Linda University School of Dentistry is a world leader among dental schools. It embodies mission-focused learning,” he said, “the mission of continuing the healing ministry of Jesus Christ through education, research, and service symbolized this evening in the dedication of the Bible and the scientific symbol of the long white coats. LLU is known,” the provost added, “for its blending of faith and reason, and it is to that that we give our dedication and our spirit tonight.”

Following an invocation by Dean Ronald Dailey, PhD, musical praise was provided by a vocal ensemble of five School of Dentistry students: Michelle Goh, D2, Jeremy Haines, D4, Kyim Mung, D1, Mylene Reyes, DH2 (BS),



White coats and Bibles set for dispersal.



Vocal ensemble (L-R): Cheiryl Pactanac, D1, Michelle Goh, D2, Jeremy Haines, D4, Mylene Reyes, DH2 (BS), and Kyim Mung, D1

and Cheiryl Pactanac, D1, as they performed “Well Done” by Moriah Peters.

In a brief address entitled, “The Aroma of Life,” Randy Roberts, DMin, senior pastor, LLU Church, meditated on life’s “watershed moments”—a baby’s birth, a graduation, a wedding. “This evening is a watershed moment,” he said, because “you come this evening . . . to receive not only the blessing of your school but of your God—that you might go from this place to do His bidding in the world.”



Pastor Randy Roberts delivers on “the aroma of life.”



Kristi Wilkins, MA, chair, Department of Dental Hygiene, calls the names as Dean Dailey presents a Bible to Amy Nguyen, DH1 (BS) as Kelsey Nanchy, DH1 (BS), leaves the platform.

And “His bidding” Pastor Roberts found in the second book of Corinthians, verses 14-16: “But thanks be to God, who . . . uses us to spread the . . . pleasing aroma of Christ . . . an aroma that brings life.” The pastor wondered what that might look like in the life of a dental or dental hygiene student. He found an answer in Micah 6:8: “You will have the opportunity to spread the aroma of life through your actions, if you are known for ‘acting justly’; if you are known for ‘loving mercy’; and if you are known for ‘walking humbly with your God.’”

A brief video was shown, named after the School’s motto, “Service Is Our Calling,” that summarized LLUSD service learning opportunities.



Scott Smith, DDS'09, assistant professor, ODRP, helps Wael Bekhit, D4, don a white coat.



White coat recipients recite the dental pledge.

And then, at the calling of the names, first- and final-year dental hygiene, doctor of dentistry, and International Dentist Program students—332 all together—took the stage individually to receive embossed Bibles (first year) and monogrammed white coats (graduating classes) courtesy of the School’s Alumni Association.

With all Bibles and coats dispersed, Iris Choi, DDS'10, assistant professor, Restorative Dentistry (and LLUSD’s new Alumni Association president), provided a prayer of dedication; and Scott Smith, DDS'09, assistant professor of Oral Diagnosis, Radiology and Pathology, led students and faculty in reciting the dental pledge.

School of Dentistry students Douglas Baasch, D4 (cello), Ruth Cho, DH2 (piano), Miranda Kore, D1 (trumpet), and Leanna Leigh Ursales, D4 (violin), made up an instrumental ensemble that rendered Alan Hovhaness’ “Prayer of St. Gregory.”

At this February’s dedication service, the School of Dentistry continued its recent practice of giving engraved bibles to new faculty—eleven this year.



Leanna Leigh Ursales, D4 (violin), and Douglas Baasch, D4 (cello), play the “Prayer of St. Gregory.” Hidden from view are Miranda Kore, D1 (trumpet), and Ruth Cho, DH2 (BS), at the piano.

54th Alumni Student Convention

A relaxed and retiring Lane Thomsen, DDS'65, MS'74, emceed the 54th LLU School of Dentistry Alumni Student Convention at the San Bernardino Hilton. The banquet was well attended, the food was terrific, and the company was congenial.

Since 1961, most School of Dentistry alumni have known Dr. Thomsen well enough, as either a fellow student or a professor, to be aware that he can tell a good story.



Dr. Lane Thomsen takes his emcee duties very seriously.

He began by noting that the weekend's dental hygiene 50th year classes (1961-1964) had "produced an astonishing number of alumnae of the year: 22 of you! Patricia Emmerson from the class of 1961, Mary Quishenberry from the class of 1962, Sharon Golightly from the class of 1964, and all 17 of you from the class of 1963."

Many members of the honored classes appeared in an entertaining sequence of video interviews. "We weren't dogs," announced Kathi Swanson, BS'62 (DH), MBA, one of the dental hygiene golden girls, explaining away the fact that none of her classmates had been invited on a date by the end of two months at the School of Dentistry.

Carole Miller, BS'63 (DH), said their class "was mischievous, talkative, [and] a little overwhelming to Mrs. Bates, who wasn't sure if we were serious enough."

"We couldn't wear pants," recalls Darlene Vitelle, BS'63 (DH). "We had to wear a dress and it had to have long sleeves, had to come below the knee, button down the front and had to have a collar."

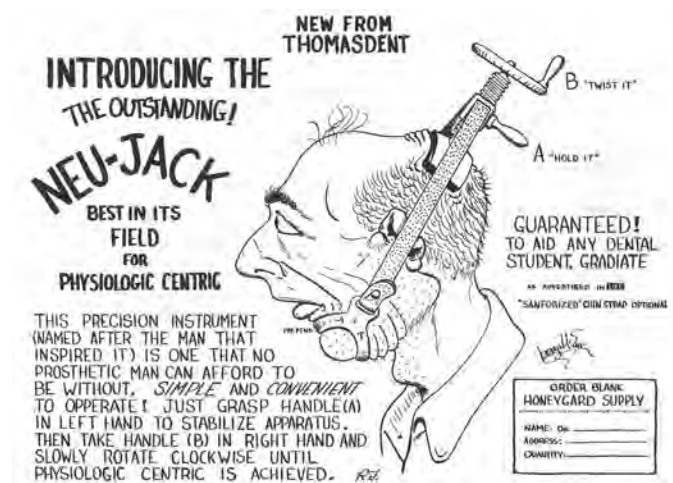


Fig. 1

Brenda Smith, BS'62 (DH), "loved the small intimacy of the place and made lifelong friends from day one."

Dr. Thomsen culled some interesting memorabilia from *Contriangle*, a student publication that included everything from poems by faculty to articles on oral pathology, including one on warts. One *Contriangle* piece explained the "drop of men in the boys' dorm, because the dean had mentioned that married men finished at the top of the class."

Marlene Schultz, the sole female in the dentistry class of 1965, still works three days a week, Dr. Thomsen reported. And he put on the screen beautiful diagrams by Larry McEwen and Duane Wacker—"procedures you can do in dentistry: 'The Revolutionary High Velocity Amalgam Plugger; from Thomasdent, the CAST-I-Chair, answer to the one-appointment cast restoration'; and, again from Thomasdent, the 'outstanding! NEU-JACK best in its field for physiologic centric'" (see Figure 1).



Seasoned alumni friends (L-R) Martin Nelson, DDS'57, Roger Lindner, DDS'57, and Jim Crawford, DDS'60, share a laugh.



Low lights and high spirits marked the gathering of alumni for dinner at the Hilton.

Thomsen said he “would never forget a play put on by the seniors entitled, ‘How to Succeed in Dental School Without Really Trying.’” Songs from the play included “A Dental Hygienist Is Not A Toy,” “Postum Break,” and “The Faculty Way.”

Dr. Lane told the unlikely story of a student working all morning to seat a crown on a patient. “Finally had it ready and as he presented it into the patient’s mouth, it slipped out of his fingers and the patient swallowed it. The student said, ‘Either you give it to me this morning or you give it to me tomorrow.’ The patient got a determined look on his face, turned to the cuspidor, put two fingers in his mouth, and delivered the crown with a lot of other stuff.”

After presenting a cultural history quiz to the gathering, Dr. Thomsen said he had been “waiting a long time to talk about this. I was a second-week freshman and you were sophomores. First test in Dr. [Melvin] Lund’s class. Test was handed out. We looked at the test and looked at each other and thought, ‘Where did this come from?’ We’d never seen any questions like this before. ‘What color is a tooth before it erupts?’ The questions were a spoof from the sophomores.” Dr. Thomsen deadpanned, “We learned a lot from your class.”

In honor of the fiftieth anniversary classes past and present, Dr. Thomsen asked Dean Dailey to help him place 2.25-inch Alumni Association, School of Dentistry brass medallions around the necks of each alumna present from the dentistry classes 1957 through 1964 and the dental hygiene classes of 1961 to 1964.

As has become tradition, the following roster of those now missing from the honor classes of dental hygiene and dentistry was scrolled on screen with photos while Josh Groban’s rendition of “You Raise Me Up” played in the background.

DENTAL HYGIENE

Margaret Alice Murray ('61)
Patricia Emmerson ('61)
Sandra Lou Ross ('61)
Glenna Finley ('62)
Caroline Jeanene Kroll ('62)
Ellamae Watts Skaben ('64)
Judy Vermillion ('64)

Claire Norman Cook
Johnny DeVincenzo
Eldon Dickinson
James East
James Edmister
George Foust
Richard Lawrence Halburg
Wilton Hartwick
Marmond Harold Hempel
Delmar Lee Herrick
Donald Dean Jeffries
John Rozema
Marvin William Schroeder
Harold Daniel Utt
Edward P. Johnston

DENTISTRY

Class of 1964
R. Alden Banner
Oscar Domondon
Donald Allen
Mervin Becker
Hollis Cochran

The occasion included a surprise for the emcee. Dr. Thomsen asked Dean Dailey to come up and face a vote by the assembled alumni to make the dean an honorary alumnus so that he could be named the School’s 2014 Distinguished

Alumnus. As Lane began, “Ron, I am honored to present you with the 2014 Distinguished Alumnus Award,” Dean Dailey interrupted to say, “Lane, I am on the Alumni Association

Board, and I know for a fact that I was not nominated. In fact, I participated in the unanimous vote to name YOU 2014 Distinguished Alumnus.”

While Lane attempted to regroup, Dean Dailey reviewed Dr. Thomsen’s bonafides:

Lane Thomsen, DDS’65, MS’74, joined the faculty in 1970, just four years after he graduated, and has been here ever



Class of 1984 dental hygiene alumni reunite (L-R): Tammi Henning, Sonja Lampasi, Laura Reindel, Martha Redfearn, Adrienne Gonzales, Rebecca Adams-Mangum.



Twenty-five class of 1964 alumni pose with their LLUSD medallions. Left to right: Byron Moe, Duane Wacker, Arthur Lambert, Arni Asgeirsson, Tony Theodorou, Frank Bonnet, Dwayne Nash, Donald Hickman, Si Trenchuck, Melvin Sage, Gerald Douglass, Daryl Wheeler, Gerald Muncy, James Neff, and Noel Bixel

since. He served the Department of Oral Diagnosis, Radiology Pathology once as interim chair, once as associate chair, and twice as chair. He has consistently received some of the highest course evaluations from dental and dental hygiene students, including comments such as, "Dr. Thomsen is very good at his job; he makes this class great." "He is an absolutely wonderful teacher." And "I love Dr. Thomsen's sense of humor."

He received the School of Dentistry Distinguished Service Award in 2005 for his outstanding contributions to its

education and service commitments, and in 2011 received the Loma Linda University School of Dentistry Teacher of the Year Award.

Lane was born in Fortuna, California, which is an entire 18 miles from where he currently lives in Eureka, California. He was recruited to the School by Dean Charles Smith during a slow day of fishing in Humboldt County, after Lane mentioned that he really liked oral pathology while in dental school. Dr. Thomsen enrolled as the last resident at LLUSD to complete a master's in oral pathology and has remained on faculty ever since.

Students and faculty, and now alumni, know that when Dr. Thomsen walks into a classroom, faculty meeting, or homecoming banquet, he is likely to be spawning mischief while getting the agenda accomplished. He chaired the Faculty Council from 2000 to 2002 and again from 2004 to 2010, where he honed his talent for keeping everyone's attention during potentially sensitive meetings.

Lane, your decades of service, your reputation for honesty and integrity, and your humor are only a few of the reasons you are being presented with this award that says, "An exemplary Christian Leader, Respected by Colleagues, Admired by his Profession, Community, Church and School, and one who represents the highest ideals of his alma mater."

Dr. Thomsen received a standing ovation from his peers and then Dean Dailey introduced the new Alumni Association president, Dr. Iris Choi.

"Succeeding Gary Chan, DDS'89, MS'95, Iris Choi, DDS'10, grew up in Seoul, Korea. She maintains four licenses:



A nonplussed Lane Thomsen accepts the School's Distinguished Alumnus Award from Dean Dailey.



Dr. Choi enjoys Dean Dailey's introduction of her as Alumni Association president.

dietitian, elementary teacher, dentist, and, the most difficult, a driver's license, which she failed twice.

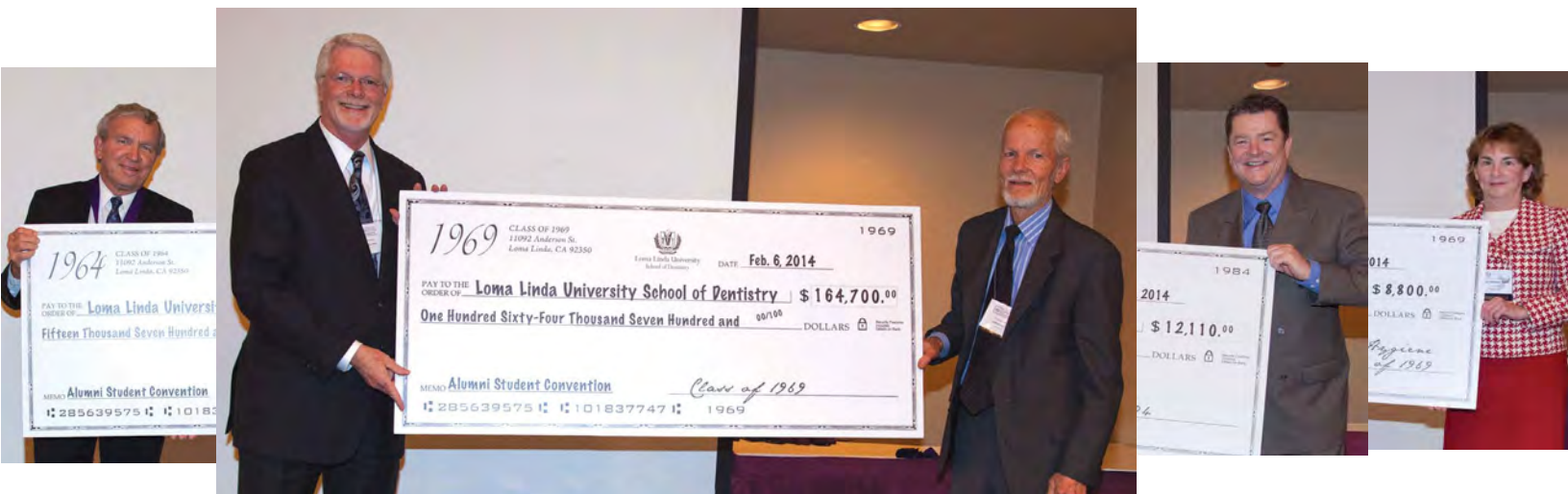
"Immediately upon graduating in 2010, Dr. Choi began teaching in the Department of Restorative Dentistry. She treats patients in the Special Care Dentistry Center. Her husband, Julius Nam, PhD, JD, is an attorney for the US District Court in Riverside. She has two sons, one at UC Santa Barbara and one at Andrews University. She claims expertise in the fields of shopping, sleeping, and making avocado eggrolls."



Jim Crawford, DDS'60, and Monvyl Berto, multimedia specialist, Department of Instructional Media, enjoy one of Lane Thomsen's stories.

Thanking Dr. Dailey, Dr. Choi invited four alumni to present class contribution checks to the dean. Doing the honors were Kristi Wilkins for the dental hygiene class of 1969—\$8,800; Greg Mitchell, dentistry class of 1984—\$12,110; Quint Nicola, dentistry class of 1969, \$164,700; and Duane Wacker, dentistry class of 1964, \$15,700.

A total of \$201,310 in contributions to their alma mater was an encouraging way for the School's alumni to conclude an already stellar evening.



(L-R): Duane Wacker, representing the dentistry class of 1964, presents Dean Dailey with a check for \$15,700. Quintes Nicola, representing the dentistry class of 1969, presents a check to Dean Dailey for \$164,700. Greg Mitchell, representing the dentistry class of 1984, presents Dean Dailey with a check for \$12,110. Dental hygiene class of 1969 representative Kristi Wilkins presents an \$8,800 check to Dean Dailey.

Factors Affecting Pulp Regeneration

Mahmoud Torabinejad, Robert P. Corr and George T. J. Huang

The following article is adapted from chapter 6 of Mineral Trioxide Aggregate: Properties and Clinical Applications, First Edition. Edited by Mahmoud Torabinejad. Copyright 2014 John Wiley & Sons, Inc. Published 2014 by John Wiley & Sons, Inc.

Pulpal necrosis generally occurs as a result of bacterial infection from caries, infractions, or frank exposure of the pulp to contamination of the oral cavity.¹ Traumatic luxation or avulsion injuries associated with severance of the blood supply result in pulpal ischemia, which also leads to necrosis and often a secondary infection with bacteria.² Teeth with necrotic and infected pulps are routinely treated with endodontic procedures involving cleaning, shaping, and obturation of the root canal systems with a

high rate of long-term success.³ The consequence of pulpal necrosis in immature teeth, however, is the cessation of root development, making endodontic treatment with conventional techniques and materials difficult or impossible. Immature teeth have open and often divergent apices that are not suitable for complete cleaning and obturation with traditional materials. In addition, because of their thin walls, these teeth are susceptible to fracture after treatment.⁴

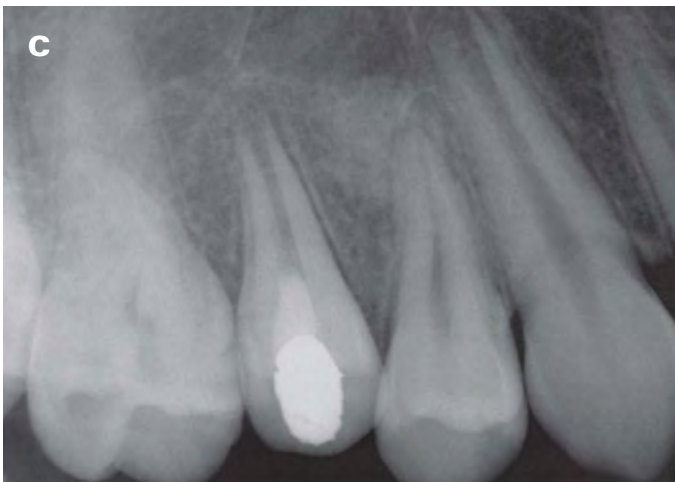


Fig 1. (A) A preoperative radiograph of a maxillary second premolar with an open apex, necrotic pulp, and a periapical lesion. (B) After making an access cavity into the root canal of this tooth, its canal was cleaned and disinfected using triple antibiotics. (C) Three weeks later, PRP was placed inside the canal, which was sealed with a layer of MTA and Cavit. A week later, a permanent filling was placed in the access cavity. (D) A radiograph taken 15 months later shows resolution of the periapical lesion and thickening of the root canal walls. The tooth was sensitive to both cold and electricity. Because of its sensitivity, a root canal was performed on this tooth.

Obtaining an adequate apical seal is widely accepted as a tenet of endodontic).⁵ Teeth with necrotic pulps and immature apices present special challenges to clinicians during obturation. Apexification procedures that involve the production of an induced or artificial apical stop can allow for condensation of obturation materials. However, apexification procedures do not promote continuation of root development, nor do they increase fracture resistance of the root walls.

The ideal outcome for a necrotic immature tooth would be the regeneration of pulp tissue into a canal that is capable of promoting the continuation of normal root development. The advantages of pulp revascularization lie in the potential for reinforcement of dentinal walls by deposition of hard tissue and the potential for the development of an apical morphology more appropriate for conventional endodontic therapy if future treatment becomes necessary.

The potential for revascularization and continued development of replanted teeth has been well-documented in the dental literature. However, the presence of infection has been shown to interfere with this process.^{6,7,8} It has therefore traditionally been thought that successful revascularization cannot be an expected outcome after a tooth has become infected. However, there is a growing body of evidence to suggest that revascularization of the pulp space, along with continued growth of the root, may in fact be possible after pulpal necrosis and apical pathosis in teeth with immature apices.

Torabinejad and Turman presented a case of a child with a maxillary second premolar with necrotic pulp and an open ape.⁹ The pulp ultimately became necrotic with concomitant development of symptomatic apical periodontitis (Fig. 1). The canal was accessed, irrigated with sodium hypochlorite, and treated with triple antibiotic paste. After three weeks, PRP was processed from the patient's own blood and was injected into the canal space. The canal was then sealed with MTA, Cavit, and an amalgam restoration. After five and a half months there was radiographic evidence of resolution of the periapical lesion, continual root development, and canal wall thickening. Clinically, the tooth responded positively to vitality testing. The authors suggested that PRP can be an ideal scaffold for revitalization procedures. Despite apparently successful revitalization of the pulp space, the patient complained that the tooth had become sensitive, and therefore root canal treatment was performed. The previously revitalized tissue was removed and was processed for histological evaluation. Examination of the recovered tissue revealed presence of vital connective tissue similar to that of a normal dental pulp. This is the first indication in the dental literature that pulp tissue may be regenerated in a human tooth with the use of PRP.

Elements needed for pulp regeneration

The possibility for regeneration of normal pulp capable of dentin production requires the potential for undifferentiated cells to generate new odontoblasts. The presence of human dental pulp stem cells (DPSCs) was reported by Gronthos *et al.*¹⁰ DPSCs are a subpopulation of mesenchymal stem cells (MSCs) and they behave differently from the best known MSCs from bone marrow, normally termed bone marrow-derived MSCs (BMMSCs) or BM-derived stromal cells (BMSCs). DPSCs and BMMSCs have different gene expression profiles and differentiation potentials. When mixed with hydroxyapatite/tricalcium phosphate and transplanted into an *in vivo* environment, BMMSCs form ectopic ossicles containing bone trabeculae and marrow, whereas DPSCs form a pulp/dentin complex and do not form marrow tissues.¹¹

DPSCs cells have subsequently been shown to be associated with the microvasculature of the pulp tissue.¹² Immunoselection procedures have allowed for isolation of DPSCs for investigation.¹³ Gronthos *et al* isolated DPSCs and transplanted them into the subcutaneous tissues of immunocompromised mice.¹² They found that the regenerated connective tissue formed was a dentin-pulp-like structure, providing evidence that stem cells are present in the pulps and are capable of differentiation. After recovering the transplants three months postoperatively, they found that 15 percent of the cells were of host origin, demonstrating the self-renewal capacity of the donor stem cells.

Similar findings have been reported in other investigations. Batouli *et al* isolated human DPSCs and transplanted the cells, with or without associated dentin from the host tooth, into the subcutaneous tissues of mice.¹⁴ The DPSCs differentiated into odontoblasts at four weeks and generated hard tissue identified as dentin by immunohistochemical staining. Eight weeks post-transplant, a dentin-pulp complex was observed, with pulp-like tissue containing connective tissue, blood vessels, and odontoblasts associated with the newly formed dentin. Reparative dentin was found on the transplanted dentin. A mature dentin-pulp complex was observed at 16 weeks. The authors concluded that DPSCs are not only capable of differentiation into odontoblasts, but that they also have the potential to recruit other host cells to form the pulp-like complex.

Huang and colleagues studied DPSCs *in vitro*, and confirmed that the stem cells in contact with a dentin surface are capable of differentiating into cells of odontoblast morphology with a process extending into existing dentinal tubules.^{15,16} They theorized that acid treatment of dentin may solubilize various noncollagenous matrix components and growth factors which might have an inductive effect on the differentiation of odontoblast progenitor cells.

Another type of human stem cells similar to DPSCs was discovered and reported by Sonoyama *et al*, termed

stem cells from the apical papilla (SCAP). These stem cells reside in the apical papilla, which is located at the apical end of the developing roots.^{17,18} Stem cells from the apical papilla are slightly different from DPSCs in several ways: (i) SCAP express CD24 and survive (while DPSCs do not), and (ii) SCAP have greater population doubling, telomerase activities, migration ability, a higher proliferation rate and dentin regeneration capacities in comparison to DPSCs.¹⁷ Based on these features, SCAP are considered to be a more immature type of stem cells than DPSCs and are likely to be responsible for giving rise to root odontoblasts and, therefore, the formation of root.

Subsequently, Huang and colleagues demonstrated the *de novo* regeneration of pulp in an emptied root canal space using SCAP and DPSCs.¹⁹ They not only showed that pulp tissue can be regenerated, but also that the deposition of newly formed dentin-like mineral tissue on the root canal walls does occur. This finding suggests that these DPSCs and SCAP are capable of reconstituting lost pulp tissue and can differentiate into odontoblast-like cells to form new dentin against the existing dentin walls.

Role of DPSCs and SCAP in revitalization and regenerative endodontic treatments

The aforementioned studies demonstrate that the presence of stem cells in the pulp and apical papilla are capable of self-renewal (with the potential to differentiate into odontoblasts). It logically follows that if enough DPSCs and/

or SCAP are able to survive after infection and if these cells can be preserved during the treatment of that infection, that in sufficient numbers they might be capable of contributing to the regeneration of a functional pulp tissue capable of dentin deposition and completion of root formation.

Lin and colleagues demonstrated that portions of vital pulp with structurally intact and functioning tissue may persist in the presence of apical periodontitis.²⁰ The investigators extirpated and histologically examined the pulps from teeth demonstrating periapical radiolucencies and found that many of the teeth showed normal, healthy pulp remaining in the apical region. It is possible that the presence of this remaining pulp tissue might have the potential to repopulate the pulp space with normal pulp tissue.²¹

Lovelace *et al.* compared the amount of stem cells from pulpal origin with the amount in the systemic blood of humans.²² They collected samples of blood after being stimulated from the periapical tissues of necrotic immature teeth and examined MSC markers (CD73, CD105, and STRO-1) by means of molecular techniques and compared them to samples from the systemic circulation. It was found that there were 600 times more stem cell markers from periapical samples than from systemic circulation. The pitfall of this finding is two-fold. First, there are no specific stem cell markers for different MSCs such as BMMSCs vs. DPSCs/SCAP. SCAP may have a somewhat unique marker, such as CD24, which is not expressed by DPSCs or BMMSCs.¹⁷ Therefore, detection of the cell

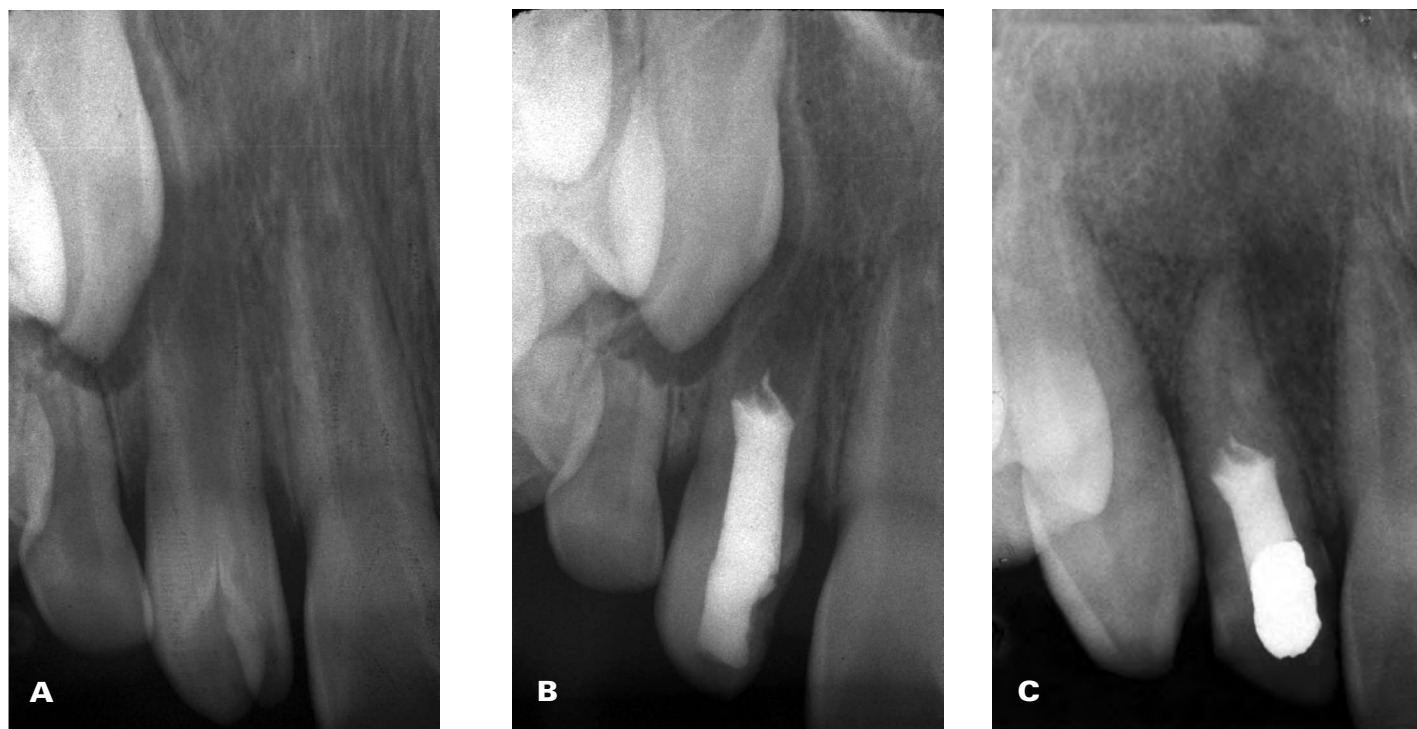


Fig 2. (A) A preoperative radiograph of a maxillary lateral incisor without root formation, necrotic pulp, and a periapical lesion. (B) After making an access cavity into the root of this tooth, its content was cleaned and disinfected with 5% sodium hypochlorite and the access to the root was sealed with MTA. (C) A radiograph taken four years later shows resolution of the periapical lesion and formation of the root of this tooth.

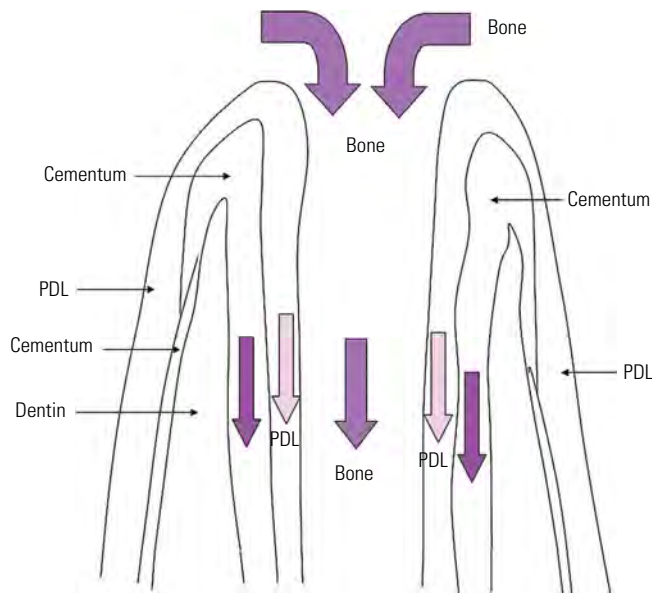


Fig. 3 In-growth of periodontal tissue into pulp space, including bone, PDL, and cementum.

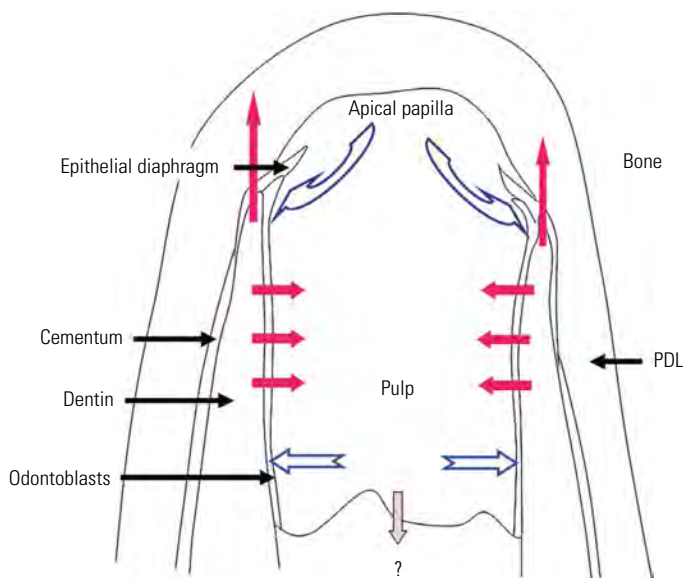


Fig. 4 Hypothetical pulp regeneration from the remaining recovered pulp. The question mark indicates that the regeneration of pulp into the empty pulp space is uncertain at present.

surface MSC markers does not mean they are DPSCs or SCAP. Expression of DPSC markers are also nonspecific as it may be expressed by osteoblastic cells. Second, the collected blood sample from the canal obviously should contain more MSCs than that from the systemic blood. Over-instrumentation 3–5 mm beyond the apex for collection of blood could easily break down periapical tissues that contain osteoblastic cells and MSCs located on blood vessels, which are then to be collected in the blood via root canals. Therefore, detecting those cells expressing CD105, CD73, and STRO-1 should have been anticipated. On the other hand, it is known that BMMSCs are rarely detected in systemic blood.²³

Whether we can anticipate pulp regeneration appears to be dependent upon the presence of surviving pulp cells and apical papilla tissues after the disinfection of the immature teeth (Fig. 2). For cases that have completely lost pulp and apical papilla to infection, it is unlikely that pulp would be regenerated. At best, periodontal tissues including cementum, bone, and PDL in the canal (Figs 3 and 4) may be regenerated.^{21,24} On the other hand, if pulp and apical papilla have survived, revitalization/regenerative procedures may be able to promote regeneration of the entire pulp and the deposition of new dentin on the canal walls.

Scaffolds and growth factors for regenerative endodontics (Revitalization)

There is evidence showing that what remains in the canal affects the revitalization. The absence of a scaffold does not appear to promote revitalization. England and Best extirpated the pulps of 40 immature teeth in dogs, leaving half of them open and the other half closed with Cavit.²⁵ The authors reported a high incidence of apical closure, observed as apparent cementum deposition at the apex. It did not appear, however, that the pulp space had revitalized, or that there was evidence of continued root thickening.

Ostby (1961) suggested blood as a matrix for revitalization.²⁶ Myers and Fountain reported in their study that the blood clot was not resorbed, but instead appeared to serve as a matrix for the in-growth of tissue.²⁷ Thibodeau *et al* reported that the inclusion of blood as a matrix material was better than no matrix or a collagen matrix.²⁸ Chang *et al* determined *in vitro* that collagen is not a favorable medium for regeneration due to contraction.²⁹

Platelet-rich plasma (PRP) is an autologous blood source that contains more than 3.5 times the platelets normally found in a regular blood sample.³⁰ These platelets are considered to be a source of a vast amount of certain growth factors that improve and increase wound healing through various mechanisms. These growth factors include platelet-derived growth factor (PDGF), transforming growth factor (TGF), vascular endothelial growth factor (VEGF), fibroblast growth factor (FGF), osteonectin and osteocalcin, and interleukin-1 (IL-1).^{31,32,33} PDGF has been shown to accelerate deposition of wound matrix, promote chemotaxis of PMNs, macrophages, fibroblasts, and smooth muscle cells, and enhance angiogenesis.^{34,33} TGF is involved in promoting chemotaxis of macrophages and fibroblasts, accelerating deposition and maturation of collagen, angiogenesis, and inhibition of collagen degradation.^{35,33} VEGF has a leading role in angiogenesis and vasculogenesis.^{36,33}

PRP is prepared by withdrawing a venous blood sample. The amount varies between different manufacturers. The withdrawn blood has to come in contact with an anti-coagulant agent that contains citrate and dextrose, which binds to the blood calcium to prevent clotting before the

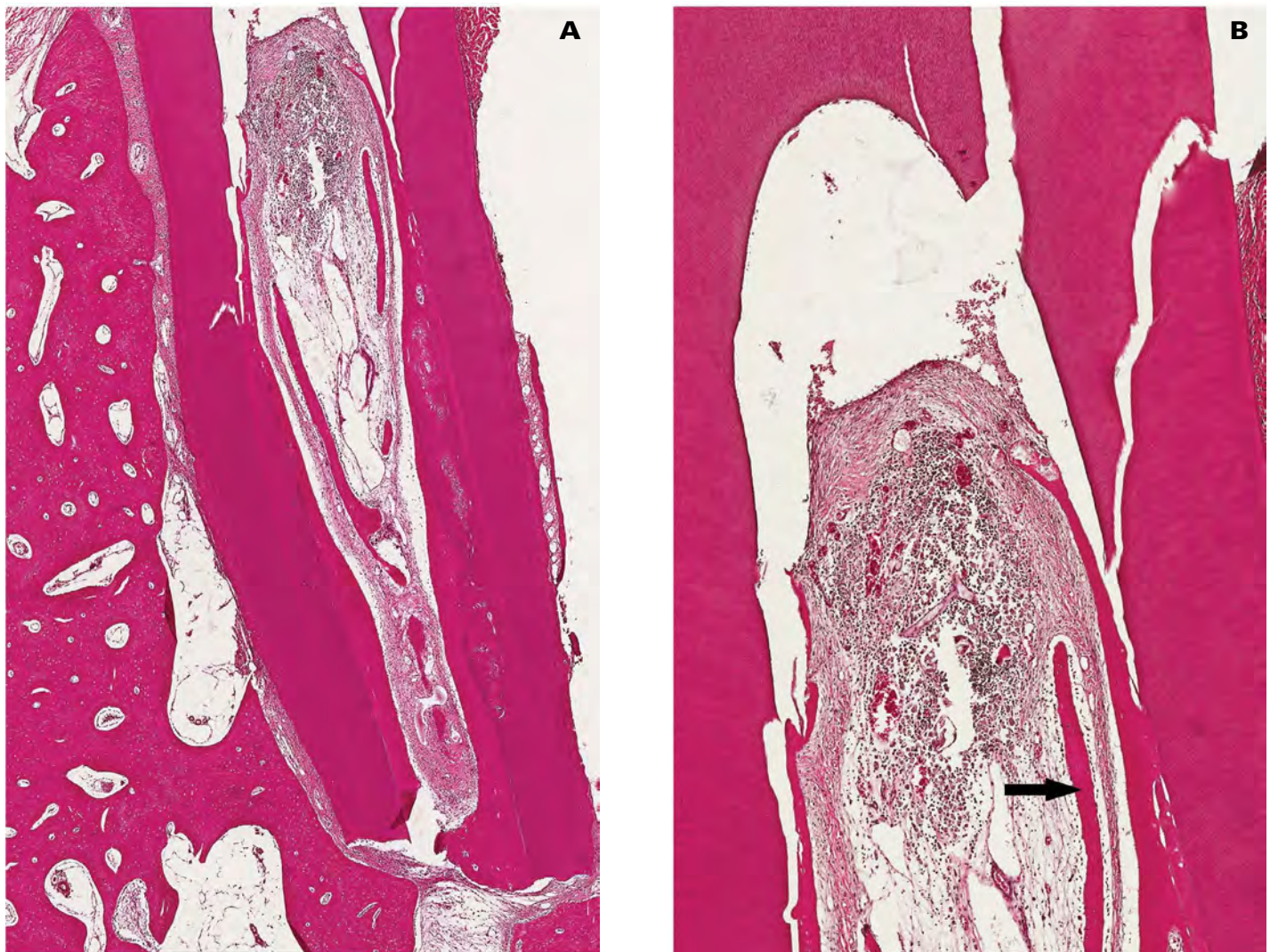


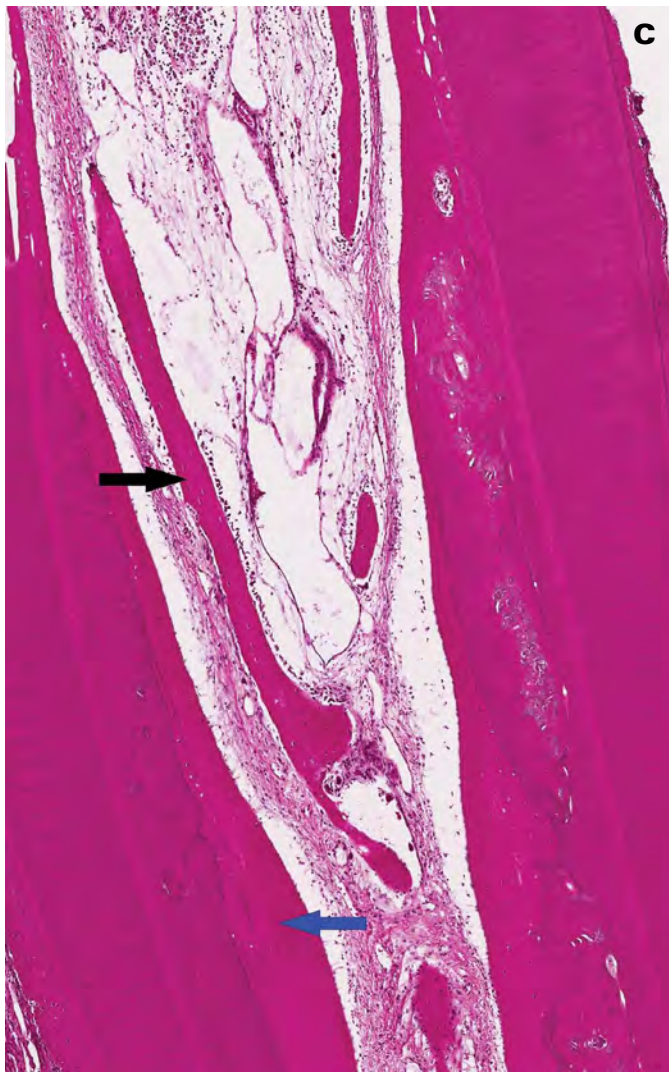
Fig. 5 (A) (B) (C) (D). Histological images of tissues formed in the canal space in vivo. The root canals of dog teeth were infected and disinfected followed by transplantation of dental pulp cells plus platelet-rich plasma. At 90 days, the animals were euthanized and the teeth processed for histological analysis. (A) Longitudinal section of a tooth showing the pulp space filled with vital tissues. (B) Closer view of the coronal third of the canal space showing vascular fibrous tissue with some inflammatory infiltrates. Ingrown bone trabeculae-like tissue (arrow) in the pulp space and a layer of cementum-like tissue along the canal wall can be seen.

PRP is prepared. The whole sample is centrifuged in order to separate the blood into components by means of gradient densities. The resultant centrifuged blood sample will have three fractions: the red blood cell (RBC) layer (containing RBC), the PRP layer, and the PPP layer (platelet-poor plasma). The PRP layer contains the highest amount of platelets, which will be withdrawn separately and mixed with coagulant agent, such as calcium chloride thrombin solution, leading to the formation of a gel-like solution that is ready to be used for various surgical procedures.^{37,38}

PRP has been used in different dental procedures such as oral surgery and periodontal soft tissue procedures.^{35,39,40,41,42,43,44} In regards to postoperative complications and bone healing following third molar extractions, Rutkowski *et al.* showed that when PRP is applied on extraction sites, early and significant radiographic increase of bone density is observed when compared with extraction

sites that have not been treated with PRP.³⁸ Furthermore, PRP has been shown to enhance osteogenesis in bone grafts and has decreased post-operative bone resorption in alveolar cleft patients receiving iliac bone grafting when assessed by computed tomography scan.⁴⁵ The accelerated bone regenerative effect was also shown by Marx *et al.*³⁵

Mechanisms by which PRP may enhance soft tissue healing include stimulation of granulation tissue, decrease of inflammation, increase collagen content, and increase early wound strength.^{46,47} While assessing the microvascular capillary densities of the mucosa after sinus lift surgeries in 10 patients, Lindeboom *et al.* reported a significant accelerated effect of PRP-treated mucosal wounds during the first 10 postoperative days compared to those that had not been treated with PRP.³⁰ Other studies have found similar accelerated results of wound healing when different growth factors were examined.^{48,49,50}



(C) Magnified view of the middle third of the canal space showing bone-like tissue (black arrow) and cementum-like tissue on the canal wall (blue arrow). (D) Magnified view of apical third of the canal showing bone-like islands (black arrow) and a thick layer of cementum-like tissue (blue arrow) containing cells in it. (Adapted from Zhu et al. 2013 with permission.)⁵²

Zhu and associates used PRP and DPSCs for pulp revitalization in a dog study model. They found that PRP alone or DPSCs plus PRP do not appear to help regenerate dental pulp in mature or immature permanent teeth.^{51,52} Instead, only cementum-like, periodontal-like and bone tissues were formed in the canal space (Fig. 5). It is not clear why PRP does not enhance pulp regeneration when mixed with DPSCs. Because DPSCs alone did not produce pulp regeneration in these studies, the effect of PRP cannot be clearly defined.

Platelet-rich fibrin (PRF), a second-generation platelet concentrate, is prepared by centrifuging blood without any addition of chemical agents. PRF does not use anticoagulants, bovine thrombin, calcium chloride, or other exogenous activators in the preparation process (unlike PRP). Therefore, the chair-side preparation of PRF is simple, fast, and easy compared to PRP preparation. PRF produces an inexpensive autologous fibrin membrane and can

be used as a fibrin bandage that serves as a matrix to accelerate the healing of wounds while PRP is a gel-like substance.⁵³

PRP undergoes a more rapid artificial clinical polymerization while PRF undergoes slow polymerization with the natural thrombin found in the blood sample. This slow polymerization produces a three-dimensional fibrin architecture, very similar to the natural fibrin matrix, leading to more efficient cell migration and proliferation. The difference in polymerization modes affects the structure and biological properties of each substance. There are two different architectures that fibrin can be assembled as: bilateral or equilateral junctions. Bilateral junctions are formed with strong thrombin concentrations such as those used in PRP formation. This leads to thickening of fibrin polymers, which is not favorable to cytokine enmeshment and cellular migration. Weak thrombin concentrations in PRF form equilateral junctions, which cause a fine network that allows cytokine enmeshment, cellular migration, and

greater elasticity while still maintaining strength. Therefore, the PRF membrane has a more favorable physiologic architecture to support healing. The PRF preparation process creates a matrix that contains high concentrations of nonactivated, functional, intact platelets, contained within a fibrin matrix, that release a constant concentration of growth factors over a period of seven days.⁵⁴ PRF consists of cytokines, glycanic chains, and structural glycoproteins enmeshed within a slowly polymerized fibrin network.⁵⁵

Beneficial effects of PRF have been studied in various procedures, such as facial plastic surgery, sinus-lift procedures, and periodontal defects. It also serves as a suitable scaffold for breeding human periosteal cells *in vitro*.⁵⁵ However, more studies are needed to fully understand the components of this material.

The limitations of the PRF technique, as compared to other methods for obtaining platelet concentrates, is that quick handling of the blood through immediate centrifugation is the key to obtaining a usable PRF clot. If the duration between blood collection and centrifugation is too long, failure will occur through diffuse polymerization. PRF must be used immediately after blood drawing and centrifugation, while PRP can be activated on demand a few minutes before use.⁵⁵

Huang *et al* (2010b) published a study examining the biological effects of PRF on dental pulp cells (DPCs).⁵⁶ PRF samples were obtained from six healthy volunteers and human DPCs were derived from healthy individuals undergoing extraction for third molars. Cell proliferation, the expression of osteoprotegerin (OPG), and alkaline phosphatase (ALP) activity were examined. This study found that PRF did not interfere with the cell viability of DPCs and were observed to attach at the edges of PRF by phase-contrast microscopy. PRF was found to increase DPC proliferation, OPG expression and up-regulate ALP activity significantly. These findings show that PRF may be a potential bioactive scaffold to use in pulp regeneration.

Research has shown that immature stem cells such as DPSCs require growth factors to be able to differentiate.⁵⁷ Such growth factors that are capable of inducing signals (like PDGF and TGF) can be found in PRP.³³ Kim and associates have discussed the efficacy of cytokines such as PDGF, VEGF, bFGF, and BMP in attracting pulpal cells into teeth filled with these types of cytokines.⁵⁸ After pulpal debridement and delivery of cytokines into extracted human teeth, the samples were embedded into mice dorsa and left alone for three weeks. The use of these growth factors resulted in the attraction of stem cells leading to formation of new pulp-like tissue inside the teeth. The potential for pulpal regeneration has been demonstrated through the application of PDGF and IGF, which promoted the differentiation of immature stem cells into pulp tissue phenotypes.^{59,60}

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Scientific & Clinical Applications of MTA

An Endodontic Symposium | January 18 & 19, 2015

Synopsis

For decades dentists have attempted to preserve the natural dentition by various preventive and treatment modalities. Despite these efforts, many people have developed tooth decay or have suffered traumatic injuries that often require endodontic care. Pathways of communication between the root canal system and the oral cavity or periodontium are created either by decay or during accidental procedures such as perforations during root canal treatment.

Because existing repair or filling materials did not possess adequate biocompatibility and were not able to seal the pathways of communication between the external and internal surfaces of the tooth, Mineral Trioxide Aggregate (MTA), was developed over twenty years ago. Since its introduction, numerous studies have been published on the scientific and clinical application of MTA. This symposium is organized for dental students, general dentists, and specialists to review and discuss updated, relevant, and recent information provided by authorities in the field regarding chemical and physical properties of MTA, clinical uses of MTA in vital pulp therapy, use of MTA in teeth with necrotic pulps and open apices, use of MTA in regenerative endodontics, use of MTA as root perforation repair material, root canal obturation, and root end filling material during endodontic surgery. In addition, the lecturers will show video clips for selected procedures to assist the clinician in performing these procedures. Furthermore, the clinicians will show the participants how to use MTA in vital and non vital pulp therapy as well as periapical surgery and single tooth implant in live demonstrations. For those interested in single implant, a lecture and a live demonstration are planned during this symposium.

Presenters

David W. Berzins, PhD · George Bogen, DDS · Ricardo Caicedo, Dr. Odont · Ronald R. Lemon, DMD
Jaime Lozada, DMD · Shahrokh Shabahang, DDS, MS, PhD · Mahmoud Torabinejad, DMD, MSD, PhD · Thomas von Arx, DMD

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Date:.....Sunday, January 18 and
Monday, January 19, 2015
Time:.....8:30am - Registration
9:00am to 5:00pm - Lecture

Location:.....Loma Linda University
Centennial Complex
Tuition:.....\$545

Credit:.....This course meets the
Dental Board of California's
requirements for 16 units of
continuing education.

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Endodontics quiz

Circle the letters of the correct answers.

1. Which of the following statements is true about platelet-rich fibrin (PRF)?
 - a. It is considered to be a great source of growth factors that increase wound healing.
 - b. Its slow polymerization produces a three-dimensional fibrin architecture that leads to more efficient cell migration and proliferation.
 - c. It can be simply prepared chair-side by centrifuging blood without any addition of chemical agents.
 - d. It has been found to significantly increase dental pulp cell (DPC) proliferation, osteoprotegerin (OPG) expression and alkaline phosphatase (ALP) activity.
 - e. All of the above
2. Dental Pulp Stem Cells (DPSCs) have been found to have the ability to differentiate into which of the following:
 - a. Fibroblasts
 - b. Odontoblasts
 - c. Plasma cells
 - d. Histiocytes
3. For teeth that have completely lost pulp and apical papilla to infection, what tissue is the least likely to be regenerated?
 - a. Pulp
 - b. Bone
 - c. Periodontal Ligament
 - d. Cementum
4. Which of the following is *not* considered an ideal outcome in the treatment of a necrotic, immature tooth?
 - a. The regeneration of pulp tissue into the canal space
 - b. Development of an apical morphology appropriate for conventional endodontic therapy that may be required in the future
 - c. Root walls that have decreased fracture resistance
 - d. Continuation of normal root development
5. By which mechanism can PRP enhance soft tissue healing?
 - a. Stimulation of granulation tissue
 - b. Increase of inflammation
 - c. Decrease in collagen content
 - d. decrease of early wound strength
 - e. All of the above
6. What are some of the major differences between PRP and PRF?
 - a. PRP is centrifuged with additives such as anti-coagulants while PRF is not.
 - b. Platelets, like those in PRP, contain many growth factors such as PDGF, VEGF, TGF, FGF, and IL-1.
 - c. The fibrin in PRF is more favorable for healing compared to PRP because the thrombin connections are weaker allowing for better cytokine enmeshment and cellular migration.
 - d. A and B only
 - e. A, B, C
7. What is the difference between SCAP and DPSCs?
 - a. SCAP express CD24 and have greater population doubling.
 - b. DPSCs have greater telomerase activity.
 - c. SCAP have a lower proliferation rate.
 - d. DPSCs have greater regeneration capacity than SCAP.
8. Which of the following are true regarding dental pulp stem cells (DPSCs)?
 - a. DPSCs were first reported by Gronthos et al.
 - b. DPSCs are a subpopulation of mesenchymal cells.
 - c. DPSCs behave identically to bone marrow derived stem cells.
 - d. DPSCs are capable of forming pulp/dentin complexes.
 - e. A, B, C
 - f. A, C, D
 - g. A, B, D

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Sterilization Assurance Service (SAS) & Dental Unit Waterlines Testing Service (DUWLs)



Sterilization Assurance Service (SAS) was established in 1998 and provides biological monitoring of sterilizers for more than 700 dental offices, community colleges, and other institutions in more than 30 states.

What are some of the advantages of using LLU School of Dentistry's SAS?

- More than 15 years of experience
- Choice of Basic, BasicPlus, and Intensive spore testing services to help you meet infection control requirements within your budget
- Courtesy envelopes or prepaid return envelopes are included
- Option of weekly or monthly reports (Certificate of Participation is available)
- Online test results will be available soon.
- Failure notification by phone

Dental Unit Waterlines Testing Service (DUWLs) opened in 2000 and evaluates microbial contamination of dental unit waterlines. Over 500 dental offices, a number of universities, Veterans hospitals, and other agencies use this service.

What are the advantages of using LLU School of Dentistry's DUWLs service?

- More than 12 years experience
- Consultations by our experienced staff members
- Detailed instructions, sample tubes, a foam container, and ice packs in each test package
- We use the heterotrophic plate count by membrane filtration (Method 9215D), the gold standard for examining microorganism effluent, as published by the American Public Health Association.
- Multiple dilutions to detect heterotrophic bacteria counts up to 20,000 CFU/mL
- Test reports sent after the seven day incubation period
- Local customers may deliver samples directly to our laboratory.

Best annual student research presentations selected

In an LLUSD annual event, forty-one student teams from the dental class of 2015 and the dental hygiene class of 2014 made public digital presentations of their research on the large screens of the Centennial Center's Damazo Amphitheater on the evenings of February 18 and 19.

The proceedings were introduced by Dean Ronald Dailey, PhD, moderated on successive nights by Gregory Mitchell, DDS'84, assistant professor, Restorative Dentistry, and Yiming Li, DDS, PhD, MSD, associate dean for Research, witnessed by

crowds of students and invited guests, and judged by selected School faculty members.

Thirteen teams emerged as winners among four research categories: clinical, laboratory, educational, and health services.

The winning teams competed May 16 against research project winners from California's four other dental schools at the California Dental Association's annual meeting in Anaheim, where they won first place awards and honorable mentions in the Scientific and Community categories.



2014 LLUSD student research presenters assembled at the CDA competition in Anaheim, California.



Dentistry, Clinical Category, First Place, LLUSD

Charles Schein, Justin Terrill, Andrey Gaiduchick, Harbir Jhawar
Obesity and Dental Caries Among Children Aged 2-5 in San Bernardino

Mentor: Dr. Bonnie Nelson

CDA Community Category, Honorable Mention



Dentistry, Clinical Category, Second Place, LLUSD

Yvette Carrillo, Jillian LeBard, Rachelle Kim

The Effects of Sodium Bicarbonate Solution on the pH of Local Anesthetics

Mentor: Dr. Dezireh Sevanesian

CDA Clinical Category, 1st place

Best annual student research presentations, continued



Dentistry, Clinical Category, Third Place

Carlos King, Diane Liang, Ovidiu Brinzeiu

A Detailed Analysis of the Failures in Endodontically Treated Teeth at LLUSD—2007 to 2013

Mentor: Dr. Clyde Roggenkamp



Dental Hygiene, Clinical Category, First Place

Alexis Asher, Nadia Gil, Lesley Kutch

Agreement in the Type of Plaque Bacteria Found on the Tongue and Interproximally

Mentors: Assoc. Prof. Michelle Hurlbutt, Dr. Xiaodong Zhou



Dental Hygiene, Clinical Category, Second Place

Ailn Jaborian, Sara Chavez, Brenda Escolero, Amy Stonehocker
Whitening Agents to Reduce Cariogenic Bacteria

Mentors: Dr. Brian Novy, Assoc. Prof. Michelle Hurlbutt



Dental Hygiene, Clinical Category, Third Place

Kelli Mertz, Tiffany Setiono, Kayla Marin
Effectiveness of Novel Gel to Reduce Cariogenic Bacteria

Mentor: Asst. Prof. Shelley Hayton, Assoc. Prof. Michelle Hurlbutt

Best annual student research presentations, continued



Dentistry, Laboratory Category, First Place

Russell Challenger, Ryan Becker,, Jason Lane, Sepehr Nassiripour
**Effects of Different Setting Times and Calcium Sulfate on
 Dye Leakage of a Fast-Setting Root Filling Material**

Mentors: Dr. Mahmoud Torabinejad, Dr. Shahrokh Shabahang
CDA Scientific Category, 1st place



Dentistry, Laboratory, Second Place

Derrick Nelson, Sarah McDonough, Kyle Poulsen
**Comparison of Radiometers and Spectrophotometers in
 the Evaluation of Light Curing Units**

Mentor: Dr. Michael Mebarry
CDA Scientific Category, Honorable Mention



Dentistry, Laboratory Category, Third Place

*Adam Kutzner, Kristofer Ceredon, Josh Masillamoni,
 William Verlinden*

**Composite Microhardness Curing Efficacy with LED and
 Quartz-Tungsten-Halogen Curing Lights**

Mentor: Dr. Michael Mebarry



Dental Hygiene, Laboratory Category, First Place

Lauren Lagace, Diana Ferguson, Julia Searle
**Effectiveness of Amorphous Calcium Phosphate and
 Fluoride Products in Remineralization of White Spot Lesions**

Mentor: Asst. Prof. Shelly Withers

Best annual student research presentations, concluded



Dental Hygiene, Laboratory Category, Second Place
Jannette Fernandez, Monique Esparza, Guadalupe Mendez
Antimicrobial Effects of a New Green Tea Extract Essential Oil Mouthwash

Mentors: Assoc. Prof. Michelle Hurlbutt, Mr. Ray Aprecio



Dentistry, Education Category, First Place
Erica Becker, Lawryn Ask, Eimy Rodriguez
Osmolarity of Local Anesthetics and the Effects of Sodium Bicarbonate as Compared to Physiologic Osmolarity

Mentor: Dr. Dezireh Sevanesian



Dental Hygiene, Education Category, First Place
Emi Hongo, Julie Carpenter, Ruth Cho
Therapeutic Dosage Guide for a New Xylitol Ice Chip Candy

Mentors: Assoc. Prof. Michelle Hurlbutt, Mr. Ray Aprecio

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Commencement 2014: “You make us look good.”

A number of gloomy days gave way to nothing but breezy and clear for Loma Linda University School of Dentistry’s 2014 graduation weekend.

It was also an occasion that saw its commencement speaker, David I. Levy, MD, clinical professor of surgery (neurosurgery), School of Medicine, University of California, San Diego, and author of *Gray Matter*, return from a visit to Africa only to be quarantined for a communicable disease believed to be a form of tuberculosis.

Graham Stacy, PhD, associate dean for Student Affairs, filled in for Dr. Levy and spoke pastorally to the School of Dentistry graduates, reprising the apostle Paul to the Corinthians 2000 years earlier, by assuring them that they were saints—even if they were not finished products. He encouraged the classes of 2014 at some length to express their core values in the practice of their professions. And he closed by producing a T-shirt with a slogan he had adopted after several were left on the cutting room floor: “You make us look good.”

Mariam Arnouk, the visibly thrilled dental hygiene class of 2014 president, extolled her classmates and friends with the point that “we are all God’s workmanship” and “it all boils down to love.” Saying, “We have been blessed with a gift, a gift to be instruments in the hands of God,” she concluded, “Our mission is not easy, but it’s simple. It is to love, serve others, and to be the healers that God has prepared us in advance to be.”

Roberto Espinoza, president, dentistry class of 2014, exclaimed triumphantly in Spanish, “Hello, family. We did it,” before settling



Graham Stacy (above) tells the graduating School of Dentistry classes of 2014 that they are saints.

Miriam Arnouk (right), reminds her graduating dental hygiene classmates that they “have been blessed with a gift.”

Roberto Espinoza (below) celebrates with his graduating senior dental student classmates, families, and friends their coming opportunities for professional service.



into English remarks, that he concluded by thanking God, Mrs. White, President Hart, Dean Dailey, faculty and staff “for those everyday things” that made their arduous journey more comfortable. He summed up four years of effort: “It’s time to take this education we’ve learned as dental professionals and make man whole,” adding, “With our families by our sides, and with God in our hearts, Loma Linda class of 2014, we will be that change.”



Two hundred and five diplomas wait to meet their owners.

In his first commencement as dean, Ronald Dailey presided over the honoring of several deserving faculty members with the School of Dentistry's annual awards:

Robert Handysides, DDS, associate dean for Academic Affairs, presented Mark Estey with the School's **Teacher of the Year Award**:

Each year, students and faculty participate in a process to identify candidates for the Teacher of the Year Award. The purpose of this award is to recognize an exceptional educator in the School of Dentistry who demonstrates teaching effectiveness, scholarship and manifests Christian values. Would this year's honoree, Mark Estey please come forward.

It is both a personal and professional honor to have the opportunity to present Mark Estey as the recipient of the 2014 Teacher of the Year award. To paraphrase Oliver Wendell Holmes, the greatest teacher makes others believe in greatness. Great teachers impact the lives of all who come in contact with them. For those of us who work with Mark as a colleague, teacher or mentor, it is easy to see how this description of an exemplary teacher fits Mark.

Mark Estey completed his DDS degree at Loma Linda University School of Dentistry in 1998 and his Advanced Education in Prosthodontics in 2003. Mark has held a continuous faculty appointment in the School of Dentistry since 1999 and in his 15-year career as an educator, Mark has been actively involved in many school committees and professional organizations.

Mark is an extraordinary teacher, who always maintains excellent rapport with students, continuously updates and renews his content, keeping it fresh and exciting, and exhibits a vigorous interest in student learning. His ability for taking topics that are sometimes considered by students, and the occasional faculty member, to be boring and only marginally relevant, and presenting them in a way

that is interesting and frequently entertaining has become legendary. Understandably, his course evaluations by students are consistently outstanding. Let me share just a few examples of these evaluations:

Dr. Estey is a good teacher and you can tell he wants you to learn to succeed on clinic, not only to do well on a test.

I appreciate that each lecture starts with a personal/worship thought. It is a great way to set the tone for class.

Makes learning about dentures enjoyable! Dr. Estey shows concern for the student and the learning process.

One of the best lecturers and instructors LLU has on staff !!

And finally, "Dr. Estey is a remarkable teacher with an excellent teaching style. He explains the subject matter so well, anyone can learn it! We are lucky to have had him as our instructor."

The significance of this award comes in large measure from the extensive process by which he was selected, for, you see, all students and faculty have input into the selection process, which a committee then evaluates and recommends a recipient to the dean. Dr. Mark Estey, it is with tremendous gratitude and appreciation for all you do here at the School of Dentistry, and



Dr. Mark Estey accepts the Teacher of the Year Award from Dr. Robert Handysides.



Dr. Alan Herford is congratulated by LLU President Richard Hart on receiving the award for School Distinguished Researcher.

on behalf of the entire School body I am honored to present the Teacher of the Year Award to you today.

Dean Dailey presented Alan Herford, DDS, MD, chair, Department of Oral and Maxillofacial Surgery, director, Advanced Specialty Education in Oral and Maxillofacial Surgery, with the School's **Distinguished Research Award**:

Dr. Herford's interest in research began in the early 1990s when he began working with the late Dr. Philip Boyne. Their collaborative investigations led to numerous publications and advances in the area of dental tissue regeneration.

A productive researcher, Dr. Herford has received more than \$1 million dollars in grant funding—which has generated more than 100 scientific publications and more than 200 scientific presentations. He travels nationally and internationally speaking on a variety of topics. His main research interests are trauma and reconstructive surgery.

Dr. Herford has pioneered techniques in both hard- and soft-tissue regeneration and holds patents in soft-tissue grafting techniques. He developed the first three-dimensional transport bone distractor that can regenerate large segments of bone without extensive grafts. His work on the use of the growth factor bone morphogenic protein

(rhBMP-2), at both the preclinical and clinical levels, has led to increased treatment options for patients. He received the 2013 Daniel M. Laskin Award for his article entitled "Recombinant Human Bone Morphogenetic Protein 2 Combined with an Osteoconductive Bulking Agent for Mandibular Continuity Defects in Nonhuman Primates."

Dr. Herford, who is the immediate past president of the California Association of Oral and Maxillofacial Surgeons (CAOMS), currently serves on the board of directors for the American Institute of Oral Biology and for the American Board of Oral and Maxillofacial Surgery (ABOMS). He is president-elect of ABOMS. With a strong interest in trauma, he currently serves as a director of the North American Craniomaxillofacial Trauma Education Council.

Dr. Herford is a founding member of the Osteo Science Foundation, which was established in 2013 to provide a platform for funded and entirely independent basic and clinical research focused on new therapeutic approaches and clinical treatment methods related to regenerative medicine in dentistry. The foundation—which is the culmination of the vision of Drs. Peter Geistlich and Alan Herford, as well as the late Dr. Philip Boyne—annually awards multiple research grants of up to \$100,000.

In recognition of his creative and innovative leadership, scholarship, and invaluable contributions to the field of dentistry, the School of Dentistry is pleased to name Dr. Alan S. Herford recipient of the SCHOOL DISTINGUISHED RESEARCH AWARD.

Dean Dailey presented Thomas C. Rogers, DDS, MA, MPH, associate professor, Dental Educational Services, and director of Faculty and Leadership Development, with



Graduating class of 2014 dentistry students pause to give thanks.

the School's Distinguished Service Award:

After completing an undergraduate degree in biology, Thomas C. Rogers served as a San Bernardino County environmental review officer and biological scientist, and an engineering and environmental consulting office manager and senior scientist. He continued his environmental consulting on a part-time basis while in dental school. After earning his D.D.S. degree, he established a private practice in Redlands, California, which he maintained from 1983 to 1995.

Dr. Rogers began his career with Loma Linda University in 1984 as a voluntary instructor in the School of Dentistry's Department of Oral Surgery. He transitioned to a part-time position in the Department of Restorative Dentistry in 1992, was appointed assistant professor in the Department of Dental Educational Services in 1994, and was promoted to associate professor in that department in 2005. He was appointed director of faculty and leadership development in 2009—a role in which he assists faculty in documenting clinical, scholarly, and service activities that impact the promotion process.

Dr. Rogers' contributions to academic dentistry include serving as course director in practice management and lecturer in other clinical and behavioral science courses.

Assisting in a collaborative effort between the School of Dentistry and the School of Public Health, he helped organize a dental clinic and established a fee schedule for services at the SACHS-Norton Clinic in 1996. In 1997, in conjunction with Dr. Mike Fitzpatrick, he initiated a pilot mentoring program in the School of Dentistry's predoctoral clinic—which by 2001 had evolved into a group practice model. His service is further distinguished by the mission orientation and annual trips to Nicaragua that he organizes for dental and dental hygiene students during summer break, and by his effective coordination of two accreditation site visits in 2002 and 2009 that resulted in excellent outcomes for the school.

In 2002, Dr. Rogers was appointed director of a new, externally funded HIV in Dentistry Training Program at the SACHS dental clinic. He has also been involved in the Community-Based Dental Partnership Program funded under the Ryan White CARE Act by the federal government's Health Resources and Services Agency—which has contributed for years to the education of senior dental, International Dentist Program (IDP), and dental hygiene students.

In recognition of and appreciation for his contributions to this University and to the broader world community, the School of Dentistry names Dr. Thomas C. Rogers recipient of the SCHOOL DISTINGUISHED SERVICE AWARD.

Dean Dailey presented Klaus Wolfram, DDS, MS, associate professor, Department of Periodontics with the School's Distinguished Service Award:

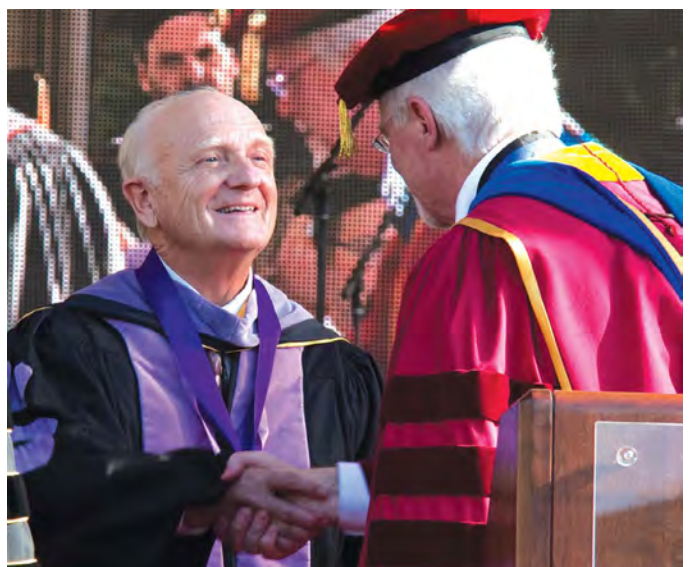
Klaus D. Wolfram served as a medical specialist in the U.S. Army Medical Service Corps from 1960 to 1966. After completing a postdoctoral degree program in dentistry in 1973, Dr. Wolfram joined the staff of Loma Linda University School of Dentistry as an instructor in the Department of Oral Medicine,



Dr. Tom Rogers receives his Distinguished Service Award from LLU President Richard Hart.

where he was promoted to assistant professor in 1975.

In 1981, Dr. Wolfram transitioned the private practice he had operated part time in Fontana, California, for nine years to a full-time basis. Ten years later, he accepted an invitation to return to Loma Linda University School of Dentistry (LLUSD) with a full-time appointment in periodontics. Since joining the faculty, he has taught and conducted research in the Department of Periodontics and in the International Dentist Program, has presented numerous continuing dental education courses, and has served as director for many courses in the department. In addition to his clinical supervision of dental hygiene and advanced education students at LLUSD, he is also a supervising dentist in the dental hygiene program at San Joaquin Valley College. After a brief period of retirement, Dr. Wolfram returned to his first love—clinical teaching—where he works with students in the International Dentist Program and continues to be valued by his peers and



Dr. Klaus Wolfram is congratulated by Dean Ronald Dailey on receiving the School Distinguished Service Award.



LLU President Richard Hart congratulates Dr. Yiming Li on receiving the award for School Distinguished Investigator Award.

students.

Dr. Wolfram has served as a member of LLUSD academic review, faculty promotions, clinic activities, student awards, and nominating committees. An exemplary and inspiring clinician and teacher, Dr. Wolfram is known for his ready smile, his energetic commitment to maintaining quality standards of care, and his buoyant personality.

For his contributions as teacher and mentor, and for competence demonstrated in serving his profession, the School of Dentistry is pleased to name Dr. Klaus D. Wolfram recipient of the SCHOOL DISTINGUISHED SERVICE AWARD.

Provost Ronald Carter, PhD, presented Yiming Li, DDS, PhD, MSD, with the **Distinguished Investigator Award** :

After completing the DDS, MSD, PhD, associate dean for Research, Dr. Yiming Li was recruited to the faculty of the College of Stomatology, Shanghai Second Medical University (Shanghai, China), where he remained for five years teaching, practicing, and conducting research. Prior to joining Loma Linda University in 1997, he held appointments at Indiana University—including associate professor in the School of Dentistry and in the School of Medicine, director of the Cell Culture Research Laboratory, director of the Electron Microscopy/Confocal Microscope Facility, and director of the Biocompatibility Core Facility of the Biomechanics and Biomaterials Research Center.

Dr. Li has been active and productive in research that to date has generated more than \$18 million grant support, 110 articles and book chapters, and 169 abstracts. In addition, he has given 132 presentations in more than ten countries.

Dr. Li has served his profession in multiple capacities, including as member of the FDA Dental Products Panel, president of the Indiana section of the American Association for Dental Research, U.S. expert on biological evaluation of dental materials to the International Organization for

Standardization (ISO), chair of two committees on biological evaluation of dental materials and tooth-bleaching materials under American Dental Association (ADA) and Standards Committee for Dental Products (SCDP), consultant on FDA Dental Products Panel, and consultant to the ADA and the California Dental Association. He is a member of the editorial board of four dental journals and reviews manuscripts for sixteen journals.

Highly esteemed for his professional expertise, achievements, and contributions to his profession, Dr. Li has received numerous invitations for international professorships.

In recognition of his outstanding scholarship and for his invaluable contribution to the field of dentistry, Loma Linda University Health is honored to present the **DISTINGUISHED INVESTIGATOR AWARD** to Dr. Yiming Li.

Provost Ronald Carter, PhD, presented Peter Geistlich the University's **Distinguished Humanitarian Award**:

Dr. Peter Geistlich studied organic chemistry at the Federal Institute of Chemistry in Zurich, Switzerland. In 1955, he joined the family business, which was founded in 1851 by Heinrich Geistlich. He has always been grateful to his family for supporting his passion for research and allowing him the freedom to follow his natural instinct for developing new and innovative products. He is still active in this capacity. Dr. Geistlich is a pioneer in biomaterials research, and his primary aim is to develop products that are of the highest scientific quality and that can make a difference in patients' lives. After he read a paper



Bachelor of Science program dental hygiene graduates, Jeanette Fernandez, Nina Field, and Lori Foust, anticipate their diplomas.



Dr. Mathew Kattadiyil, DDS, MDS, MS'99, stands with OKU honor society inductees: Zina Johnston, Kitichai Rungcharassaeng, and Mary Hartwell.

on bone regeneration by Dr. Philip Boyne, then professor of oral and maxillofacial surgery at Loma Linda University, the two like-minded scientists met. Thus began a life-long friendship and scientific research collaboration with the University that is still active. The goal of improving the quality of care in the fields of oral and maxillofacial surgery and tissue regeneration shared by Dr. Geistlich and Dr. Boyne led to the joint creation and funding of the Boyne-Geistlich Professorship in Oral and Maxillofacial Surgery at the School of Dentistry.

In 2003, Dr. Geistlich and Geistlich Pharma founded the independent, Swiss-based Osteology Foundation to

link science with practice in regenerative dentistry. In 2007, he proposed to Dr. Boyne the creation of a U.S. foundation operated by an independent board that would provide research funding and education to accelerate innovation and development of novel biomaterials in oral, cranial, and maxillofacial surgery in North America. In response to this objective, the Philadelphia-based Osteo Science Foundation was formally launched in 2013.

While Dr. Geistlich has devoted his life to research, he still finds time to improve the visual impact of the Swiss landscape through the selection and planting of specimen trees. He introduces new varieties to areas of the countryside, where their lasting presence will—like his research—benefit future generations.

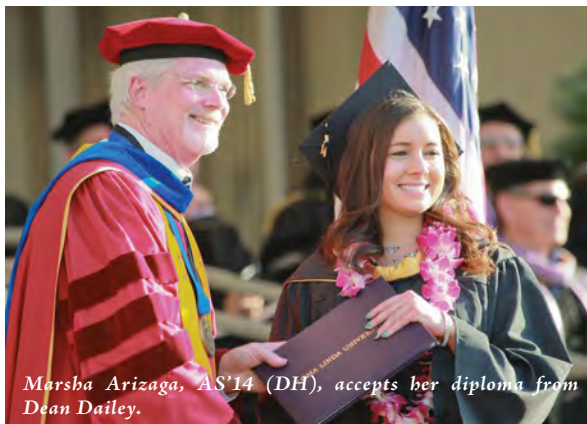
For his innovative leadership and devotion to scientific research that improves patients' quality of life, Loma Linda University Health is honored to present to Dr. Peter Geistlich the **DISTINGUISHED HUMANITARIAN AWARD**.

Awards for Omicron Kappa Upsilon, the National Dental Honor Society, were presented to Zina Johnston, DDS, assistant professor, Department of Restorative Dentistry; to Kitichai Rungcharassaeng, DDS, MS'98, professor, Orthodontics and Dentofacial Orthopedics; and an honorary OKU was awarded to Mary Hartwell, manager, Dental Clinics.

With the speeches given and the awards distributed, diplomas were presented to 205 School of Dentistry graduates from 27 countries: six associate of science degrees in dental hygiene; 41 bachelor of science degrees in dental hygiene; 101 doctor of dental surgery degrees; 21 doctor of dental surgery degrees from the International Dentist Program; and (from the Advanced Specialty Education Programs) nine master of science in dentistry (MSD) degrees, 10 Master of Science (MS), and 32 professional certificates.



LLU President Richard Hart congratulates Mr. Jacob Hirzel, the nephew of Dr. Peter Geistlich, who accepted the Distinguished Humanitarian Award on his uncle's behalf.



Marsha Arizaga, AS'14 (DH), accepts her diploma from Dean Dailey.



He Eun Gang, BS'13 (DH) celebrates with her husband, Minsoo Han, DDS'14 and Dean Dailey.



2014 Advanced Specialty Education in Periodontics graduates: Meera Maveli, DDS, MS'14; Christen Sather, DDS, MS'14; and Yi Yang, DDS, MS'14



Getina Marku, happily awaits her diploma for the BS degree in dental hygiene.



An IDP graduate gets boisterous support from well wishers.



Married with diplomas: Janelle Czer, DDS'14, and Luke Czer, DDS'14



2014 dentistry graduates: Matthew Enns and Eric Chen bookend Dean Dailey.



2014 dentistry graduates: Janelle Czer, Susan Chung, Diana Chung, BreeAnn Christiansen, and Sun Choi



Ewa Parciak, DDS, MS'14 (Prosthodontics)



Nadia Gil, BS'14 (DH) is lifted in celebration by her husband, Ryan Hill, SM'14.



2014 graduates from the Advanced Specialty Education Program in Pediatric Dentistry: Parisa Kermanshahi, DDS, MS'14; Clinton Lepetich, DDS, MS'14; Michelle Shin, DDS, MS'14; and Khanh Truong, DDS, MS'14



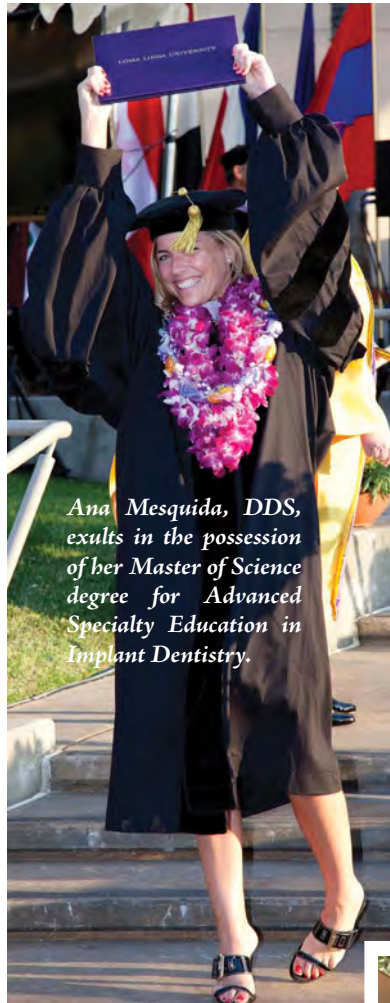
Four Advanced Specialty Education Program in Implant Dentistry graduates (L-R): Meisam Faeghi Nejad, Keerthi Senthil, Ana Mesquida, Pakpoom Yuenyongorarn, cradle their DDS diplomas.



2014 dental hygiene graduates from the Bachelor of Science program, Jacqueline Quiroz, Mylene Reyes, Anashe Safarian, and Julia Searle, exult in their degree completion.



Diplomas are only minutes away for class of 2014 dental students (L-R) Tina Saw, Jillian Schlenker, Jasman Sedaghatpour, and Stephanie Shin.



Ana Mesquida, DDS, exults in the possession of her Master of Science degree for Advanced Specialty Education in Implant Dentistry.



Bill Emmerson, DDS'80, MS'82, celebrates with his daughter, Caroline Chatigny, BS'14 (DH), and Dean Dailey.



IDP class of 2014 graduates (L-R): Jean Brunet Joseph, Prasad Manjunath, Yasun Sadeddin, Maher Samra, Maamon Alkaseer, and Harveer Kaur



Dean Dailey hands Diana Ferguson, BS'14 (DH), her diploma.



Class of 2014 dentistry graduates Amanda Zenthoef, Elijah Wang, Ronald Walker, and Clint Walker.



Fellow Canadians celebrate with Morse Stonecypher, DDS'12, his MS degree in Orthodontics.

Dental Hygiene students pinned

As happens each year at this time, dental hygiene degree candidates assembled on the platform of the 108-year-old Loma Linda Campus Hill Church structure with its engraved wood, stained glass and American Classic pipe organ.

Beyond its 41 Bachelor of Science degree earners, this year's pinning ceremony included six Associate of Science Degree recipients.

Seventeen awards were distributed to 19 of the 47 graduating dental hygiene students (see below).



Sixteen of the School of Dentistry Department of Dental Hygiene graduating Class of 2014 students pose before their pinning ceremony.

Dental hygiene awards—2014

American Association of Public Health Dentistry

Alin Jabourian, BS'14

Amy Feldkamp-Jacobson Tuition Scholarship

Elizabeth Duran

Bates Award

Sarah Pope, BS'14, Cendy Varela, AS'14

California Dental Hygienists' Association

Outstanding Leadership Award

Alin Jabourian, BS'14

Clinician's Award

Caroline Chatigny, BS'14

Colgate STAR Award

Brenda Escolero, BS'14

David Lee Anderson Tuition Scholarship

Sarah Pope, BS'14

Dean's Award

Kelli Mertz, BS'14

Joni Stephen's Preventive Dentistry Award for Research

Alexis Asher, BS'14, Nadia Gil, BS'14, Lesley Kutch, BS'14

Klooster Humanitarian Award

Kayla Marin, BS'14

Middleton Award

Nicolette Henderson, AS'14, Jacqueline Quiroz, BS'14

Mitchell Award

Miriam Arnouk, BS'14, Veronica Ayala, AS'14

Service Learning Award

Ruth Cho, BS'14

Sigma Phi Alpha Award

Lori Foust, BS'14, Nadia Gil, BS'14,
Kelli Mertz, BS'14, Mylene Reyes, BS'14

Student of the Year Award

Mylene Reyes, BS'14

Tri-County Dental Hygienist's Society Award

Sarah Pope, BS'14

Western Society of Periodontology Award

Sara Chavez, BS'14

LLUSD graduating quartet commissioned

On the Sunday morning (May 25, 2014) of the conferring of their degrees, four LLU School of Dentistry graduating dental students were commissioned at the Randall Visitor Center. Sworn

in by retired Army Brigadier General Michael Walter, MD, associate professor, LLU School of Medicine, were Tod Davidson, Vincent Ferretti, James Gordon and Nathan Oster.



Old brass stand with new (L-R): Clyde Roggenkamp, SD'70, MSD, MPH, associate professor, Restorative Dentistry (Air Force Lieutenant Colonel); retired Brigadier General Michael Walter, MD (Army), associate professor, LLU School of Medicine; Tod Davidson, DDS'14 (Air Force); Nathan Oster, DDS'14 (Army); Gary Golden, DDS'76, assistant professor, Restorative Dentistry (Air Force Colonel); James Gordon, DDS'14 (Navy); Wayne Tanaka, DDS, associate professor, Oral and Maxillofacial Surgery (Air Force Colonel) Vincent Ferretti, DDS'14 (Navy); R. Leslie Arnett, DDS, MS'68, professor, Periodontics (Navy Lieutenant).



James Gordon, DDS'14 (left), pictured here with his wife, Lindsay, and their four children.

Nathan Oster, DDS'14 (right), in his Army uniform with his sister, Jillian, and father, Cyrus Oster, DDS'80.



Vincent Ferretti, DDS'14 (left), with his wife, Andrea.

Tod Davidson, DDS'14 (right), with his wife, Tia.



Student achievement awards

During the School's annual Awards Ceremony at the Damazo Amphitheater in the Jetton Pavilion of Loma Linda University's Centennial Complex, May 23, 2014, 58 students were presented awards or recognized for awards received elsewhere. The total of 89 awards and their recipients are listed below alphabetically.

Academy of Dentistry International Student Servant Leadership Award

Matthew S. Enns, DDS'14

Academy of General Dentistry Award

Marcus Baker, DDS'14

Academy of Operative Dentistry Award

Shadi R. Khillah, DDS'14

Academy of Osseointegration Implant Dentistry Outstanding Dental Student

Jeffrey B. Johnson, DDS'14

Alpha Omega Certificate of Academic Achievement

Luiza Portnoff, DDS'14

Alumni Association Award

Douglas Baasch, DDS'14

American Academy of Gold Foil Operators

Eric H. Huang, DDS'14

American Academy of Implant Dentistry

Matthew S. Enns, DDS'14

American Academy of Oral and Maxillofacial Pathology Award

Sooh Hyun Kim, DDS'14

American Academy of Oral and Maxillofacial Radiology Award

Clinton J. McGarvey, DDS'14

American Academy of Oral Medicine Award

Jeremy J. Haines, DDS'14

American Academy of Orofacial Pain Award

BreeAnn Christiansen, DDS'14

American Academy of Pediatric Dentistry

Amanda S. Zenthoefer, DDS'14

American Academy of Periodontology

Eric Chen, DDS'14

American Association of Endodontists

Diana C. Torres, DDS'14

American Association of Oral and Maxillofacial Surgeons Award

Daniel S. Yang, DDS'14

American Association of Oral and Maxillofacial Surgeons Dental Implant Student Award

Jason D. Carlson, DDS'14

American Association of Oral Biologists

Eric Chen, DDS'14; Matthew S. Enns, DDS'14

American Association of Orthodontists Award

Elijah C. Wang, DDS'14

American College of Dentists, Southern California Section

Janelle L. Czer, DDS'14

American College of Prosthodontists Award

Zachary A. Mursic DDS'14

American Dental Society of Anesthesiology Award

Cherestina G. Boulas, DDS'14

American Student Dental Association

Jeremy J. Haines, DDS'14

Ben W. Oesterling Award

Jason D. Carlson, DDS'14

Boyko Award for Christ-like Service

Tina J. Saw, DDS'14

California Association of Oral and Maxillofacial Surgeons Award

Aaron A. Norman, DDS'14 (IDP)

CDA Student Research Awards (DDS'15)

1st Place: Ryan Becker, Yvette Carillo, Russell Challenger, Rachelle Kim, Jason Lane, Jillian LeBard, Sepehr Nassiripour

Honorable Mention: Andy Gaiduchik, Harbir Jhawar, Sarah McDonough, Derrick Nelson, Kyle Poulsen, Charles Schein, Justin Terril

Clinic Awards (DDS'14)

Wael B. Alfay, James E. Gordon, Crismon A. Goude, Odeta Petri, Diana C. Torres

David Lee Anderson Departmental Award

Koohyar Karimi, DDS'14

David Lee Anderson Tuition Scholarship

Esther B. Jeong DDS'14

Delta Dental Student Leadership Award

Elijah C. Wang, DDS'14

Dental Trade Alliance Foundation Scholarship

Eric Chen, DDS'14

Excellence In Prosthodontics Award (LLU)

James E. Gordon, DDS'14

Fixed Prosthodontics Department Award

Tod Davidson, DDS'14

G. Hartzell & Son Clinician Award

Odeta Petri, DDS'14

Graduate Implant Dentistry

Eric Chen, DDS'14

ICOI/Dentsply Pre-doctoral Student Achievement Award

Zachary A. Mursic, DDS'14

International College of Dentists Award

Jeremy J. Haines, DDS'14

Kenneth Wical Award

Jillian Schlenker, DDS'14

LLU Center for Dental Research Basic Science Award

Robert Saunders, DDS'16

LLU International Dentist Program Esthetic Award

Sushmitha R. Jeeri, DDS'14 (IDP)

LLU International Dentist Program Overall Clinic Award

Maher Samra, DDS'14 (IDP)

LLU International Dentist Program Professionalism Award

Aaron A. Norman, DDS'14 (IDP)

National Association of Seventh-day Adventist Dentists

Clint C. Walker, DDS'14

Omicron Kappa Upsilon (OKU) Awards (DDS'14)

Arash Arad, Douglas Baasch, Eric Chen, Chunhua Chilton (IDP), James E. Gordon, Jeremy J. Haines, Jeffrey B. Johnson, Sooh Hyun Kim, Andrew A. Lac, Zachary A. Mursic, Yeganeh Parhizkar, Luiza Portnoff, Megha Shah (IDP), Daniel S. Yang

Omicron Kappa Upsilon, William S. Kramer Award for Excellence

Irene Cruz, DDS'15

Oral and Maxillofacial Surgery Department Award

Shadi R. Khillah, DDS'14

Pierre Fauchard Academy Award

Elijah C. Wang, DDS'14

Pierre Fauchard Academy Scholarship

Sarah McDonough, DDS'15,

President's Award

Douglas Baasch, DDS'14

Prince Award

Roberto B. Espinoza, DDS'14

Service Learning Awards (DDS'14)

Cherestina G. Boulas, Fallon D. Livingston, Diana C. Torres, Ronald K. Walker

Southern California Academy of Oral Pathology Award

Andrew A. Lac, DDS'14

Southern California Society of Dentistry for Children

Kristopher R. Falk, DDS'14

Terry Tanaka Student Humanitarian Award

Matthew S. Enns, DDS'14

Western Society of Periodontology Award

Yeganeh Parhizkar, DDS'14

Wil Alexander Whole Person Care Award

Shadi R. Khillah, DDS'14

Wilfred A. Nation Award

Luke A. Czer, DDS'14

Honors Program Recognition

Graduates recognized for Elective Program completion

Wael B. Alf, DDS'14

Advanced Clinical Standing

Cherestina Boulas, DDS'14

Maasai Dental Clinic Clerkship

Jillian Schlenker, DDS'14

Maasai Dental Clinic Clerkship

Eric Chen, DDS'14

Implant Dentistry Honors Program

Chunhua Chilton DDS'14 (IDP)

Pediatric Dentistry Honors Program

James E. Gordon, DDS'14

Advanced Clinical Standing

Jeremy J. Haines, SD'14

Orthodontics Honors Program

Junghun Ji, DDS'14

Pediatric Dentistry Honors Program

Peggy Kargar Ram, DDS'14 (IDP)

Advanced Clinical Standing

Luiza Portnoff, DDS'14Advanced Clinical Standing
Maasai Dental Clinic Clerkship**Jasmine Sedaghatpour, DDS'14**

Advanced Clinical Standing

Megah Shah, DDS'14 (IDP)

Advanced Clinical Rotation Endodontics

Diana Torres, DDS'14Orthodontics Honors Program
Maasai Dental Clinic Clerkship**Amanda Zenthoefer, DDS'14**

Pediatric Dentistry Honors Program

Omni dean celebrates (sbX) opening

In a blending of his roles as School of Dentistry dean, Loma Linda City Council representative, and member of the Omnitrans Board, Ron Dailey, PhD, was on the dais in downtown San Bernardino Tuesday morning, April 22, to congratulate on behalf of the Omnitrans board, its chair, Alan Wapner, and the Omnitrans CEO and general manager, Scott Graham, and his entire team on completion of San Bernardino Express (sbX), the Inland Empire's first rapid transit line.

"We celebrate today the completion of a vision and the persistence of public servants who had a passion to more effectively address the transportation needs of citizens in the Inland Empire," said Dailey of the 60-foot articulated buses that now negotiate a 15.7-mile corridor that connects Cal State San Bernardino, downtown San Bernardino, the many businesses of Hospitality Lane, Loma Linda University, and the Jerry Pettis Memorial Veterans Hospital.

A crowd of approximately 100, including Joseph Caruso, DDS'73 MS'75, MPH, associate dean, Strategic Initiatives and Faculty Practices, celebrated the opening of the \$197 million bus line. Fourteen compressed natural gas busses will run every 10 minutes during peak hours and at 15-minute intervals otherwise.

Noting that Loma Linda's night-time population of approximately 23,000 "swells to about 60,000 during the day," Dean Dailey recognized the "share of traffic bottlenecks entering and leaving Loma Linda in the mornings and evenings" that might be eased by "an affordable, comfortable,

environmentally friendly and efficient transportation option that will enable our guests, veterans, patients, faculty, employees and students to get to their destinations with ease."

The Dean pointed out two additional benefits of the sbX line: "The Hunts Lane sbX station in San Bernardino is a very brief walk to the Faculty Dental Practice offices—a bonus for the School of Dentistry. . . . And it will be a major benefit for our city's citizens and guests to be able to board the sbX in Loma Linda and after a brief ride, arrive at the Transit Center in

San Bernardino where they can board the Metrolink to Los Angeles—a gateway to the rest of the world."

The 23 sheltered station and four park-and-ride facilities route is a first-of-its-kind project that transportation officials expect to replicate across San Bernardino County.

Warning to Inland Empire drivers: the fine for driving private vehicles in the new bus-only lanes is \$341.



Dean Ron Dailey celebrates "the completion of a vision."



Glamor shot of sbX bus



Loma Linda's Anderson St. station at the Medical Center's entrance

Introducing Nasser Said-Al-Naief

Nasser Said-Al-Naief, DDS, MS, recently joined the faculty of two Loma Linda University schools: as professor, Department of Oral Diagnosis, Radiology, and Pathology in the School of Dentistry and associate professor, Department of Anatomy & Pathology, Head & Neck Pathology at the School of Medicine.

Dr. Said has been teaching at the School of Dentistry since his January 6 arrival from the University of the Pacific's Arthur A. Dugoni School of Dentistry, where he served from 2009 as associate professor in the Pathology and Medicine Department, and director of the Oral and Maxillofacial Pathology Laboratory and Clinical Oral Pathology and Medicine. He had previously served as the director of the oral and maxillofacial pathology laboratory at the University of Alabama, School of Medicine, Department of Pathology and at UAB School of Dentistry, where he closely collaborated with the departments of otolaryngology head and neck surgery and oral and maxillofacial surgery. He has been managing clinical oral pathology/oral medicine patients for over 15 years.

Dr. Said received his doctor of dental surgery degree from Marquette University's School of Dentistry and a master of science degree in oral biology at the University of Illinois at Chicago. He completed two residencies in oral and maxillofacial pathology: one at the University of Illinois at Chicago and another at Long Island Jewish Hospital. He also completed an advanced Head and Neck/ENT pathology fellowship at Mount Sinai Hospital in New York.

As part of his academic leadership and involvement, Dr. Said has spearheaded numerous research studies, has presented many national and international continuing education courses, is a member of 16 professional societies

(including being on the past executive council of the North American Society of Head and Neck Pathology) and currently is on the council of the American Academy of Oral Maxillofacial Pathology. He sits on a dozen councils and committees (including past chair of the finance committee for The American Academy of Oral & Maxillofacial Pathology), serves as a reviewer for eight academic journals that address oral, head and neck pathology, and sits on the editorial board of three other publications. He also serves on the American Dental Association's National Board part II test construction committee.

For personal and political reasons, Dr. Said left Iraq in 1985, after completing four years of dental training at the University of Baghdad College of Dentistry. He is most grateful to Marquette University School of Dentistry, Milwaukee, for accepting his translation of his personal transcript copies from Arabic—a trust that permitted him to begin dental school there as a freshman and earn his DDS in 1989.

Dr. Said has a seven-year-old daughter, nine-year-old fraternal twins (boy and girl), and an eleven-year-old daughter.

He expresses joy regarding his marriage to Neda, a stay-at-home pharmacist who spends much of her time guiding their four children through the early years and caring for Dr. Said's elderly mother and father, who have resided with them for the last 18 years.

When life normalizes and some injuries heal, Dr. Said he would like to resume playing soccer and practicing martial arts.



Dr. Nasser Said-Al-Naief

Matt Enns, 2014 graduate, honored again

Shortly before his graduation from LLU School of Dentistry senior Matthew Enns, DDS'14, was the honored recipient of a Student Scholarship Award at the Annual Luncheon for the Southern California Section of the Pierre Fauchard Academy during the CDA Anaheim convention (May 15-17).

It was just six months earlier, during the October 2013 ADA and ASDA meetings in New Orleans (see *Dentistry*

Matt continues to coordinate the other student volunteers and has been able to get another clinic open for more urgent needs requiring oral surgery. He was especially pleased to recruit nearly a dozen faculty members to rotate through the Compassion Clinic and provide root canal treatment.

Matt drove home to British Columbia during summer break and returned to school with his family's van to be used as



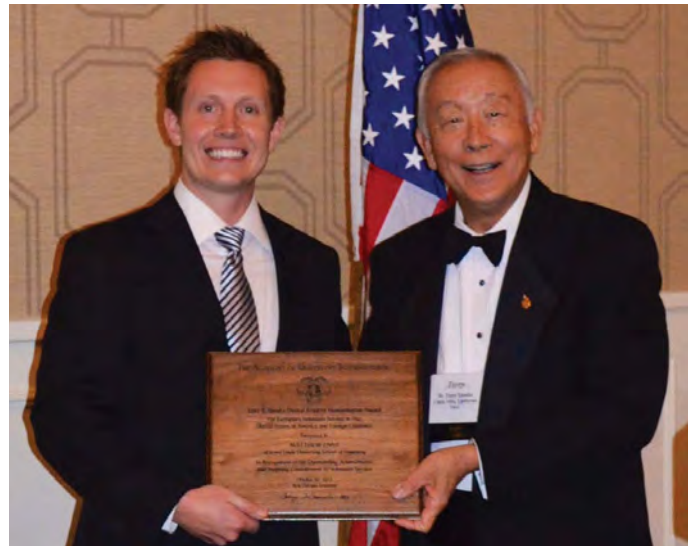
Standing with Dr. Enns (third from left) are (L-R), Ronald Fritz, DDS'72, MPH'72 (Fellow, Pierre Fauchard Academy); Daniel Castagna, DDS, president, Pierre Fauchard Academy; Matthew Enns, DDS'14, honoree; and Barry Feder, DDS, trustee, Region 5, Pierre Fauchard Academy.

25:1), that Matthew was the recipient of the Academy of Dentistry International (ADI) Terry Tanaka Award, given to one senior dental student in the United States each year during the ASDA meetings.

It was the second consecutive year that an LLUSD student was recognized with the award and the fifth over the past twelve years. Jason Mashni, DDS'13, Vincent Drouin, DDS'09, Bradley Szutz, DDS'05, and Dean Brewer, DDS'04, were Matthew's honored predecessors.

His proactive and focused concern for others has been manifest since he began dental school. At the start of his freshman year, Matt helped reorganize and run "The Homeless Clinic Riverside" at the Calvary Presbyterian Church Dental Clinic in Riverside, California, that utilizes the School's Mobile Clinic and now treats well over 40 patients per quarter.

Matt helped to reorganize the Compassion Clinic at the Blessing Center, a non-profit charitable aid organization in Redlands, California, that was treating indigent patients two to three times each quarter. With Matthew's help, the Compassion Clinic now typically treats 20 patients on Thursday evenings, 12-15 patients each Tuesday evening who have more urgent needs, and has a waiting list of 950.



Matt Enns receives the Terry Tanaka Award from its namesake, Dr. Terry Tanaka.

a service vehicle for community service projects. On weekends, he uses the van to transport supplies for the clinic on Saturday nights and returns them on Sunday nights.

His first international mission trip was a ten-day service learning trip to Nicaragua in the summer of 2011. Since then, as a student representative, he has helped to plan and organize the trips each year and acquire supplies for those efforts.

Matt is quick to point out that "everything I've done has been in cooperation with other student volunteers and leadership in the Service Learning Department, especially faculty like Dr. Mark Carpenter, Dr. Matt Streelman, Dr. Zegar Zegar, and Dr. Kevin Jetton, who are regulars at the Compassion Clinic. Without these faculty members, the clinic would not run in the successful way that it does.

"Eric Chen, my classmate, has been working with me since our D1 year and also received a service leadership award. Kyle Poulsen, Jason Joo, and Michael Cho are D3s who have taken leadership in the upcoming class, while Robert Perry and Michael Cervantes from the D2 class are already taking on leadership opportunities to help these clinics grow and improve."

Matt began in July a residency in the LLU School of Dentistry's Advanced Specialty Education Program for Implant Dentistry.

LLUSD's Boston Marathon man

Tory Silvestrin, DDS, a second-year graduate student in the School of Dentistry's Advanced Specialty Education Program in Endodontics, has been running marathons for about two and a half years. His time to complete the 26.2-mile race has steadily decreased—more than 45 minutes from a little under four hours to his personal record of two hours and 58 minutes (six minutes and 48 seconds per mile).

Having earned his doctor of dental surgery from the University of Washington at Seattle, Dr. Silvestrin first became interested in running after completing his dental board examination, part II, and found that running served as a useful outlet for stress. He discovered that as the demands on his time have increased, so has his desire to run to release the stress. "By the time I arrive back at my front door step," he says, "I'm fully refreshed."

To qualify for the Boston Marathon Dr. Silvestrin had to run the 26.2 miles in less than three hours and five minutes (approximately seven minutes flat per mile) on a certified qualifier marathon course. He reached that goal in 2013 at the Surf City Marathon.

After the terrorist bombing tragedy that took three lives and injured 264 others at the 2013 Boston Marathon finish line, Dr. Silvestrin vowed to run the 2014 Boston Marathon in solidarity with the victims that were affected by the tragic events and to stand as a member of the running community to show a united desire to seek a lifestyle of fitness undeterred. Knowing the demand would be high for runners wanting to 'take back the finish line,' and to show pride in competing in the unofficial world championship of marathon running, Dr. Silvestrin dedicated his training to improve his qualification time at the San Francisco Marathon in June 2013, in order to ensure that he would have a position at the start line for the 2014 Boston Marathon.

"As marathon runners, we are used to minimal fanfare during our racing and understand that the solitary nature of our sport is to be embraced as part of the struggle from step one to mile 26.2," he muses. "At many marathons, the

athletes often face a feeling of frustration from the surrounding community that 'we runners' are closing down 'their' streets. At the 2014 Boston Marathon, the feeling was quite opposite," he reports. "After the race, bystanders and citizens of the city would come up to me and thank me, high-five me, and applaud for me for running for 'their city, their cause.'"

There were an estimated one million bystanders along the course cheering on the record-high 36,000 runners at the 2014 Boston Marathon. Crowds were often five-plus people deep, and there was not a single stretch of the 26.2 mile point-to-point course that was devoid of loud and proud spectators.

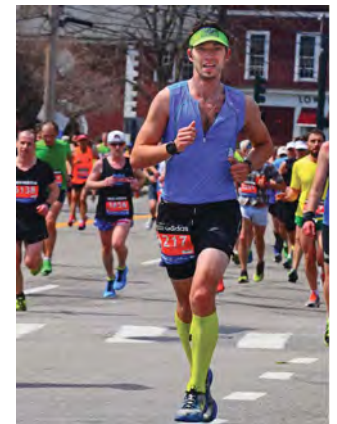
"I was not one of the runners in the 2013 Boston Marathon," says Dr. Silvestrin, "but I am a member of the running community and felt the need to run in solidarity with those that were profoundly affected by the events of the 2013 Boston Marathon. It was a unique experience—running the Boston Marathon—and one that I will hold dear forever. Crossing the finish line was enthralling (knowing how many hours I'd dedicated to qualify for and run this iconic event) and saddening (remembering the scenes and tragedy that occurred at that very place one year prior). I found myself nearly in tears with the concomitant pride in my achievement and knowing what this race means to the running community."

Dr. Silvestrin's time—three hours and one minute—placed him in the top 7 percent of the finishers and qualified him again to run the Boston Marathon in 2015.

Two days removed from the race, Dr. Silvestrin's legs are flooded with lactic acid and walking—not to mention running—is a laborious activity. He hasn't announced that he will return to run the race again, "but," he smiles, "I can't imagine passing up the opportunity to feel appreciated, challenged, and enthralled to compete again as a runner among the elite."



Tory enjoys the Wellesley Scream Tunnel—a half-mile stretch at mile 13, lined by screaming coeds from Wellesley College.



Mile 21, at the base of Heartbreak Hill, "legs feeling like they were encased in concrete."



Immediately after finishing, Tory's exhaustion is offset by a hard-earned Boston Marathon Finisher's Medal and a Finisher's Jacket.



Tory stands by a wall with Boston Marathon emblem, signed by those who participated in, or were affected by, the 2013 race.

Introducing: Robert Fritz, DDS'75

Robert Fritz, DDS'75A, joined the LLU School of Dentistry Department of Restorative Dentistry as an assistant professor in October 2013. With a major assignment in the clinic, he finds himself wanting to emulate the teachers who helped him when he was an LLUSD student. He cites the example of the late Dean Judson Klooster, DDS, whose membership in the Academy of General Dentistry prompted him to join that organization in 1976. Dr. Fritz became a fellow of the Academy in 1982 and later joined the Academy of Dentistry International. He subsequently served on various boards in the Southern California Academy and in the California Academy of General Dentistry where he met many dentists in leadership positions.

As a dentist Dr. Fritz treated his first patients in 1975. He began as a six-month associate dentist in Lancaster, California, while commuting part-time to his growing practice in Camarillo, California, where he practiced for 28 years. For clinical professionalism he relied on his fine dental education but, as he says, "I didn't know what I didn't know about the business side of things." He very much affirms the current curriculum that considers the business side of dentistry.

There's no doubt, however, that Dr. Fritz honed personal business skills during an appointment to manage a dental group at a federally qualified health care clinic in Visalia, where he served as vice president of dental affairs. A move to the Fresno-Visalia area is a significant part of Dr. Fritz's story.

He was at home with the Fritzes' two children in Camarillo on September 11, 2001, when he learned of the 9/11 attack. The night before, his wife Debbie had flown out of LAX on an American flight to New York. Hours later he learned that though marooned in New York she was not on the

targeted plane. Days later, as a flight attendant on the first plane booked to leave the airport, Debbie (and the captain) reported the passenger list to American Airlines. Officials in Dallas identified four FBI most-wanted terrorists on board.

Being alerted by the FBI, a SWAT team stormed the plane from the front and back, escorting the terrorists off the plane. In the aftermath, with Debbie on a stress-related leave that made access to LAX no longer an issue, the family moved to Fresno.

For the only time in his life, Dr. Fritz encountered a religious discrimination issue in Fresno. Following an extended health related leave, he became the subject of harassment for early Friday afternoon departures from work to observe the Sabbath, in spite of an agreement reached during his initial employment interview. When he was repeatedly harassed, he sought support from California's Fair Housing and Employment Department and from the legal department

of Pacific Union Conference of Seventh-day Adventists. Perseverance (a two-year ordeal) ended in a favorable settlement for Dr. Fritz, but no doubt made him more open to an offer from Dean Ronald Dailey, PhD, a classmate from Glendale Academy, to consider an appointment to his alma mater.

Dr. Fritz applauds advancements in dentistry and dental education. "Dentistry is developing more and more in this digital age," he notes. "The lab side of things is changing drastically with technology. X-rays are greatly improved from the dark images I once looked at."

In his teaching role, Dr. Fritz is emphasizing prevention, "the best approach to keeping you healthy." And he adds with conviction, "I believe God has placed this School here for a purpose."



Dr. Robert Fritz

Eric Chen, 2014 graduate, awarded Dental Trade Alliance Foundation scholarship

Loma Linda University School of Dentistry's Eric Chen, DDS'14, was one of four students chosen from among American dental schools in 2013 to receive a \$5,000 scholarship. The students, honored at an April 9, 2014, dinner in Arlington, Virginia, received scholarships that recognized and provided financial support for third- and fourth-year dental students who have demonstrated academic excellence in dentistry, financial need, and a commitment to community service.

During his four years of dental training, Eric participated in every service learning opportunity that he could force into his schedule and found the experiences invaluable to his development as a competent and compassionate dentist.

New Hope Free Clinic

As a D3, Eric participated in the midwifing of New Hope Free Clinic (NHFC), in Redlands, California, including the drafting of a mission statement and a memorandum of understanding that linked LLUSD to the project. A year and a half later (October 2012), the clinic opened with four, functioning dental operatories. Eric and his classmate co-leader, Matt Enns, solicited from a number of dental companies in-kind contributions that included anesthetic, dental materials, instruments, and even Dentrix software and virtual patient databases (MedKind and Practice Fusion) to stock and facilitate the new clinic.

Services provided at New Hope include most direct restorations (amalgam, composite, glass ionomer, stainless steel crowns, as well as temporary filling materials), extractions, selected cases of removal prosthodontics, and selected cases of endodontic treatment.



Eric Chen accepts the DTAF scholarship.

Having helped to organize and manage eight active chairs, 24 students, and an average of 20 patients twice a week, Eric appreciates the importance of coordination, teamwork, and communication. He says, "There is no free or for-profit clinic that operates on 'I.'" The measure and intensity of effort required of everyone is what he calls "the miracle that is the New Hope Free Clinic."

The Homeless Mobile Clinic

"The School of Dentistry's Homeless Mobile Clinic really tugs at my heart," says Eric, "because it draws a population that is the most needy: chronically homeless, mentally compromised, and often alcoholics and addicts (both current users as well as those who are recovering)."

Initiated by Brian Novy, DDS'06, alumnus and former LLUSD faculty member, the monthly Homeless Mobile Clinic brings dental services to Riverside County's homeless population at Riverside Calvary Presbyterian Church during its Sunday homeless feeding.

Eric's responsibilities include oversight of set-up and tear-down, patient triage, radiology, and patient flow. After the 15 to 20 patients that typically are seen for the day have been triaged, he supervises and assists students with unfamiliar procedures.

Nicaragua service trip

Eric participated in three service learning trips to Nicaragua led for many years by Mark Carpenter, DDS'80, Tom Rogers, DDS'83, and Hank Mercado, DDS'77. The experienced professionals lead 40 to 50 students in the capacity of what Dr. Carpenter calls, "young blood labor." Beyond clinical work, Eric's responsibilities on those trips have included inventory control and the devising of methods to make each successive year more streamlined.



The three other 2014 DTAF awardees pose with Eric Chen in front of the White House (L-R): Ms. Rachel D'Souza, University of Nevada Las Vegas School of Dental Medicine; Ms. Sarah Usher, A.T. Still University, Arizona School of Dentistry and Oral Health in Mesa, Arizona; and Ms. Chelsea Wong, University of California San Francisco School of Dentistry.

In 2013 he went to five locations, four of which were close to the capitol city of Managua and one additional venue in the outskirts of the country.

YouthHope

As the vice president of his class, Eric was responsible for creating a “dental class project” that was service oriented and exclusive to the LLUSD class of 2014. During the grand opening of the New Hope Free Clinic (NHFC), Eric met Heidi Mayer, the clinic’s founder and executive director, who was seeking dental treatment for disenfranchised teens. Seeing that the opportunity presented itself, he immediately cooperated with Ms. Mayer to get his classmates “dentally sponsoring” these teens.

Eric recruited 24 volunteers from his class to do dental screenings that assessed the needs of this specific population that became YouthHope. It became apparent that the special dental needs of the teen population are primarily anterior restorations and third molar extractions. Marcella Peterson, NHFC administrator, embraced Eric’s request for a separate day for his classmates to treat only teenage patients. He recruited 14 classmates to run seven chairs (three operatories and four portable units) from which they were able to treat nine teens from YouthHope in November of 2012.

After two more YouthHope clinics, Eric proposed to the NHFC administration that his team of volunteers would treat two teens from YouthHope every Tuesday and requested that the needy teens be separated from the general waitlist of 800 people. The NHFC administration agreed, YouthHope was incorporated into NHFC, and the YouthHope project became a great success.

RAM—CAL and CALAOMS

Twice a year, typically, Remote Access Medical-California (RAM-CAL) and the California Association of Oral & Maxillofacial Surgeons (CALAOMS) sponsors a large-scale free dental clinic comprised of dental students, local dentists, hygiene students, and local hygienists treating various regions of the Inland Empire. The last two clinics to which Eric contributed his advancing dental skills were at the Riverside County Fairgrounds in Indio, California, in April 2013, where over 1,000 patients were seen for various dental procedures.

Mary’s Mercy Center

Mary’s Mercy Center is special to Eric because it is located in the heart of one of the largest low-income populations in Southern California and addresses both child and adult dental problems.

About once every quarter, Dr. Carpenter and Dr. Rogers bring dental equipment from the Foundation of World Health



A photo from Eric’s stroll along the Tidal Basin with cherry blossoms in full bloom

to Mary’s Mercy Center in San Bernardino, California, to serve the homeless and low-income population in San Bernardino County. Mary’s Mercy Center is a homeless feeding facility that permits the dentists to use its grounds to set up 16 chairs and portable units.

If there is enough faculty coverage for clinical supervision, added to Eric’s responsibilities are the tasks of helping Claude (the clinic handyman) run two main hoses from the compressors powering dental materials and equipment, performing radiology, and maintaining patient flow. The center’s motto, says Eric, might be, “We go where the homeless are being fed.”

Flying Doctors

A favorite service experience for Eric has been the Flying Doctors Clinic headed by Larry Taber, DDS. Its most recent clinic was held for the underserved denizens of Riverside County February 2013. The patient demographic that sought care at this particular clinic were low-income Hispanic families. The Flying Doctors clinics provided direct restorations and extractions.

Eric found particularly meaningful his participation in the last clinic in the Cesar Chavez Center in Riverside because he learned that Flying Doctors had partnered with the Tzu Chi Buddhist Foundation. The Tzu Chi Foundation provided dental, optometry, and acupuncture services. He was amazed to see two disparate religious traditions join hands to heal the sick and needy.

An online video showcases the Riverside County event <<http://tinyurl.com/oa4h9se>> and illustrates the community’s interest in these service clinics and the efforts Eric and his colleagues make.

“I am grateful that I have worked with truly wonderful people that are equally committed to community service as I am,” says Eric. “Amazing mentors have shown me that it is possible to do excellent work both in private practice as well as be committed to quality community service. Inspiration comes naturally with the team of volunteers that I work with, and I am humbled by their acts of kindness and dedication. They continue to be a great source of motivation to keep moving forward.”

Faculty dentists provide oral screenings at Women's Health Conference

Under the theme "Be You! Fit. Smart. Healthy," Loma Linda University Health conducted the sixth annual Women's Health Conference at the Ontario Convention Center in Ontario, California, for women from all walks of life who intend to be better informed and more proactive about their health and overall well-being.

From the Faculty Practices of LLU School of Dentistry, Perry Burtch, DDS'89, assistant professor,



Joan Lunden address the Women's Health Conference audience.

Oral Diagnosis, Radiology, and Pathology and Doris Kore, DDS'01, MS, assistant professor, Restorative Dentistry, provided a day of courtesy oral cancer screenings on the Convention Center floor.

From among the 1,000 women who attended the convention, Drs. Kore and Burtch conducted screenings for 147 women. Of those women, 25 women presented with areas of concern or abnormalities that merit a follow-up with their regular general practitioner or specialist.

Concurrently, Krista Weymar, MBA, director of marketing, and Tina Malmberg, manager, Faculty Dental Practice at



1,000 Inland Empire women attended the Women's Health Conference.



Tina Malmberg visits with Rachelle Bussell (center) and Joan Lunden from the School's booth.

LLUSD's Center for Dentistry and Orthodontics, spoke with convention attendees representing the Center as they handed out print materials, collapsible water bottles, and organic chapsticks from the School of Dentistry booth.

Joan Lunden, the convention's keynote speaker, and Rachelle Bussell, CFRE, LLUAHSC vice president for advancement, visited with Ms. Weymar and Ms. Malmberg and discussed the importance of oral cancer screenings, regular dental appointments, and consistent brushing and flossing.

This was LLUSD's third time participating in the event and its second year conducting screenings.



Dr. Burtch and Dr. Kore bracket Tina Malmberg at the LLUSD booth.

Loma Linda University Health has participated significantly in the annual health conference for the women of the Inland Empire for the last five years. During that period, LLUH partnered with other nonprofits to produce the conference under a different name for the event. Today, LLUH is the sole producer of the event, now called the Loma Linda University Health Women's Conference.

Gordon Byrd



Dr. Gordon Byrd

After a long battle with cancer, **Gordon L. Byrd**, DDS'60, died July 6, 2014, in Parker, Texas, where he had gone for treatment.

Born in Decatur, Alabama, on August 1, 1936, Dr. Byrd completed pre dental studies at Emmanuel Missionary College (now Andrews University) in Berrien Springs, Michigan. Upon graduation at LLUSD with the dental class of '60, he spent two years in U.S. public health service to fulfill a draft requirement; he liked the appointment so well that he

remained with the health service for an additional five years.

While pursuing his subsequent practice in St. Joseph, Michigan (1967-2000), Dr. Byrd became active in the local dental society, where he served as president, and he participated in Michigan state's peer review program.

Mourning his death are Dr. Byrd's wife, Barbara, of Stevensville, Michigan, who served as his chairside assistant for many years; his two daughters—Stephanie (husband Royce) Regester of Parker, Texas; and Suzanne (husband Henry) Brown of Cairo, Georgia; and three grandchildren.

Kathleen Carter

Born in Los Angeles on November 16, 1947, **Kathleen "Katrina" Kragstad Carter**, DH'71, would serve more than 26 years on LLUSD's dental hygiene faculty. She had completed pre dental hygiene studies at La Sierra University, before entering LLUSD's dental hygiene class of 1971 and then joining the School's dental hygiene faculty in 1972. She was also actively participating in community and family pursuits, becoming known as "team mom" to her sons' sports and cycling companions.

She died March 12, 2014, in Loma Linda, California, after a vigorous battle with illness. Mourning her death are her husband, Norman Carter, DDS'73, MS'75, of Yucaipa; her sons Cody LLUSM '13 (wife, Erin) of Ann Arbor, Michigan, and Norman Eric, DDS '05 (wife Gabriela Garcia, PG'05, MS'05) of Yucaipa, California; her sister Lorraine Ehrler, DH'68, of Redlands, California, and two grandchildren.

Gifts in Kathleen Carter's memory may be made to the Ivory Society of LLUSD's Dental Hygiene Alumni Association.



Ms. Kathleen Carter

Emily Cloninger



Ms. Emily Cloninger

Surrounded by loving family, **Emily Cloninger**, DH'87, died peacefully in Visalia, California, on January 7, 2014. Born in Orange, California, on March 29, 1965, she is a graduate of Lindsay High School and attended LLUSD graduating with the Dental Hygiene Class of 1987.

A former leader in the Tulare Kings Dental Society, she was regarded as highly skilled in her practice and cared for very much not only by her colleagues but by her patients alike. Her vivacious, caring, and loving ways touched many around her. A devoted and caring mother, she was very proud of her son, who is pursuing pre-dental studies at La Sierra University in Riverside, California.

She is preceded in death by her father, Rafael Raya. She is survived by her loving mother, Josefina L. Raya, of Lindsay, California; former husband, Brett Cloninger; son, Jonathan Cloninger, of Loma Linda, California; her sister, Rosalinda Raya-Wall, DDS'75B (husband, Frank Wall, DDS'63), of Orosi, California; a brother, Ralph Raya, DDS (wife Ruth), of San Diego; a brother, Larry Raya of Lindsay; and a sister, Rebecca Raya-Fernandez, Psy.D. (husband, Victor R. Fernandez, MD), of Fresno, California; as well as several nieces and nephews.

Arthur Garner

Born on May 24, 1935, in Mussoorie, India, **Arthur Garner**, DDS'63, would follow in his parents' footsteps to become a missionary. After graduating from Glendale Academy (1953) then Walla Walla University (1957), he completed dentistry with the class of '63. A three-year practice in Lethbridge, Alberta, Canada, preceded his dental appointment in Pakistan (1965-1972). Moving to Guam to become director of a dental clinic (1972-1982), he soon also began serving (1978-1982) as associate director of health, overlooking 42 dental clinics sponsored in the Far East by the Seventh-day Adventist Church.

In 1981 Dr. Garner was honored as Alumnus of the Year at LLUSD, noting his humanitarian and administrative accomplishments. Returning to his alma mater, Dr. Garner served on the faculty 1982-1994 before moving to a practice in Cavelo, California, (1994-1999). He concluded his career by becoming co-administrator with his wife of the Black Hills Health and Education Center, 1999-2005. Retiring to Walla Walla, Washington, in 2012, Dr. Garner died there on April 8, 2014, after a long bout with Alzheimer's.

Surviving Dr. Garner are his wife Betty of Walla Walla; his three sons, Maurice of Ooltewah, Tennessee, Gordon (wife Kay) of Guam, and Kent (wife Ronda) of Walla Walla; five grandchildren, and two great grandchildren.



Dr. Arthur Garner

Peter Jensen



Dr. Peter Jensen

A loyal Easterner (born in Boston, Massachusetts, October 23, 1928), **Peter Jensen**, DDS'60, entered the Air Force in 1946 after graduating at Rindge Technical High School in Cambridge, Massachusetts. After attending Atlantic Union College, South Lancaster, Massachusetts, Dr. Jensen earned a medical technician's degree at Loma Linda University in 1954, then worked in research before entering LLUSD's dental class of '60.

Returning to the East, he practiced two years in Mystic, Connecticut, before opening an office in Marlborough, Massachusetts, where he maintained a practice for 34 years. During that time he was active in the Hudson Seventh-day Adventist church and Meadowbrook Adventist School.

Following retirement, Dr. Jensen and his wife moved to Daytona Beach, Florida, where he died following surgery complications on June 1, 2014. Mourning his death are Dr. Jensen's wife, Ruth, of Daytona Beach, whom he had met and married while in college; three daughters—Susan McGraw, Sandra Merriman, and Stacey Johlman—four grandchildren, and one great grandchild.

The family has suggested that contributions in Dr. Jensen's memory can be made to the "Peter Jensen" memorial fund at the Hudson Seventh-day Adventist Church in Hudson, Massachusetts.

Warren Kanen



Dr. Warren Kanen

Born in Grizzly Bluff, California, December 23, 1925, **Warren T. Kanen**, DDS'58, served during World War II as an army medic in France and Belgium.

After graduating from Walla Walla University and LLUSD, he spent his dental career practicing in Bishop, California, and then at Sonoma State Hospital.

Upon retirement, Dr. Kanen provided free services with Canvasback Missions in the Marshall Islands. Until his death on June 4, 2014, Dr. Kanen was an active member of the Brownsville, California, Seventh-day Adventist Church. He was inspiration for four of his grandchildren—Kelly Savage Fleck, BS'04 (DH), Katie Savage Magi, BS'10 (DH), Erin Abston (now a PA candidate at LLU), BS'08 (DH), and Michael Savage, DDS'13—to pursue dental studies at LLUSD.

Mourning his death are Dr. Kanen's wife of 36 years, Doris; his children—Denise (husband, Greg) Abston of Reno, Nevada; Donald (wife, Sue) of Alamosa, Colorado; Marlene Savage, BS'75 (DH), of Ridgefield, Washington; and David (wife, Bobbie Jo) of Linton, Indiana—his four stepdaughters—Jennifer Mayfield, LLUSM'76B, of Spokane, Washington; Debbie (husband, John) King of Parker, Colorado; Janice Mayfield of Lodi, California, and Druscilla (husband, Walter) Covington of Yuba City, California—14 grandchildren, and 14 great-grandchildren.

Arthur Morgan



Dr. Arthur Morgan

Army service in a dental office during the Korean War prompted **Arthur Morgan**, DDS'60, MS'63, born October 9, 1928, in Walla Walla, Washington, to pursue predental studies at Walla Walla University.

After completing dentistry with LLUSD's dental class of 1960, Dr. Morgan practiced in Whittier, California, for a year before returning to LLUSD. There he completed a master's degree in orthodontics (1963) in preparation to opening an office in San Bernardino, California, where he practiced for almost 30 years. During that time he also mentored and advised orthodontic students, worked as a volunteer screener for patients at California Children Services of Tri-county, and was active in his home church. In semi-retirement, he served LLUSD as instructor and patient advocate until 1998. He also became a media advisor, board member, and co-treasurer for Loma Linda Broadcasting Network.

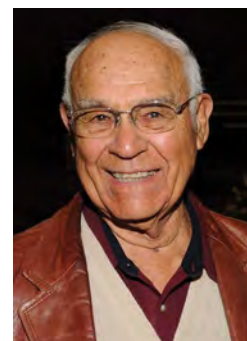
After a series of strokes in his final two years, Dr. Morgan died in Redlands on June 21, 2014. He is survived by his wife, Maralyn of Redlands; three children, Ronald (wife Mary) of Irvine, CA; Cheryl (husband Randall, DDS'83, MS'86) Hoff of Redlands; Rick (wife Tricia) of Spokane, Washington; and seven grandchildren.

Paul Nazario

Paul Nazario, DDS'58, of Santa Maria, California, died March 14, 2014, at the age of 91. Born in Puerto Rico on June 22, 1922, he became one of nine children who migrated with their parents to the United States when he was about six years old.

Dr. Nazario's education at Atlantic Union College (AUC), Massachusetts, was interrupted by military service in World War II. When he returned, he married Anne Ferris in 1949, completed his education at AUC in 1950, and moved to California to complete a physical therapy degree in Loma Linda. He would later join LLUSD's second class of dental students, graduating in 1958.

His 29 years of dental practice in Santa Maria ended with Dr. Nazario's retirement in 1987. He is survived by Anne of Santa Maria, his wife of 64 years; three sons—James (wife Michele) of Aliso Viejo, California, Thomas of Santa Maria, and Stephen (wife Jeanne) of Lincoln, Nebraska—a daughter Susanne (husband Donald) Kanen of Alamosa, Colorado—12 grandchildren, and 12 great-grandchildren. The family has established a Paul Nazario Worthy Student Memorial Fund at Valley View Junior Academy in Arroyo Grande, California.



Dr. Paul Nazario

Floyd Vipond



Dr. Floyd Vipond

Floyd Vipond, DDS'57, born in Loma Linda on April 22, 1926, would become a member of LLUSD's first graduating class. Drafted into the U.S. Army while still in high school, he had served on a hospital ship 1944-46 before completing pre dental studies at La Sierra College. Upon dental graduation he practiced a year in Hemet, and subsequently established practices first in Lompoc then in Colton, California.

In 1985 Dr. Vipond went with his wife to Saudi Arabia for a two-year dental appointment. Upon his return he pursued dentistry in Victorville and then in La Vegas until retirement in the early 2000s. He had participated actively in music as a vocalist until illness impaired his voice. He died in Yucaipa, California, not long before his 88th birthday.

Mourning his death are Dr. Vipond's children—Ellayna (husband Larry) Hoatson of Yucaipa and Bryan (wife Brigitte) of San Jacinto, California—and three grandchildren.

William Westrick

When he retired in 2006, C.W. "Bill" **Westrick**, PhD., had served LLUSD for 12 ½ years as director of the dental laboratory and as assistant professor in the Restorative Department. He died February 18, 2014, at his home in Banning, California. At 17 Dr. Westrick began a four-year navy service; he remained many years in the reserve.

An early enthusiasm for dental technology prompted Dr. Westrick's completion of a dental laboratory technician's program in 1962. Later Golden State University would award him one of the world's few doctoral degrees ever granted in precious metallurgy. He devoted his career to directing dental laboratories at UCLA and LLUSD. At LLUSD the laboratory expanded in output from an annual \$300,000 to \$1.2 million during his supervision.

Dr. Westrick was co-owner of a U.S. patent for supragingival metal attachments for implants and was instrumental in producing a vacuum type attachment for chairside assisting. He served on the boards of Pasadena College, Los Angeles College and NBC (1996-98).

Among his survivors are Dr. Westrick's wife, Ferne, his sons—Stanley (wife Tami) of Villa Park, California, and William (wife Terri) of Orange, California—five grandchildren, and many great grandchildren. The family suggests that gifts in Dr. Westrick's honor be made to Loma Linda's Ronald McDonald charity.



Dr. William Westrick

CDA San Francisco

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