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Dentistry



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- Arlene Klooster



LOMA LINDA UNIVERSITY

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LOMA LINDA UNIVERSITY DENTISTRY

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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.



Executives from CRET, Dr. Edward F. Rossomando and Charles F. Cohen, bracket Dean Charles J. Goodacre and President Richard Hart, at the ribbon cutting for the Hugh Love Center for Research & Education in Technology (p. 17).

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: Retiring Restorative Dentistry chair Doug Roberts stands fortuitously under an "Exit" sign, during a gathering in his honor.



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Dean's message: *Relinquishing an honor*

I have had the pleasure of serving as dean of Loma Linda University School of Dentistry for the past 19 years, and will step aside in June 2013. Words cannot express how much I appreciate the great honor it has been to serve in this position. I am fully aware that no person succeeds alone in this world and that whatever contributions I have made are the result of efforts of many talented and dedicated people with whom I have had the privilege of association over the years. I want to thank each alumnus, faculty, staff and student for your support and the many contributions you have made during my tenure as dean. My wish for each of you is continued success in your personal and professional endeavors. I am confident that the future of the School of Dentistry is strong and the Loma Linda team will continue to sustain a high level of educational excellence.

I recently received a message from Dr. David Green, class of 2011. His message serves as testament to the role each of you has played in making this School of Dentistry a first-class institution with strong values and solid educational experiences. Dr. Green wrote the following:

Since graduating from LLU I have completed an Advanced Education in General Dentistry (AEGD) program in the Navy. I went through the residency with nine other first year dentists. Now I am currently working at a US Marine base with 12 other young general dentists, all having graduated within a four year time-frame. With my experiences in the Navy thus far, I have had an opportunity to work closely with these young general dentists and I am continually reminded about the quality foundation I was provided with by those at the Loma Linda University School of Dentistry.

I have always heard about the reputation of LLUSD graduates, but I now have experienced it for I was given a fantastic introduction to dentistry at Loma Linda, and I am so thankful for the solid foundation upon which to build my career. There were many areas of my dental education at LLU that put me in a position to excel in dentistry. Dr. Krall and his dedication to students was unparalleled in his efforts to ensure that we had the toolkit necessary to experience



success in local anesthesia. The restorative department and their expectation of perfection established an unwavering standard of quality and quality expectation. The primary and secondary attending faculty reinforced the expectation of perfection on clinic. The perio department was instrumental in ensuring we had a solid grasp of the fundamentals, setting the stage for immediate continuing education in more advanced perio treatments, rather than having to re-learn the basics.

The administration, faculty and staff at LLUSD have proven to be invaluable and I am so thankful for their contribution to my education.

Thank you for equipping me with the tools necessary to succeed and to stand out among other general dentists. My dental education at Loma Linda University School of Dentistry has proven to be priceless!

This letter is a fitting testimony to what everyone in the School of Dentistry strives to achieve.

A handwritten signature in blue ink that reads "Charles J. Goodacre". The signature is fluid and cursive, with the first name "Charles" and last name "Goodacre" clearly legible.

Charles J. Goodacre, SD'71, MSD
Dean

Alumni president's message: *Whose responsibility is it?*

I have been hearing the phrase "access to care" a lot lately. This is an area of concern to many stakeholders: the American Dental Association, state and local dental societies, the federal government, state legislators, dental boards, the dental education community, as well as philanthropic organizations such as the W.K. Kellogg Foundation and the Pew Charitable Trusts.

February 25, 2012, marked the five-year anniversary of the tragic and untimely death of 12-year-old Diamonte Driver of Maryland. Diamonte died from complications related to a dental abscess. His mother tried to obtain dental treatment for Diamonte through the state's Medicaid system but was unable to find a dentist that would accept Medicaid coverage.

More recently, according to a February 2012 report from the Subcommittee on Primary Health and Aging of the U.S. Senate Committee on Health, Education, Labor & Pensions, in August 2011, a 24-year-old Cincinnati father, Kyle Willis, died because he could not afford the antibiotics needed to treat a dental abscess. Unfortunately, there are many more stories like these that highlight the rare but extremely serious potential consequences of the lack of access to oral health care.

Since 2000, when the U.S. Surgeon General called dental disease a "silent epidemic," there has been increasing attention paid to oral health issues. "Healthy People 2020," a report issued every decade by the U. S. Department of Health and Human Services released in December 2010, includes oral health as a leading health indicator for the first time. The Institute of Medicine published two reports in 2011 illustrating that the lack of access to needed dental care continues to be a huge problem for millions of Americans.

While there are multiple barriers to oral health care (geography, transportation, education, language, culture, and financial resources to name a few), there are multiple ways to remove these impediments, with some having been recently implemented. Policy makers in a number of states are considering the creation of new categories of licensed dental professionals who would work with dentists to deliver primary care to children and underserved adults. These new professionals are generally classified as "mid-level providers." Some dentists are concerned that authorizing new types of dental professionals could negatively affect their businesses.

States have pressing reasons to find cost-effective ways to expand the patient capacity of the current dental health care delivery system. On May 16, 2009, the Minnesota governor signed into law Senate File (SF) 2083 that authorizes the creation of the dental therapist category, a licensed dental health care provider with a bachelor's degree in dental therapy, who will work with Minnesota-licensed dentists to



provide preventive dental services, restoration of primary and permanent teeth, extraction of primary teeth, and other select treatments. For restorative and surgical procedures, the dentist must be on-site to provide intra-operative diagnosis, treatment planning, and to assist when treatment complications arise.

SF 2083 also authorized a second level of dental therapist, the advanced dental therapist. This new profession requires a bachelor's degree in dental therapy, 2,000 hours of practice, graduation from a master's level advanced dental therapy program, and the passing of a board-approved exam to demonstrate competency. On June 23, 2011, Minnesota Metropolitan State University graduated its first class of seven dental therapists.

In 2006, the American Dental Association initiated a pilot project to educate, train, and deploy a new type of community health worker, one with a focus on patient education, disease prevention and patient navigation. As of September 2012, the Community Dental Health Coordinator (CDHC) pilot project has graduated 18 students, who are now working in remote rural areas, inner cities, and American Indian communities. The final class of CDHC students will complete their training by the end of 2012, at which time 34 community dental health coordinators will be at work.

While the dental profession did not create the barriers to care, dentists need to be a part of the solution. State legislatures that have expressed a strong interest in reducing health disparities in their respective states are interested in policies that achieve that goal quickly and economically. As dentists, we cannot afford to ignore the issue while others make decisions about the future of our profession. We need to recognize that our voice in potential solutions will be in the best interests of our profession and the millions of individuals who experience barriers to dental care.

A handwritten signature in dark ink that reads "Steven G. Morrow".

Steven G. Morrow, SD'60
President, Alumni Association



LOMA LINDA
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School of Dentistry

Upcoming Courses

Continuing Dental Education

*Treatment Alternatives for
Non-healing Root Canal Treatments*
January 20-21, 2013

*Recognizing the Need for
Early Treatment in Orthodontics*
February 7, 2013

Pediatric Oral Sedation
February 8, 2013

*Spot the Signs
Before Someone Else Gets Hurt*
February 8, 2013

Restoration of the Worn Dentition
February 10, 2013

Anesthesia Symposium
February 10, 2013

*Hot Topics in Infection Control and
California Dental Practice Act*
March 3, 2013

The Non-Odontogenic Toothache
March 10, 2013

*Essences of Anterior Implant Esthetics:
The Perio-Restorative Interface*
March 24-25, 2013

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

LLU/AAID Implant MaxiCourse® 2013 Schedule

March 14-15 | April 4-5 | May 9-10 | June 6-7 | July 11-12 | August 8-9
September 5-6 | October 17-18 | November 14-15 | December 5-6

To register contact Loma Linda University School of Dentistry Continuing Dental Education office at **909-558-4685**.



Loma Linda University
School of Dentistry

Alumni Student Convention

February 7-10, 2013

*Join us for the 2013 convention
and see old friends and family.*



- Homecoming Banquet
Thursday, February 7, 2013
- Scientific Sessions
Thursday & Friday, February 7 – 8, 2013
- Recognizing the
Need for Early
Treatment in Orthodontics
Thursday, February 7, 2013
- Dental Hygiene & Assistants
Homecoming Luncheon
Thursday, February 7, 2013
- Spot the Signs Before Someone Else
Gets Hurt
Friday, February 8, 2013
- Pediatric Oral Sedation
Friday, February 8, 2013
- Restoration of the Worn Dentition
Sunday, February 10, 2013
- 33rd Annual Anesthesia Symposium
Pain in the Dental Office
Sunday, February 10, 2013

*For more information or to register, please
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visit www.dentistry.llu.edu*



LOMA LINDA
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School of Public Health

the 6th
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on Vegetarian Nutrition



Scientific Sessions | February 24-26, 2013

Loma Linda University, Loma Linda, CA, USA

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15 Units Continuing Dental Education

Sessions for CDE

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- Vegetarian Diet Patterns & Healthy Aging
- CVD, Diabetes & Metabolic Syndrome
- Vegetarian Diet Patterns & Cancer Prevention
- Are All Omega-3's Created Equal?
- Foods & Nutrients of Interest to Vegetarians: Science & Application
- Nuts: Meeting for the Minds
- Classification of Vegetarian Diet Patterns
- Soy & Women's Health

Submit Poster & Short Oral Abstracts Online.

Deadline: Friday, November 16, 2012

Early Registration

(Before Friday, November 30)

3-days: \$450 | 2-days: \$350 | 1-day: \$250

Student/postdoc/resident: \$225

For more information and to register: **VegetarianNutrition.org**

Class of 2016 welcomed by big brothers and sisters

At an outdoor luncheon on a classically congenial Southern California August afternoon, the 96 incoming members of the class of 2016 met with the “big sisters” and “big brothers” from the class of 2015 who either had selected them or been assigned to ease their entry into life as Loma Linda University dental students.

The class of 2016 is partially profiled by the following statistics. As usual, the ethnic diversity of the class is profound: 43 Asian/Pacific Islanders; 41 Caucasians; 5 Hispanics; 3 African Americans; and 4 not specified.

The mean age of the class is 25.2 years, with only 14 of its members married, down from 33 percent for last year's incoming class.

Fifty-seven of the 96 new class members attained their pre-dentistry education in California, and only three arrived

with college degrees from outside North America.

The class of 2016 members are academically responsible, with a cumulative GPA of 3.38 (science average 3.26, non-science average 3.54).



An early autumn assembly of the class of 2016

Dental Admissions test scores for members of the new class are promising. Their Academic Average (comprised of five scores rounded to the nearest whole number: quantitative reasoning, reading comprehension, biology, general chemistry, and organic chemistry) is 20.04.

2016 class members averaged 21.12 on the Perceptual Ability Test; and their average Total

Science score, based on the 100 questions in the biology, general chemistry, and organic chemistry tests, was 20.

All of the numbers suggest that the class of 2016 is positioned for lives of meaningful service.



Mentor/mentee “siblings” from the classes of 2015 and 2016 meet for lunch on the west side of Prince Hall.

Service learning trips

During the summer break of 2012, 81 LLUSD students, supported by 18 members of the School's clinical faculty, participated in service learning trips to eight different countries.

The venues vary greatly, but most students find the experience sobering and report that the opportunity to contribute their accumulating skills to people in such dire need contributes profoundly to their personal and professional growth.

Derrick Nelson, class of 2015, on a trip to Jamaica, "learned from fourth-year students and professors what it means to give out compassion to patients when you are tired

and have almost nothing left." "I wouldn't say my life was changed on this mission trip," he writes, "as much as it was reaffirmed and placed back on track."

"The high definition and true color of the sights made it clear that this was not a dream," reports Priscilla Blow, class of 2013, AS program in dental hygiene, of her trip to Haiti. What she experienced reminded her of the saying, "I cried because I had no shoes until I met a man with no feet."

Participation by class and discipline was as follows: 57 dental students (35 D3s, 16 D1s, nine D2s, and four IDPs); and 17 dental hygiene students, including one from the Associate of Science degree program.

Summer 2012 Service Learning trip Participants

Ethiopia June 10-30

Trip leader: Dr. Matthew Streelman

Dewane Brueske (D3)
Angela Hemenway (DHJr.)
Aaron Norman (IDP4)
Pierce Pfitzner (D1)
Leah Regan (DHJr.)
Kimberly Swanson (DHJr.)

Haiti June 18-28

Trip leader: Dr. Alan Woodson

Priscilla Blow (ASDHSoph.)
Valrie Johnson (DHJr.)
Trevor Thorn (D3)
Tiana Osbourne (D1)
Paul Park (D1)

Jamaica June 9-24

Trip leader: Dr. Lincoln Edwards

Dr. Edward Ko
Dr. Neal Johnson
Dr. Peter Chung
Dr. James Trott

Ashley Abrams (D3)
April Buckins (D3)
Yu-Shen Chen (D1)
Shieun Jang (D1)
Harbir Jhawar (D1)
Dai Kitamura (D3)
Ruthanna Lee (DHJr.)
Jennifer Lehnhardt (D3)
Mariah Mutya (DHJr.)
Jason Mashni (D3)
Eric Mee (D3)
Derrick Nelson (D1)
Abena Owusu-Frimpong (DHJr.)
John Yankee (D3)
Ash Dason (D3)
Mark Winslow (D2)

MEND (Los Angeles) June 19-20

**Trip leaders: Dr. Evan Lemley
& Dr. Scott Smith**

Jamie Blood (D3)
Cherestina Boulas (D2)
Regina Capulong (D3)
Joel Davis (D3)
Mone Citro (DHJr.)
Joyce De Leon (D3)
Yiqiao Lin (D1)
*Michael Kim (D3)
Jerusalem Mendoza (DHJr.)
Luiza Pecko (D2)
Jasmine Sedaghatpour (D2)
Harold West (D3)

Nicaragua June 8-17

Trip leader: Dr. Tom Rogers

Dr. Bonnie Nelson
Dr. Isabella Piedra
Dr. Brian Novy
Dr. James Lozada

Cassidy Blount (D1)
Eric Chen (D2)
Michael Cho (D1)
Matthew Enns (D2)
Simona Ivan (D3)
Jason Joo (D1)
Daniel Jo (D3)
Douglas Kim (D3)
Justin Kim (D3)
Maria Kim (D1)
Roy Koh (D3)
O Kwon (D3)
Skyler Liatti (D2)
Fallon Livingston (D2)
Joshua Masillamoni (D1)
Dina Mattar (IDP3)

Sarah McDonough (D1)
Kyle Poulsen (D1)
Robin Songhorian (D2)
Michelle Soucier (DHJr.)
Michael Staker (D3)
Karrie White (DHJr.)
Zegar Zegar (IDP3)

Peru June 14-25

Trip leader: Dr. Bonnie Retamozo

Jose Cabrera (IDP3)
Melissa Kirim (DHJr.)
Richard Lim (D3)
Nancy Lopez (DHJr.)
Charles Schein (D1)
Brandon Schmid (D3)

Swaziland

Trip leader: Dr. Doyle Nick

Dr. Leroy Leggett

Tiffany Beale (D3)
Nicole Black (DHJr.)
Robert Judd (D3)
Janelle Junn (DHJr.)
Melissa Magsipoc (D3)
Kevin Murray (D3)
Kenneth Ricks (D3)

Thailand

Trip leader: Dr. John Won

Anna Duong (DHJr.)
Kym Mung (D3)
Alvin Sitompul (D3)
Andrea Sivavajchaipong (D3)
Heath Walker (D3)
Karen Watanakeeree (D3)



Dr. Aaron Norman (IDP3) performs oral surgery on an Ethiopian patient while Dewane Brueske (D3) assists.



Kimberly Swanson (DHJr.) with Ethiopian youngsters



L-R: Richard Lim (D3), and junior dental hygiene students Melissa Kirim and Nancy Lopez pose with a young Peruvian patient.



Eric Chen (D2) and Fallon Livingston (D2) attend to a Nicaraguan patient.



Loma Linda University Dental Alumnus, Charles Walker, SD'84, assisting his son, Heath Walker (D3). In the background, Andrea Sivavajchaipong (D3) assists classmate Alvin Sitompul.



Priscilla Blow (ASDHSoph.) works with an audience in Haiti.

Changing of the guard

Fifty years ago, Dr. Douglass Roberts arrived at LLUSD from his home in the Northwest. You might say he never left until his retirement in July 2012. Dr. Roberts' impact on restorative dentistry at the School has been enormous. A colleague characterizes him as "a very careful and thoughtful worker with a commitment to excellence both in clinical practice and decision making. I would put him on my team any time."

Another former student, now faculty colleague, says, "While no one is ever perfect and we all have difficulties in some areas, there are some people who are an almost perfect fit for the job. Dr. Roberts is hard-wired to do the very best of every single thing that he does."

In his youth, Dr. Roberts admits, he was never going to be a dentist. He had completed high school at Upper Columbia Academy in Washington before arriving at Pacific Union College. Enrolling first for a concentration in science, he drifted through many majors: industrial arts, physics, chemistry, and history.

The summer of 1962 Dr. Roberts spent drilling through eight to ten feet of decomposed granite with a 105-pound jackhammer to prepare a place for PUC's swimming pool. That experience may have enhanced the suggestion that he consider using a dental drill instead for his career. The suggestion came from an advisor with whom he was exploring preparation for medical technology and who told him plainly, "You don't want to be a med tech. Have you ever considered dentistry?" The ensuing discussion about prosthodontics intrigued the student to change career directions. "It was not a well-thought-out decision," he comments, but it worked. After three years in college, Dr. Roberts entered LLUSD's class of '66.

He would join other dental students in the summer of 1965, going to Chiapas in southern Mexico for a mission dental trip. He received the fixed prosthodontics award during his senior year and accepted the School's invitation to teach half-time in the Restorative Dentistry Department. Four years later Dr. Roberts became full-time faculty.

Working in a department that covers almost half the



Dr. Doug Roberts at his desk in 2012

dental curriculum and boasts the School's largest faculty roster, Dr. Roberts brought professional precision and calm to the chairmanship, to which he was appointed from 1972 to 1977. During that time he completed a master's in restorative dentistry, "which indentured me to the School for five years," he notes wryly in conversation with people aware that his CV places him at LLUSD for all of his adult life. He returned to chairing the department in 1999, a position he filled until June 30, 2012. He presided over twice-monthly departmental meetings that drew 30 to 40 faculty in attendance.

Holding students to a high level of dentistry practice, Dr. Roberts earned from the students definitive names, such as "Re-do Roberts" and "Dougie Do Over." They knew his standards were not to be compromised. A steady stream of students passed in and out of his office daily. Each one had his attentive ear and professional counsel.

"Most of the stuff I used in lectures came from real life situations," says Dr. Roberts, and not unexpectedly, he adds, "Most of what I show is my failures. You learn from them—what worked, what failed, what options you had."

In 45 years at LLUSD, Dr. Roberts has seen rapid changes in restorative dentistry. "Today's options are greater," he notes. "We're



Dr. Roberts with his successor, Ronald Forde, SD'83.

fixing stuff instead of replacing it. There's more emphasis on aesthetics now."

Tasks in the restorative department have also changed. Just this year, the department combined clinical faculty with restorative faculty. "We were managing them but they didn't belong to us before," he observes. Another innovation designed to ensure precision came with the current policy to inspect materials going in and out of the support lab. "We examine their models based on the prescription to determine if the cases are articulated; we double check the impressions. We become the last word."

Dr. Roberts dismisses a question about how he has coped with multiple tasks and challenging situations. He simply says, "Lots of chocolate."

Recognition for his expertise came with the School's Distinguished Service Award honoring Dr. Roberts in 2005 and the Alumnus of the Year Award in 2006. Engaged in conversation about his achievements, Dr. Roberts, typically modest, is likely to switch the subject to one or more of his departmental colleagues. "I have had awfully good people to work with," he says.

His volunteer activities took Dr. Roberts to La Vida Indian Mission School in Mexico (July 1992), where his expertise was valued as the group built a duplex for faculty

and staff. It was apparent that he had mastered skills in just about any construction job—electrical, plumbing, cement forms, bricklaying. At home he works with stained glass, furniture, and cabinetry. His grandchildren have rejoiced when he produced wood toys for them; many of his friends are recipients of his wooden bowls fashioned on the lathe. When members of the Victoria Company church determined to build a church sanctuary, Dr. Roberts was a significant help in its construction on Mountain View Avenue.

In another pursuit, Dr. Roberts earned a private pilot license in 1966. He was rated for instrument flying in 1978, achieved commercial and instructor status in 1979, and gained experience flying Cessnas, Pipers, Bonanzas, and Commanders.

He looks forward to a retirement that will include yard work that puts him outdoors and woodworking in a shop that competes with the cars for space. Dr. Roberts also anticipates traveling without a heavy duty agenda, which, he admits, may be altered by the more structured agenda his wife, Marilyn, may propose. And some fortunate students will still be meeting him when he returns to LLUSD's classroom—at his own convenience—to share the knowledge he gained from entering an unanticipated career.

The evolution of a restorative dentist





Dr. Roberts enjoys special time with granddaughter Kaedyn.



An example of the extra-dental craftsmanship of Doug Roberts



Above and below: The highlight of the retirement event was the presentation by Paul Richardson, SD'72, MSED, associate dean, Clinic Administration, to Dr. Roberts of his departure gifts: an old chair from the dean's attic, some framed pictures of Prince Hall, and a small wooden lathe that Dr. Richardson built as a gag. Dr. Roberts did his best to be appreciative until the tool guy suddenly unveiled the real gift: a Delta Industrial 46-460 12-1/2-Inch Variable-Speed Midi Lathe with a 46-463 Modular Bed Extension resulting in 42 inches between centers. The wooden lathe does double duty as a holder of interchangeable parts for the real lathe in their actual positions.



Lorseli Pimentel Spicher, SD'82, and Sharon Mateja, SD'82, cheer up the retiring Dr. Roberts.



Ron Forde assumes Restorative Dentistry chair

Assuming the reins of the Restorative Department, Ronald Forde, SD'82, faces the clinic participants (students, patients, and faculty) with well-established equilibrium. His extensive world travel began in his youth when he emigrated from Barbados to Canada. College-educated in Alabama, he arrived at LLUSD to join the class of '82. Since that time Dr. Forde has practiced dentistry in Zaire (six years) and Zimbabwe (10 years), returning to the States to complete a prosthodontics residency at LLUSD in 2010.

Dr. Forde's expanding dental skills began during the early years in Africa. In dental school, he recalls, he had relied principally on handouts and notes to learn the basics of dentistry. Isolated from other professionals, he found textbooks to be what he called his "security blanket." During three-week mission furloughs, he observed oral surgery and other procedures at LLUSD which would never occur in his area unless he performed them.

His teaching skills were honed by necessity. There being no trained office staff in the area, he recruited and trained his office staff. Along with local nationals, he also treated patients who worked for the Peace Corps, USAID, and World Vision. It was an opportunity to provide his dental associates an education in oral health and care. Under Dr. Forde's tutelage, there were others who were trained to provide basic dental care in more remote settings. Later, facing a difficult case, the bush "dentist" would call Dr. Forde, who then talked him through the procedure. Licensure was no problem for the new "dentist" practicing in a country with no dental school.

Returning to his dental alma mater in 1999, Dr. Forde became director of Service Learning, bringing insights from his years in Africa. He oversaw D4s as they rotated through community clinics, becoming perhaps the only faculty member with the privilege of working one on one with every graduate. He also oriented students for overseas mission service and outfitted their trips, packing dental units and supplies at the warehouse then checking them after the trips

for any needed maintenance. He would also participate on some of these trips himself.

Embarking on the Advanced Specialty Education Program in Prosthodontics at LLUSD in 2006, Dr. Forde completed the course in 2010 and presented his research, *Changes in the Retentive Force of Locator Attachments at Selected Angulations*, in 2011. He then accepted an assignment as prosthodontist faculty for the International Dentist Program and main clinics. Following this position he came under the tutelage of the chair of Restorative Dentistry, Dr. Douglass Roberts, whose pending retirement prompted a grooming of Dr. Forde for the position. Dr. Roberts augmented his verbal advice—"Run for the hills; don't look back"—with astutely chosen experiences, exposing Dr. Forde to administrative meetings, regional education meetings, and emphasizing the necessity of expanding the educator's view from a day-to-day focus to incorporating long-term planning

and anticipating curricular changes and additions which would better prepare the graduating dentist to meet the needs of patients in today's world.

Recalling the metal billy club, flack jacket and riot helmet presented to him by Dr. Roberts at a departmental luncheon, Dr. Forde declares that he is still in a learning phase, seeking to understand "what works and doesn't work." He is asking questions: How can the Restorative Department contribute to the vision of the School? How can we achieve more in-depth and ongoing calibration of the faculty? What revisions of course content will be necessary to prepare students to adapt to a changing professional environment? How can we better evaluate the students' skills and identify areas of weakness where earlier intervention can be provided? How can separate departments better work seamlessly in treatment planning and the delivery of care?

Sharing both passion and insights with the students, Forde anticipates seeing them become involved in dental care that blends dental proficiency with a sense of mission.



Dr. Ron Forde

Hugh Love Center for Research & Education in Technology

The Loma Linda University School of Dentistry hosted a ribbon cutting and open house for its groundbreaking Hugh Love Center for Research & Education in Technology on Wednesday, August 22, 2012, in Prince Hall, Room 2270.

Consistent with the School's tradition of innovation, LLU School of Dentistry Dean Charles Goodacre responded in late 2009 to a request for proposals from the Center for Research & Education in Technology, Inc. (CRET), a forward-looking nonprofit association of dental manufacturers, suppliers, and an insurance company. Dr. Edward Rossomando, professor, University of Connecticut and CRET president and visionary, who established the association in 2004 to arrange access for dental students and faculty to the most technologically advanced tools for dental care delivery, was present—along with Charles Cohen, CRET CEO, and representatives from most of the 22 dental technology companies that contributed equipment—to celebrate the first embodiment of his vision.

The Hugh Love Center is comprised of six operatories and a three-chair open clinic. Under the direction of Dr. Nadim Baba, professor of restorative dentistry, the 3,000-square-foot Center, with equipment provided by six different manufacturers, will enable qualified students, under faculty supervision, the opportunity to treat patients using the latest in dental technology.

The Center's name honors LLUSD alumnus Hugh C. Love, DDS (class of 1961), whose unrestricted trust to the School of Dentistry made possible the renovation of the former orthodontic clinic on the second floor of Prince Hall immediately adjacent to the School's group pre-doctoral clinic.

CRET conceived the plan whereby the School of Dentistry would supply space, support staff, and integration of technology into the curriculum, while CRET would design the space and its consortium of dental equipment manufacturers would provide the technologically advanced equipment to make the center possible.

"It is not only students and faculty, but patients as well, who will derive many benefits from the Center," says Dean Goodacre, "especially the ability to meld the key foundational technical skills required of exceptional practitioners with innovative technologies that can optimize patient care in an increasingly technology-driven world. Additionally, students will learn to integrate their advanced preclinical instruction with a technologically advanced clinical experience that will prepare them to make effective decisions regarding the incorporation of technology into their practices."

In the near future, fourth-year dental students will treat patients at the Hugh Love Center for at least two weeks per student. The optimal environment, most recent model operatories, and technologically advanced equipment will give Loma Linda University students a unique opportunity to determine their personal preferences as well as assess

the advantages provided by different types and styles of delivery systems.

Mark Supanchick, design specialist, developed plans for the Center. Construction was implemented by Bryan Marshall, SD'83, owner, Alliance Healthcare Development and Construction, with oversight by Dr. Joseph Caruso, associate dean for strategic initiatives and faculty practices.



Hugh Love Center for Research & Education in Technology ribbon cutting displayed in Times Square September 11, 2012.



Below (L-R): Dr. Edward F. Rossomando, CRET founding director, and director of the Biodontics Program, University of Connecticut School of Dental Medicine; Loma Linda University School of Dentistry Dean Charles J. Goodacre; Loma Linda University President Richard Hart, and Charles F. Cohen, chair, Industry Advisory Council for CRET, cut the ribbon opening the Hugh Love Center for Research & Education in Technology.



Hugh C. Love, DDS, Class of 1961



Dr. Nadim Baba and Dean Charles J. Goodacre welcomed guests to the reception area of the new facility.



(L-R) Dr. Edward F. Rossomando, Dean Charles J. Goodacre, and Charles F. Cohen stand with some of the cutting-edge dental technology contributed by CRET's dental industry partners to the Hugh Love Center for Research & Education in Technology.



Below: Loma Linda University School of Dentistry Dean Charles J. Goodacre (front, center, blue suit); Dr. Edward F. Rossomando, CRET founding director, and director of the Biodontics Program, University of Connecticut School of Dental Medicine (front and to the right of Goodacre), and Charles F. Cohen, chair, Industry Advisory Council for CRET (far right) stand with 20 dental industry leaders at the grand opening ceremony for the Hugh Love Center for Research & Education in Technology.

Biofilm contamination in dental unit waterlines—challenges and solutions

Wu Zhang, MD, and Yming Li, DDS, MSD, PhD

Biofouling is recognized to be the primary source of contamination for dental unit waterlines (DUWLs). Untreated DUWLs typically contain 10^4 to 10^5 colony form units per milliliter (CFU/mL); microbial counts can reach up to 200,000 CFU/mL within five days after installation of new DUWLs. A variety of microorganisms have been isolated from the DUWLs. While most are gram-negative, heterotrophic, mesophilic bacteria, oral flora, skin bacteria, fungi, or yeasts, protozoa and amoebae also may be present (Fig. 1).

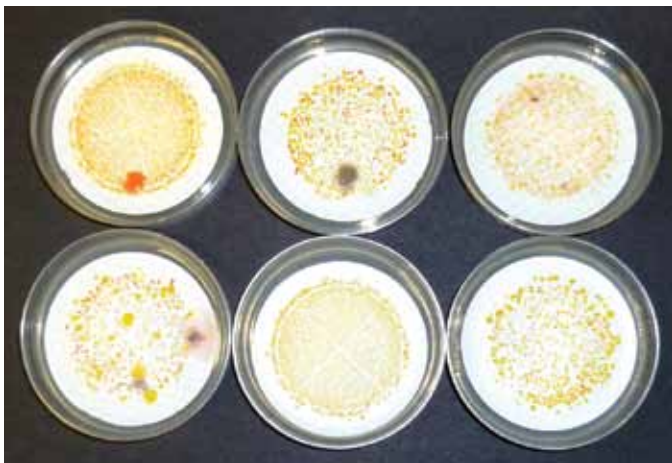


Fig. 1. Microorganisms recovered from DUWLs output water

The presence of substantial numbers of pathogens in DUWLs constitutes a real health concern. These pathogens may be harmful to medically compromised patients, especially those with cancer and immunodeficiency. In 1995 and 1999, the American Dental Association (ADA) addressed the DUWLs issue.⁽¹⁾ The Center for Disease Control and Prevention (CDC) established the *Guidelines for Infection Control in Dental Health-Care Settings—2003*, recommending that the amount of bacteria in water used as a coolant/irrigant for nonsurgical dental procedure be as low as reasonably achievable—no more than 500 CFU/mL.⁽²⁾

Multiple factors contribute to high levels of biofilm contamination in DUWLs. Microorganisms from supply water (tap water, contaminated distilled water, water in attached bottles and other water reservoirs) could continuously enter DUWLs. The malfunction of anti-retraction devices can result in retraction of blood, saliva, and human pathogens into DUWLs. The water flow in narrow-bore DUWLs is laminar, which facilitates the adherence

of microbes to its surface. Intermittent operation favors microbial colonization and proliferation on the luminal surfaces of dental tubing (Fig. 2). Additionally, because dental tubing is usually constructed of polyurethane, it offers a substantial carbon source, and aerobic heterotrophic bacteria can convert organic material in supply water into biomass locally, thereby promoting the growth of biofilm.

Biofilms are harbored on the interior surface of DUWL tubing (Figs. 3a and 3b). Many bacteria secrete exopolysaccharides almost immediately after their adherence. This characteristic phenomenon is essential for biofilm formation. The biofilm contributes to cell protection against adverse environmental conditions, resists penetration by chemical disinfectants, and aids attachment to surfaces and nutrient acquisition.

The biofilm life cycle is illustrated in Figure 4⁽³⁾ When air-water syringes, high-speed handpieces, or ultrasonic



Fig. 2. Dental units are connected with several meters of narrow-bore tubing. Heavy microbial contamination in DUWLs is a universal challenge.

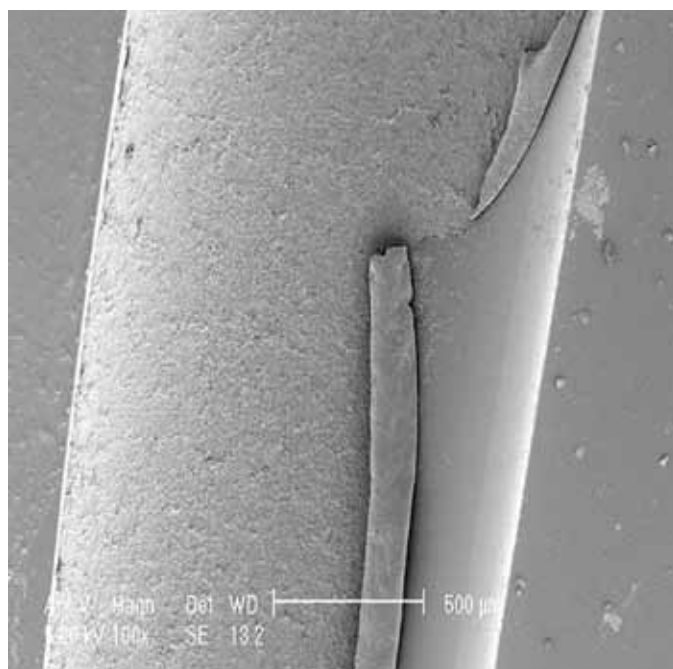


Fig. 3a. Scanning electron microscopy photomicrographs of mature biofilm covering the entire inner surface of air-water syringe tubing; magnification 100

scalers are used, the surface layer of microorganisms disperse. As they then travel and initiate new biofilm in other areas of dental tubing, they are delivered directly into the mouths of patients, or aerosolized and subsequently inhaled into the respiratory tracts of patients and dental office personnel. In humans, surfaces such as teeth, mucosal surfaces, and heart valves can be colonized by microorganisms. Therefore, DUWLs biofilm serves as a microorganism reservoir for continuous contamination of DUWL output water.

A number of studies have reported detection of blood, oral bacteria, various microorganisms, and even Hepatitis C virus (HCV) RNA of human origin in DUWLs. Such findings indicate the real risk of transmitting human-derived pathogenic microorganisms to patients and dental staff.

A number of known microorganisms have been found in DUWLs; the most problematic human pathogens include *Pseudomonas aeruginosa*, nontuberculous mycobacteria species, *Legionella* species, and *Staphylococcus aureus*. Major infection risks caused by these microbes are listed in Table 1.

Significant levels of endotoxin (lipopolysaccharide, LPS) have also been reported for contaminated DUWL output water. The source of endotoxin originates from the outer cell membranes of gram-negative bacteria,^(4,5) illustrated in Figure 5. Endotoxin is released only after destruction of the bacterial cell wall. Gram-negative bacteria account for most microorganisms recovered from DUWLs; and the total bacteria load in the DUWLs includes a large proportion that are nonviable and likely in various stages of degradation, which explains high levels of endotoxin in dental output water. The highest reported endotoxin level in

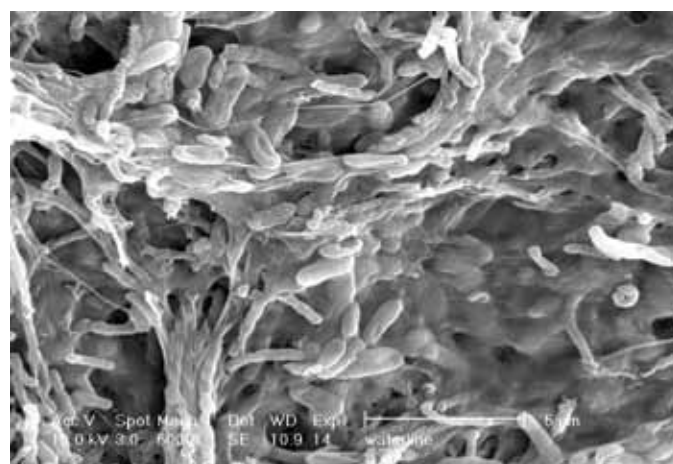


Fig. 3b. Scanning electron microscopy photomicrographs of mature biofilm covering the entire inner surface of air-water syringe tubing; magnification 6,000

DUWLs was up to 100,000 EU/mL, while the maximum level permissible in the United States Pharmacopoeia (USP) for sterile water for irrigation is 0.25 EU/mL. Endotoxin is also known as a pyrogen because of its fever-inducing properties. Humans are the most sensitive creatures in response to endotoxin exposure. Endotoxin is capable of causing various nonspecific pathophysiological reactions, such as asthma, chills, fever, tachycardia, and even death.⁽⁵⁾ Exposure to endotoxin in dental clinics is through aerosol, contaminated water droplets from high-speed handpieces, air-water syringes and ultrasonic scalers.

Consequently, it is important to find means to decrease and ultimately prevent microbial contamination in order to reduce the risk of potential health problems to both patients and oral healthcare workers. However, this is not a simple task, because it requires coordination from multiple fields that include dental unit manufacturers, research scientists, and dental professionals. Approaches listed below will help minimize biofilm contamination in DUWLs.

Establish infection control protocols for dental clinics

1. Prepare a schedule and complete checklist for maintaining an optimal working environment

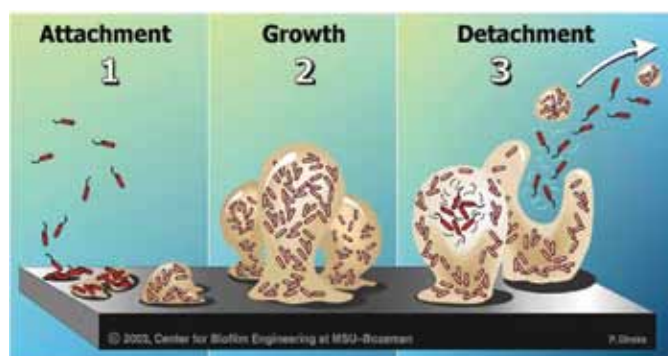


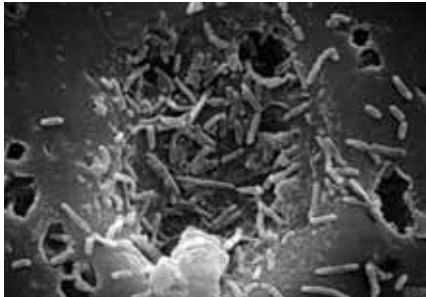



Fig. 4 The biofilm life cycle (from Center for Biofilm Engineering at Montana State University-Bozeman)

Table 1. The most problematic human pathogens isolated from DUWLs

Microorganisms	Infections	
<i>Pseudomonas aeruginosa</i>	Pneumonia, septic shock and infections of the urinary tract, gastrointestinal, skin and soft tissues	
<i>Legionella</i> species	The severity of legionellosis varies from mild febrile illness (Pontiac fever) to a potentially fatal form of pneumonia (Legionnaires' disease).	
nontuberculous mycobacteria species	Pulmonary disease resembling tuberculosis, lymphadenitis, skin disease, or disseminated disease	
<i>Staphylococcus aureus</i>	From minor skin infections to life-threatening diseases such as pneumonia, meningitis, osteomyelitis, endocarditis, toxic shock syndrome (TSS), bacteremia and sepsis	

(including decontamination of DUWLs, maintenance of antiretraction devices, and monitoring of sterilizers).

- Identify DUWL disinfectant products that fit your needs and are compatible with your dental units (contact dental unit manufacturer for information).
- Assign a staff member to handle all disinfection needs under a manager's supervision.
- Keep a logbook for any disinfection treatment and quarterly monitoring of microorganisms in dental unit water.
- Wear personal protection equipment (face mask, water resistant gown, safety glasses, and gloves) during patient treatments.
- Flush waterlines for two minutes daily before patient treatment and for 20 to 30 seconds between patients.

Table 2. Advantages and disadvantages of treatment approaches for improving microbiological quality of DUWLs

Approaches	Advantages	Disadvantages/Considerations
Daily draining and air purging regimens	May flush out some planktonic microbes	<ul style="list-style-type: none"> • Inefficient, highly unstable results
Filtration	Effective in reducing bacteria	<ul style="list-style-type: none"> • May not remove endotoxin • DUWLs can be prone to clogging • Filter must be periodically replaced, which requires more maintenance than other methods.
Independent water reservoir	May be easier to treat source water	<ul style="list-style-type: none"> • May have minimum effect on DUWLs output water, if biofilm is present in the DUWLs • Appropriate chemical treatment must be used to remove/inactivate biofilm in addition to intermittent chemical treatments. • When choosing chemical treatments, be aware of problems that may affect bonding strength or bio-safety to patients. • Bleach can corrode parts of the dental unit. • Be aware of antimicrobial resistant. Multiple disinfection regimens may apply.
Water purifier systems and boiling water	Delay formation of biofilm or enhance the effectiveness of other treatment methods	
Chemical disinfectants, biocides, and cleaning agents	<ul style="list-style-type: none"> • Removes, inactivates or prevents formation of biofilm, with varying success. • Hydrogen peroxide-containing products and electrochemically activated solutions are among the most consistently effective. 	

7. Use individual sterile irrigation for oral surgeries.
8. Use biological indicators (spore tests) at least once a week to monitor the sterilization process.
9. Clean all clinical contact surfaces with EPA-registered hospital disinfectants.

Maintain reservoir and supply water free of microbial contamination

1. Clean water reservoirs and attach water bottles weekly, to reduce microbial contamination from its source.
2. Check anti-retraction devices in dental units and follow manufacturer's instructions to avoid retraction of oral fluids and human pathogens into DUWLs.
3. Avoid the entry of skin bacteria into water reservoir bottles by not touching the outlet of the waterline during water bottle refill.

4. Handle distilled water carefully, as it can be easily contaminated with a careless hand.

Removing biofilm is the key to maintaining dental water microbial quality at acceptable levels.

1. Select adequate disinfection means for dental clinics. The pros and cons of treatment approaches for improving microbiological quality of DUWLs are listed in Table 2. The available chemical disinfectants are listed in Table 3, from the ADA website.⁽⁶⁾
2. Choose appropriate reagents and follow the manufacturer's instructions.
3. Select antimicrobial dental tubing.
4. Remain aware of the antibiotic-resistance problem and use multiple disinfection strategies.⁽⁷⁾
5. Monitor microbial contamination in DUWLs every three months.

Table 3. Chemical disinfectants listed on the ADA website

Product	Mode of action	Contact information
CHEMICAL DISINFECTANTS		
BluTab	Tablet added to water for continuous use	ProEdge Dental Products Centennial, CO 888-843-3343
ICX	Tablet added to water bottle	A-Dec Newberg, OR 800-547-1883
IGN 500	Proprietary chemical for continuous use	Airel West 909-394-1770
Micrylium Lines	Chlorhexidine gluconate based for intermittent use	Micrylium Laboratories Toronto, ON, Canada 800-489-8868
Mint-A-Kleen	Water, glycerin, alcohol, chlorhexidine gluconate xylitol, dye for continuous or intermittent use	Anodia Systems Danville, KY 866-246-2548
Sterisil Cartridge™	In-line cartridges continuously clean and maintain dental unit waterlines.	Sterisil, Inc. Palmer Lake, CO 719-622-7200
Citrisil	Tablets added to bottle for continuous use. Clean and maintain waterlines.	Sterisil, Inc. Palmer Lake, CO 719-622-7200
Citrisil Shock	Tablets for intermittent use	Sterisil, Inc. Palmer Lake, CO 719-622-7200
Sterilex Ultra	Hydrogen peroxide base for intermittent use	Sterilex 800-511-1659
VistaClean™	Aqueous cleaner derived from natural citrus botanicals for continuous or intermittent use	Vista Research Ashland, OH 419-281-3927
FILTERS		
Pall-Aquasafe™	In-line filter 0.22 micron pore size	Pall Corp. Ann Arbor, MI 800-645-6578
DentaPure®	In-line filter that continuously releases iodine 0.22 micron pore size	DentaPure Fergus Falls, MN 800-972-3543
WATER PURIFIERS		
VistaClear™ Dental Waterline Treatment System	Filtration combined with other, proprietary technologies	Vista Research Group Ashland, OH 419-281-3927
Sterisil Systems™	Filtration and antimicrobial system with monitoring continuously cleans and maintains water lines.	Sterisil, Inc. Palmer Lake, CO 719-622-7200

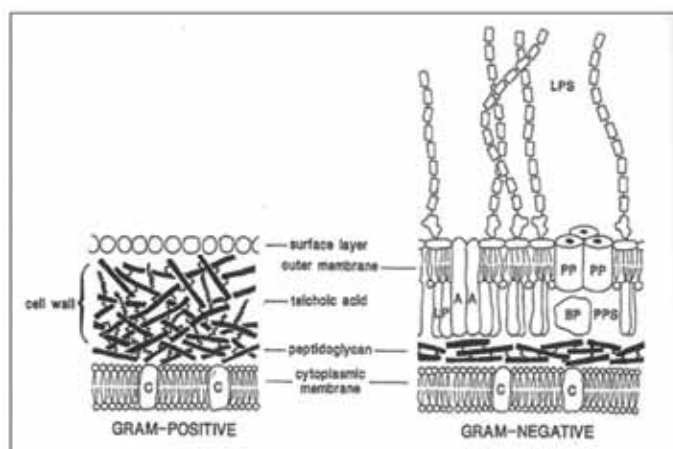


Fig. 5. Schematic diagram of gram-positive and gram-negative cell envelope; LPS=endotoxin/Polysaccharide

Start monitoring DUWLs in your dental office

The Dental Unit Waterline Testing Service is available at Loma Linda University School of Dentistry's research-oriented Sterilization Assurance Service (SAS).

SAS has been providing dental unit waterline testing services to over 500 dental offices, veterans' hospitals, government agencies and universities. SAS has been participating in the Standards Committee on Dental Products (SCDP) and International Organization for Standardization (ISO) working groups for DUWLs, conducting round robin tests organized by the ADA/SCDP Standards Committee to evaluate new approaches and to establish standards for the prevention, inactivation, and removal of biofilms in DUWLs. The Dental Unit Waterline Biocide Test Apparatus in our laboratory is pictured in Figure 6.⁽⁸⁾ SAS would like the opportunity to work with LLUSD alumni and other dental professionals to evaluate DUWLs in their dental clinics.

Sterilization Assurance Service, established in 1998, now provides biological monitoring of sterilizers for more than 700 dental offices, community colleges, and other institutions in more than 30 states. The ultimate goal of SAS is to improve public health through research and service.

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4. Beveridge TJ. Structures of gram-negative cell walls and their derived membrane vesicles. Jour. of Bacteriology 1999; 181(16): 4725-4733.



Fig. 6. Dental Unit Waterline Biocide Test Apparatus at the LLUSD Center for Dental Research

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6. Table 3. Chemical disinfectants listed in the ADA website: http://www.ada.org/sections/professionalResources/pdfs/cleaning_waterlines
7. Zhang W, Onyango O, Lin Z, Lee SS, Li Y. Evaluation of Sterilox for controlling microbial biofilm contamination of dental water. Compend Contin Dent 2007;28(1): 586-588.
8. Zhang W, Sturman, P, Khoie RN, LiY. Citrisil in controlling bacteria opportunistic pathogen contamination in DUWLs. Dental Products Reports Feb 2011; 45(2):76-84.



Wu Zhang, MD, professor, Dental Education Services and director of Sterilization Assurance Service



Yiming Li, DDS, PhD, MSD, director, Center for Dental Research

Biofilm contamination of DUWLs: quiz

Circle the letters of the correct answers.

- Which predominant microorganisms are found in DUWL output water:
 - Gram-positive bacteria
 - Gram-negative, aerobic heterotrophic bacterial species
 - Fungi and yeasts
 - Protozoa and amoebae
 - All of the above.
- The most problematic microorganisms recovered from DUWLs include:
 - Pseudomonas* species
 - Nontuberculous mycobacteria*
 - Legionella*
 - Staphylococcus aureus*
 - All of the above
- Factors contributing to high levels of microbial contamination in DUWLs are:
 - Microorganisms entering DUWLs through contaminated source water
 - Water flow in DUWLs is laminar, with minimum disturbance for microbial colonization.
 - Malfunction of antiretraction devices resulting in retraction of oral fluids and human pathogens into DUWLs
 - Intermittent operation in clinic settings encouraging the proliferation of biofilm
 - All of the above
- Aerosolized microbial contamination affects ONLY medically compromised patients.
 - True
 - False
- The CDC's *Guidelines for Infection Control in Dental Health-Care Settings*—2003 recommends that the amount of bacteria in water used as a coolant/irrigant for nonsurgical dental procedure should be:
 - ≤ 500 CFU/mL
 - ≤ 200 CFU/mL
 - ≤ 100 CFU/mL
 - None of the above
- The source endotoxin (lipopolysaccharide, LPS) in DUWLs originates from gram-positive cell membrane.
 - True
 - False
- Use of sterile source water can solve all microbial contamination problems in DUWLs.
 - True
 - False
- Removing biofilm in DUWLs is the key to minimizing microbial contamination.
 - True
 - False
- Adequate chemical disinfectants are essential to control microbial contamination.
 - True
 - False
- Methods used to treat dental water systems should target the entire biofilm, not specific organisms.
 - True
 - False

Name _____ DDS/DH Lic.# _____

Date _____ Mailing address _____ / _____ / _____

Phone _____ Street City State Zip code

After answering the questions and completing this form, mail the entire sheet (or photocopy) to:

LOMA LINDA UNIVERSITY Continuing Dental Education, 11245 Anderson Street,
Suite 120; Loma Linda, CA 92354, or you may fax completed form to (909) 558-4858

For questions please call: (909) 558-4685

Cost \$25.⁰⁰ Please circle: MASTERCARD VISA DISCOVER Credit Card No: _____

Expiration date _____ CVS No: _____

NOTE: LOMA LINDA UNIVERSITY SCHOOL OF DENTISTRY IS AUTHORIZED TO CONFER 2 HOURS OF CALIFORNIA CONTINUING DENTAL EDUCATION CREDIT FOR THIS HOME STUDY COURSE.



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.



LOMA LINDA UNIVERSITY
School of Dentistry

Sterilization Assurance Service (SAS)

ORDER FORM Date ____/____/____

Dr. Name (Last) _____ (First) _____
Name of office _____
E-mail _____
Customer ID# (for current customers) _____
Address _____
City _____ State _____ Zip _____
Phone () _____ Fax () _____
Sterilizer Type/Number/Model: _____

(Supplies for each sterilizer must be kept separate for identification purposes)

☐ Steam ☐ Chemical Vapor ☐ Dry Heat

Basic (1) One test strip and one control strip per test (2) Return envelopes

(3) Monthly report (4) Binder for reports (5) Failure notification via phone

Price	Quantity	Amount
\$79/12 tests	_____	\$ _____
\$109/24 tests	_____	\$ _____
\$159/52 tests	_____	\$ _____

Optional: Certificate of participation \$12/ea \$ _____

Basic Plus (1) One test strip and one control strip per test (2) Return envelopes

(3) Weekly report (4) Binder for reports (5) Failure notification via phone

Price	Quantity	Amount
\$209/52 tests	_____	\$ _____

Intensive (1) Two test strips and one control strip per test (2) Prepaid return

envelopes (3) Certificate of Participation (4) Report on each test

(5) Binder for reports (6) Failure notification via phone

Price	Quantity	Amount
\$108/12 tests	_____	\$ _____
\$298/52 tests	_____	\$ _____

Dental Unit Waterline Testing (DUWT)

ORDER FORM Date ____/____/____

Dr. Name (Last) _____ (First) _____
Name of office _____
E-mail _____
Customer ID# (for current customers) _____
Address _____
City _____ State _____ Zip _____
Phone () _____ Fax () _____

- * Full dilutions indicate exact Heterotrophic bacteria counts
- * Containers and ice pack for DUW testing are provided
- * Ship DUW samples via Express Mail to SAS Laboratory

Price / Kits	Amount	Price / Kits	Amount
\$68/3 tests	\$ _____	\$125/6 tests	\$ _____
\$190/10 tests	\$ _____	\$360/20 tests	\$ _____

Optional: Certificate \$12/ea. \$ _____

Add \$10.00 per box for shipping and handling

Check enclosed \$ _____ payable to SAS-LLU

Charge: Total \$ _____ ☐  ☐

Card number _____

Exp. Date ____/____ CCV# _____

Mail to: Sterilization Assurance Service

Loma Linda University School of Dentistry
24879 Taylor Street, Loma Linda, CA 92350

Tel: (909) 558-8176 (909) 558-8794

Fax: (909) 558-0307 E-mail: sas@llu.edu

Web: <http://www.llu.edu/dentistry/sas.html>

Service is our calling

Edna Maye Loveless, PhD

In his early days of dental practice, Doyle Nick, SD'78, PG'95, associate professor, Department of Restorative Dentistry, recalls greeting a patient with his usual language of social cohesion, "How are you today?"

Settling into the dental chair, his patient sighed and responded, "Not so good. My wife is filing for divorce today."

Facing his patient, Dr. Nick asked himself, "So what do I say now?" It wasn't the time to say his usual "Let's take a look at that tooth that's been bothering you."

Well prepared for dental challenges, Dr. Nick says he was ill prepared to meet a spiritual need when it arose. He was finding that "the spiritual concerns of patients come to the surface, especially if they like you and trust you. By sitting in my dental chair, a person has decided to trust me. I can't ignore that. It's unprofessional to fail to address spiritual concerns that arise."

So what do you respond when your patient announces, "Today is not a good day for me. My son died a year ago today?"

An annual spiritual care conference sponsored by the Center for Life and Wholeness in the University's School of Religion addressed these issues. Practitioners described their ways of sharing Christ with their patients. Students at the conference participated in role-playing situations where they could respond to patients in ways that emulate the caring demeanor of Jesus. Learning to empathize with patients expanded the student's spiritual insights, an important aspect of education at a Christian school with the motto "Service is our calling."

LLUSD applicants receive a statement orienting them to the values and lifestyle actively encouraged on campus. They learn about required chapel attendance, which provides stabilizing moments described by a class of '12 dental hygiene student this way, "Even though I'm not a Christian, I love the chapel experience." Students discover that at this uniquely faith-based dental school, religion courses are designed to integrate faith and learning, Sabbath is observed, worship opportunities abound, and alcohol, tobacco, and illegal drugs are restricted to promote a healthful lifestyle. This comprehensive design for 'living our values' elicited an assessment from another class of '12 dental hygiene student, "I believe this institution incorporates the spiritual aspect into all activities and events that occur."

Arriving in Prince Hall, the heart of the School of Dentistry's educational programs, the student sees at the

elevator a digital signage display flashing reminders of essentials that transcend academic and clinical demands. One moment it's Albert Schweitzer's words: "Until he extends his circle of compassion to all living things, man will not himself find peace." A statement from Billy Graham may follow, "Because God is the giver and source of our life, He has a legitimate claim upon our lives."

A class of '14 student recalls unusual content in the introductory biochemistry class taught by George Lessard, PhD, emeritus professor, Dental Education Services. It was a masterfully designed course that established its relevance to dental practice. But it also established the relevance of the School's core commitment as Dr. Lessard announced, "Dentistry is a ministry, not just a job. At LLUSD our slogan is 'I answer to a Higher Authority.'" An SD'14 classmate adds, "In our other classes since then, we have been able to hear similar comments to build on that, something I appreciate here at LLUSD."

During their second quarter at the School, students in dentistry, dental hygiene, and the International Dentist Program meet for a dedicatory service where their family members join alumni, students, and faculty attending the Alumni Student Convention. During the dedication service, these first-year students receive Bibles embossed with their names and the School of Dentistry insignia reminding them of the opportunities to blend Christian principles with their professional expertise.

In his second year communication class, a dental student

'13 recalls practice interviews with classmates leading to the discovery that everybody has a story. The opportunity to tell that story can add depth to

interaction with a dental patient. Evaluated on evidence of empathy and appropriateness, the student was learning ways to minister to a patient's non-dental needs.

Students have cited with appreciation faculty who reinforce their understanding of Christ's demeanor. For example, a class of '12 dental student describes Barry Krall, SD'90, assistant professor of dental anesthesiology, noting, "In our discussions on Providence's purpose in our lives, he cites God and His guidance as a major player in our daily lives."

A student completing the International Dentist Program in 2012 described Michael Fitzpatrick, SD'87, clinic director, as "so down to earth and humble." She added, "He explained once that after he was done with school he went to church and had a talk with God and realized that he needed to be closer to Him. This testimony was very moving to me."

*Dentistry is a ministry not just a job.
At LLUSD our slogan is "I answer to a
Higher Authority."*

Students often identify faculty behaviors as evidence of Christian commitment. A class of '12 dental student names Daniel Tan, SD'75A, professor of restorative dentistry, and Frederick Berry, DDS, professor of restorative dentistry, for their "spiritual attitude," and adds a description of Dr. Eileen Kim, SD'10, assistant professor, Restorative Dentistry: "her patience, kindness, and understanding when dealing with irate patients on the main clinic." Another graduate of the class of '12 recalls Dr. Tan's "sincere prayers before classes and exams." Where else would a dental student find strength and encouragement from devotionals and prayer before class, a practice recalled with appreciation by students who were in classes taught by, among others, Dr. Nick, and Gary Golden, SD'76, assistant professor, restorative dentistry?

As he was graduating in 2012, another dental student spoke about the spiritual impact of Graham Stacey, PhD, associate dean, student affairs: "He just cares about the students; he has on multiple occasions sat down and talked to me."

Identifying signs of integrity as evidence of Christian behavior, a student cited Douglass Roberts, SD'66, MS'77, recently retired chair, Department of Restorative Dentistry, as a person who was "always helpful and always did the right things for our patients. He never tried to take short cuts."

Dean Charles Goodacre, SD'71, underlines his commitment to providing an environment at LLUSD where Christian principles are embraced and regularly applied. Maintaining an excellent reputation for the School is important, he says, adding that "God expects us to excel in whatever vocation we pursue." Excelling, he notes, requires great teachers, excellent clinical experience, opportunities for research, and the nurture of a diverse student population. "And we have a program to enrich students' spiritual and personal growth," he adds, speaking with appreciation for the meaningful church relationship he has found on campus.

Many LLUSD students will affirm that caring for underserved populations has increased their Christian commitment. In turn, this experience is designed to give impetus to the good news of Jesus Christ, aligning with an oft-repeated slogan from the pages of *Ministry of Healing*: "Christ's method alone will give true success in reaching the people. The Savior mingled with men as one who desired their good. He showed His sympathy for them, ministered to their needs, and won their confidence. Then He bade them, 'Follow Me.'"¹

A dental student coming home from a 2011 mission trip

to Ethiopia (all students are required to perform services for underserved populations) expressed insight: "Mission is what Christ's life was all about. I've often asked what it means to know Christ. Well, I found my answer. The act of knowing Christ should be manifested in our actions." And a dental hygiene graduate of the class of '12 says simply, "The thing that made the biggest spiritual impact was my mission trip to Romania."

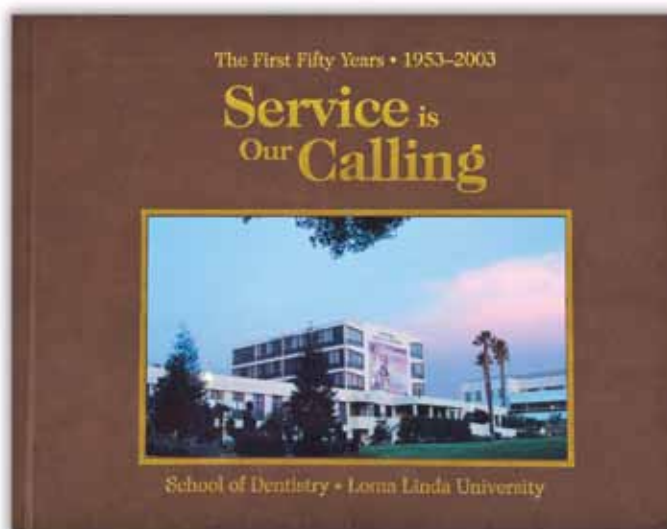
The ministry of oral healthcare at Loma Linda University's School of Dentistry has caught on in a significant way. When

the members of the class of '13 made a pact to "adopt Honduras" during their second year at LLUSD, they determined to engage every member of the class in the project, and to maintain the connection throughout their careers. "We're wanting to create a significant, ongoing presence at a needy site," explains Brit Steel, SD'15. "We're here together for four years. But when we walk out, what have we done to make a difference?"

Making a difference is part of LLUSD's reason for being. As Dr. Nick puts it, "In dentistry if you care more about money or points, you are going to be doing a disservice to the profession, especially if it has Christianity associated with it. Dentistry is a calling. It has to be a business to be successful, but it's a calling. If we are going to do dentistry under a Christian umbrella, we need to make the spiritual needs of our patients just as important as their physical needs, and we need to be thinking about that with every single patient."

Some LLUSD patients have sent unsolicited letters expressing appreciation for the unique aspects discerned in the School's clinic. Consider this father's words: "How blessed I feel to have my son receive care at your clinic. I would like you to know that the ethical practices that are required by your university are being met to the fullest in the clinic." Another patient describes a student's successful ministry: "In addition to being a fine dentist, he is also an outstanding Christian gentleman—easy to talk with, exceptionally patient, and knowledgeable in explaining the procedures he believed he needed to perform."

"None of us is perfect," says a dental professor, "but under the tutelage of Jesus Christ, we strive to represent Him. At LLUSD we are committed to dispense care—both dental and spiritual."



1. Ellen White, *Ministry of Healing*, p. 143.

ADA customizes EBD workshop for LLU faculty

One size fits all may be fine for pajamas, but some things call for a tailored fit.

Loma Linda University School of Dentistry got just such a precision when the school tapped the ADA Center for Evidence-Based Dentistry to customize a two-day EBD workshop for its faculty in June.

"There has been long-standing interest in the ADA Center for EBD providing custom EBD educational programs not only to dental schools, but also to component and constituent dental societies as well as specialty organizations," said Julie Frantsve-Hawley, RDH, Ph.D., senior director of the center. "The workshop was a pilot program for us, and with its overwhelming success we are now able to develop customized workshops for others."

It all started at the 2011 ADA EBD Champions Conference, where Dr. Leif Bakland, Ronald E. Buell Professor of Endodontics at Loma Linda, was in attendance. Dr. Bakland found the Champions conference to be an inspiring revelation.

"I had expected it to be full of faculty members like myself," he said. "But here were all of these private practitioners, and I'm thinking, 'Why are they taking time off? It's costing them to do it, and they're coming to participate in this conference.' What dawned on me is that these were dentists who were

interested in their patients and that the EBD conference was ultimately for the benefit of patients. That was kind of a light bulb that went off in my head."

Based on Dr. Bakland's positive Champions experience, the Loma Linda dental school later sought a robust and comprehensive EBD session suited to its faculty, especially in light of the school's upcoming site visit from the Commission on Dental Accreditation.

"When I got back to Loma Linda, I told them that if we could enhance our EBD concept here at the school, both with regard to our faculty and students, that would probably play a major role in us preparing and teaching students critical



Julie Frantsve-Hawley, RDH, PhD; American Dental Association, lends her expertise to John Leyman, DDS (foreground), chair, Department of Dental Anesthesiology and Special Care Dentistry, and Robert Handysides, DDS, chair, Department of Endodontics.



Dr. Leif Bakland (foreground), backed by Wu Zhang, MD, professor, Dental Education Service, and a host of LLUSD faculty, enjoy the presentation by lecturers from the ADA Center for Evidence-Based Dentistry.

thinking,” Dr. Bakland said. “The standards that CODA uses to evaluate schools and programs are constantly refined and changed. A new area of the standards is to teach dental students and train them in critical thinking with respect to diagnoses and treatment planning and so on, and that is something that is clearly related to EBD. That’s what triggered my thinking about this.”

Dr. Charles Goodacre, dean of the dental school, wanted a workshop that engaged his faculty with robust examples. He found that the ADA’s customized workshop fit the bill.

“There were a lot of examples,” he said. “I thought they did a very nice job of doing what we asked them to do and not spend as much time on the theory as on actual real examples, particularly for skeptical faculty members. That’s what they need more than the theory of it.”

The entire Loma Linda School of Dentistry faculty attended the first day of the workshop and then an intensive

session was held on day two with a smaller group of faculty.

“I’ve gotten a lot of positive feedback about it,” Dr. Goodacre said. “There were different faculty that have started a little study club where they can get together a small number of them to look over a particular topic and find out what evidence is going on. That’s a positive step. And I’ve seen some faculty sending articles back and forth to each other. That’s a start.”

For more information on customizing EBD workshops for your institution, contact Erica Vassilos, manager, ADA Center for Evidence-Based Dentistry, at Ext. 2523 or email vassilose@ada.org.

Williams J. ADA customizes EBD workshop for LLU faculty. Posted online October 15, 2012 at <http://www.ada.org/news/7703.aspx>. Copyright © 2012 American Dental Association. All rights reserved. Reprinted by permission.

*Deja Vu, **supper**, and CE credits all at once.*

Remember when you made your table clinic presentations not so long ago?

Come recollect, empathize—even learn—as the current crop of dental and dental hygiene students use digital media to present their research in Clinical, Laboratory, and Educational categories.

WHEN: February 19, 5:00 pm. Clinical Category (**Pizza**)
February 20, 5:00 pm. Laboratory Category (**Burritos**)
February 21, 5:00 pm. Educational Category (**Spaghetti**)

WHERE: Damazo Amphitheater in the Centennial Complex

Food and water will be provided—along with three (3) hours of continuing education credit—for each of the three evenings you attend.

Attendees must **RSVP for food to: marnett@llu.edu**

Presentations begin at 5:30 p.m.

RSVP by 2/13/2012.

Good Samaritan unveiled in Prince Hall

An artistic glass etching, based on a brass sculpture of the Good Samaritan, was unveiled Friday, November 9, 2012, where it now hangs on the east interior wall of the School of Dentistry clinic patient waiting area.

The etching related to Jesus' Luke 10 parable was made possible by a generous gift from Daniel D. Newbold, SD'82, PG'92, assistant professor, Department of Periodontics, and his wife, Melodee.

Dr. and Mrs. Newbold were impressed with the glass frieze when in February this year they saw a copy of it unveiled at the Center for Dentistry and Orthodontics in San Bernardino. The couple confided in Dean Charles Goodacre their conviction that it should also be on display in a prominent place in the School of Dentistry.

The Good Samaritan brass sculpture from which this work in glass originated was created by Alan Collins and is prominently displayed between the School of Dentistry and the University Church. Collins, an English-born sculptor, is noted for his work on the John F. Kennedy Memorial at Runnymede, England; Great Britain's Guildford Cathedral; and for a recent work on campus representing



Dr. and Mrs. Newbold pose with Dean Goodacre and their contribution to the School of Dentistry's patient waiting area.

Jesus as the healer of the woman who touched His robe.

The depiction of the Good Samaritan represents the philosophy of Loma Linda University "to make man whole" and the School of Dentistry's motto, "Service is our calling."

Mathew Kattadiyil honored by College of Prosthodontists

Loma Linda University School of Dentistry Associate Professor Mathew T. Kattadiyil, DDS, MSD, MS, director, Advanced Specialty Education Program in Prosthodontics, was selected by the American College of Prosthodontists to receive the Educator of the Year award during the first weekend in November at the American College of Prosthodontists Annual Session in Baltimore, Maryland.

The American College of Prosthodontists, through its awards program, formally recognizes individuals whose contributions to the specialty or to the College are outstanding and substantial. Dr. Kattadiyil was recognized November 2012, during the Annual Awards and President's Dinner.

Dr. Kattadiyil is a diplomate of the American Board of Prosthodontics and is a fellow of the American College of Prosthodontists.



Dr. Mathew Kattadiyil

Neal Johnson guests on Hope Channel's *Go Healthy . . . For Good*

School of Dentistry associate professor of Oral Diagnosis, Radiology, and Pathology, Neal Johnson, PhD, SD'08, was a guest, September 12, 2012, on the Hope Channel's new television program *Go Healthy . . . For Good*. Dr. Johnson was a remote guest—2,243 miles remote (Dr. Johnson in Redlands, California, the Hope Channel studio in Silver Spring, Maryland).

"Go Healthy" host, Dr. Nerida McKibben, an ObGyn specialist with an interest in lifestyle medicine, discussed with Dr. Johnson and her in-studio guest, Fred Hardinge, DrPH, RD, the health risks involved in the consumption of sodas and energy drinks.

Dr. Johnson sat in front of a computer with a web cam to participate in the program using Skype, software that enables users to communicate over the internet by voice, video, and instant messaging.

In response to questions posed by the show's host regarding the risks created by the ingestion of soft drinks, sports drinks, and high-energy drinks. Dr. Johnson implicated "the acids in most sodas—carbonic and citrus especially—that cause enamel erosion by demineralizing teeth." He said it is "the combination of content and frequency of use that causes the 'perfect storm' that results in erosion of the enamel and the cavities that form later as a result of the sugar that is in the drinks that stick to the teeth."

"High energy drinks are actually worse than the first two categories," Dr. Johnson said, "because they are so acidic . . . the saliva that is responsible for neutralizing the acid in the mouth often times cannot keep up, depending on the frequency of consumption of the energy drinks."

Regarding what to do about teeth with damaged or missing enamel, Dr. Johnson discussed the application of "veneers or other synthetics that will appear similar to the tooth structure so that people will have their smile again."

Go Healthy . . . For Good is produced and broadcast by Hope Channel North America each evening, Monday through Thursday at 7 pm EST. In North America, *Go Healthy . . . For Good* is carried on DIRECTV, which has a subscription to one in six households in North America—19 million households with a potential viewing audience of nearly 60 million. It is also broadcast globally live via satellite on Hope Channel International in Europe, Australasia, India and Africa.

The *Go Healthy . . . For Good* segment on which Dr. Johnson appeared can be seen at <http://tinyurl.com/ahvko25>



Go Healthy . . . For Good host Dr. Nerida McKibben



Dr. McKibben and Dr. Johnson dialog at distance.



Dr. Neal Johnson on Go Healthy . . . For Good

LLUSD participates in Speaking of Women's Health

A small team of LLU School of Dentistry faculty and graduate program students may have saved lives by providing volunteer oral health screenings at the November 16, 2012, annual Speaking of Women's Health Conference held at the Ontario Convention Center.

Mathew Kattadiyil, DDS, MDS, MS'99, director, Advanced Specialty Education Program in Prosthodontics; Andrea Lewis Beckford, SD'05, MBA'07, assistant professor, Restorative Dentistry; Dr. Joshua Cartter (3rd year resident, Advanced Specialty Education Program in Prosthodontics); and Dr. Ewa Parciak (2nd year resident, Advanced Specialty Education Program in Prosthodontics), performed oral health screenings on 141 attendees of the conference.

Among the women screened, the doctors identified 15 who presented with areas of concern or abnormalities that needed follow-up with the patient's general practitioner or specialist. "If the screenings caught something that would otherwise have gone undetected, then the event was more than successful," says Tina Malmberg, manager, Faculty Dental Practices at LLUSD's Center for Dentistry and Orthodontics.

Beyond his oversight of the School's clinical presence, Dr. Kattadiyil spoke to a breakout session about "The Power of a Smile," emphasizing the life enhancing effect of healthy, beautiful teeth on self-confidence and overall quality of life. Dr. Kattadiyil reviewed the dental options for maintaining the perfect smile and said, "In this day and age when the patient has multiple options for treatment to create that beautiful smile, a prosthodontist can be a tremendous resource in bringing different specialists together and lead that team to plan, sequence and achieve the most favorable result in highly complex situations."

Krista Juhl, MBA, director of marketing, arranged for the School of Dentistry's presence at the Loma Linda University Health sponsored Speaking of Women's Health Conference and provided 1,000 women with information about its Center for Dentistry and Orthodontics.



Drs. Joshua Cartter, Ewa Parciak, and Mathew Kattadiyil pause to pose.



Dr. Parciak speaks with a screening attendee while Krista Juhl and Tina Malmberg visit with conference attendees.



Drs. Andrea Beckford and Joshua Cartter visit with conference attendees.

Nancy Davidson, LLUSD retires

Friday, September 28, 2012, was Nancy Davidson's last day as an LLU School of Dentistry employee.

She joined the School of Dentistry on October 15, 1987, as an administrative assistant to the associate dean for Financial Administration (first for Todd Murdoch, MPH, later for Ron Secor, MBA) and remained in that office for just two weeks short of 25 years.

Kathleen Moore, MHIS, LLUSD associate dean, Dental Educational Support Services, says, "Nancy Davidson consistently demonstrated excellence and accuracy in all she did for the School, while simultaneously showing a concern for the interests and families of the staff and faculty. When Nancy complimented me, I knew I deserved it!"

Nancy's consistent insistence on perfection did not always overshadow her self-deprecating sense of humor. Shortly after Dentistry's managing editor, Doug Hackleman, MA, joined LLUSD in 2009, he had taken a seat early at the back of one of the school's first-floor amphitheaters for some now

forgotten assembly. Nancy took a seat next to him and said she had heard that he was "the School's new gadfly." After a little banter about that, he asked her if she had a reputation,

and she said, "Yes, as a mean old woman." Doug suggested that maybe "curmudgeon" would be a better description. Her immediate response: "No, because that would imply wisdom."

What Doug knows from personal experience is that Nancy was the most effective proofreader the School's alumni journal had.

Beyond her unique skill sets, Nancy's generosity to LLUSD has been unique. In 2000, Dean Goodacre, DDS, MSD, invited Nancy to become a Dean's Circle member, an invitation she accepted. She became the first

(and until recently the only) Dean's Circle member among the School's staff employees.

On her last day at the School, 17 of Nancy's favorite co-workers took her to BJ's Restaurant in Redlands where she was feted and presented the latest Apple iPad as a retirement gift.



Debbie Tuttle, administrative assistant senior with Nancy Davidson, her fifth-floor office neighbor of many years.

California governor appoints Michelle Hurlbutt

California Governor Edmund G. Brown Jr. announced, August 23, 2012, the appointment of Michelle Hurlbutt, MS, associate professor, Department of Dental Hygiene, to the Dental Hygiene Committee of California. Ms. Hurlbutt was first appointed to the Dental Hygiene Committee by then Governor Arnold Schwarzenegger in 2009.

Ms. Hurlbutt has been an associate professor at the Loma Linda University School of Dentistry since 1999 and a registered dental hygienist at the office of Nathan Pfister, DDS, and William Domb, DMD, since 1998. This position does not require California Senate confirmation and the compensation is \$100 per diem. Hurlbutt is a Republican.



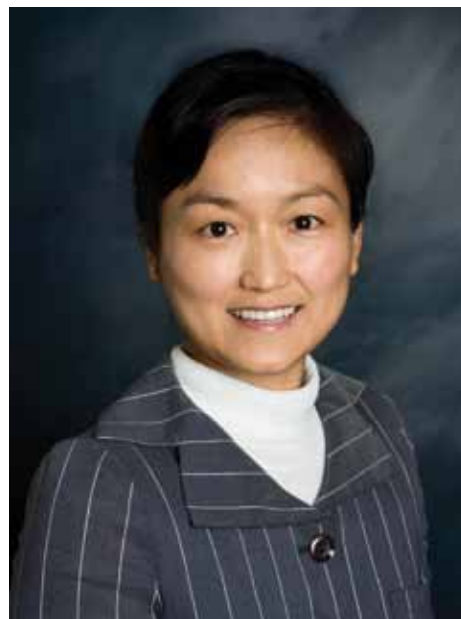
Michelle Hurlbutt

So Ran Kwon receives SCAD VITA Award

So Ran Kwon, DDS, PhD, MS, associate professor, Department of Restorative Dentistry, received the VITA Award for excellence in research related to color and appearance in esthetic dentistry by the Society for Color and Appearance in Dentistry (SCAD) at its annual meeting held September 28-29, 2012, in Chicago.

The Society for Color and Appearance in Dentistry (SCAD) was founded in 2008 as a consortium of dental professionals and other experts interested in this area of aesthetic dentistry specifically related to scientific investigation and application of color and appearance in dentistry.

Dr. Kwon joined the LLUSD faculty in the summer of 2011 as an associate professor in the Department of Restorative Dentistry. One of her major achievements is authorship of the textbook, *Tooth Whitening in Esthetic Dentistry*, published in 2008 by Quintessence.



Dr. So Ran Kwon

Family Health Fair thrives and grows

The School of Dentistry had a significant presence—including its Mobile Clinic and a booth representing the Center for Dentistry and Orthodontics (CDO)—at Loma Linda University's annual Family Health Fair held this year at the Drayson Center on October 28, 2012, from 7:00 am to 2:00 pm.

Darlene Cheek, DH'71, MPH, assistant professor, Department of Dental Hygiene, reports that 16 senior dental hygiene students, under the supervision of Gary Kerstetter, SD'82, assistant professor, Service Learning, provided oral health education to approximately 500 people in the LLUSD Mobile Clinic.

Krista Juhl, MBA, director of marketing, and Tina Malmberg, CDO manager, running the CDO booth, interacted with roughly 1,500 fair attendees giving away a comparable number of oral healthcare products: floss, toothpaste, lip balm, and promotional materials for faculty practice at CDO.

The availability of free flu shots, health education, basic dental hygiene screenings, food, games, food samples from event sponsors (such as Jamba Juice and The Old Spaghetti Factory), drawings for prizes (including a chance to win a

Disneyland Family Package for four with a two-night stay at a nearby hotel), and the first annual Family Health Fair Community 5K Walk/Run, drew around 2,000 people to the annual event.



Tina Malmberg and Krista Juhl make a fair attendee happy.

Sean Lee represents LLUSD at IADR

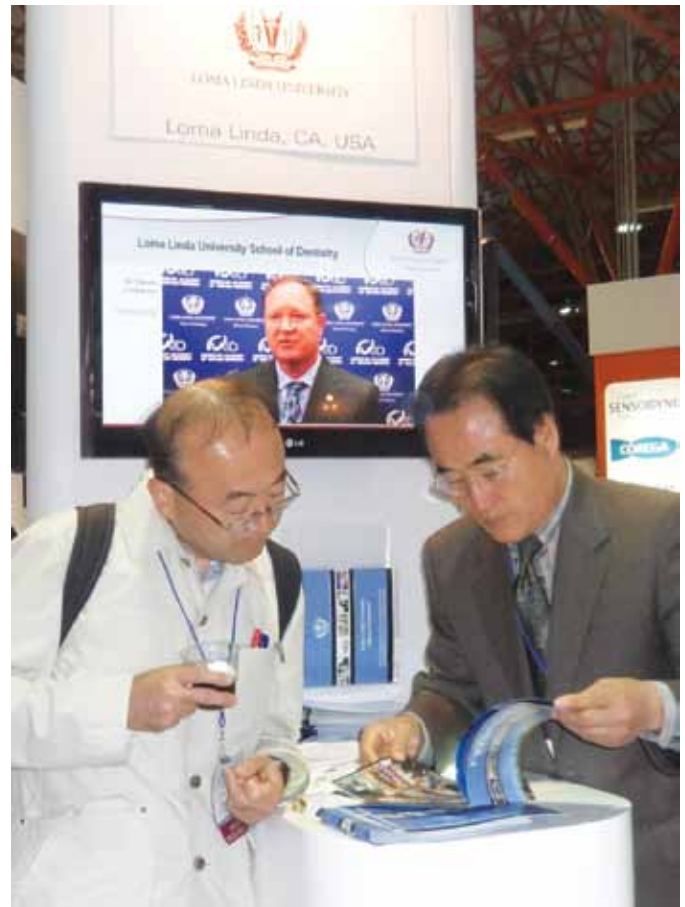
Sean Lee, DDS, professor, restorative dentistry, was the sole LLUSD representative among 4,000 individuals who attended the recent (June 20-23) annual meetings of the International Association for Dental Research (IADR) held at Brazil's Convention Center in the town of Iguaçu Falls.

Located where three South American countries (Paraguay, Argentina, and Brazil) intersect at Iguaçu Falls (the second largest cataract in the world), the venue provides a spectacular location in which to network with peers while learning the latest in dental, oral, and craniofacial research.

Manning the LLUSD booth solo in the Nobel Biocare exhibitor space for three days, Dr. Lee handed out (from his 67 kilogram stash of LLUSD materials) 500 organic mint-flavored lip balms embossed with the School's logo and motto, and a similar number of the School's 24-page "Facts Highlights and Firsts" brochure. Dr. Lee says that a dozen dentists expressed a definite interest in matriculating to one or another of the School's advanced specialty education programs.

Besides representing the School of Dentistry on the exhibitors' floor, Dr. Lee presented his recently completed 48-month research—a split-mouth study (52 restorations on 18 subjects) comparing the relative effectiveness of All-in-One dental adhesive iBOND Self Etch (iBSE, Heraeus Kulzer GmbH, Germany) with the effectiveness of GLUMA Comfort Bond + Desensitizer (GLUMA) of Heraeus Kulzer in posterior class I and II composite restorations. The study was partially supported by a grant from Heraeus Kulzer GmbH.

Dr. Lee's collaborators on the research were Michael Meharry, DDS, MS, associate professor, restorative dentistry; Michele Arambula, technical coordinator, Center for Dental Research; Harvey D. Lee, DDS, assistant professor, Department of Pediatric Dentistry; and Yiming Li, DDS, PhD, MSD, director, Center for Dental Research.



Dr. Lee chats at the LLUSD convention exhibit with one of IADR's 4,000 attendees.

As Dr. Lee's photos indicate, the trip was not all work. He had the opportunity to enjoy sight seeing that included the nearby Iguaçu Falls and a tour of Rio de Janeiro.



Split into about 275 discrete falls and islands, at a rate of 61,660 cubic feet per second, Iguaçu Falls boasts the second largest average water flow in the world.

ASDA student leaders convene at district meeting hosted by Dugoni School

Reprinted with permission from University of the Pacific Arthur A. Dugoni School of Dentistry News and Events, October 16, 2012

More than 100 students, faculty and notable guests from California's dental profession recently gathered at the Arthur A. Dugoni School of Dentistry in San Francisco for the American Student Dental Association (ASDA) District 11 annual meeting. ASDA's District 11 encompasses all California dental schools, including programs at Loma Linda University, Pacific, UCLA, UCSF, USC and Western University.

The event was held during the weekend of October 5-7. Activities included presentations, guest lectures, tours, social gatherings and a vendor exhibit fair. Danielle Marquis, Class of 2013 and this year's ASDA District 11 trustee, spearheaded the event's coordination.

Invited guests from the California Dental Association (CDA) hosted breakout sessions focused on topics such as oral health access barriers and the current scope of regulations in dentistry. Speakers from the CDA included Dr. Daniel

Davidson, CDA president; Dr. Carol Summerhays, CDA Foundation co-founder and ADA District 13 trustee; Gayle Mathe, CDA director of policy development; and Teresa Pichay, CDA practice analyst.

Andrew Smith, ASDA's governance and advocacy manager, also attended the meeting and spoke to attendees about the current state of dental education and ASDA's activities. Speakers from the Dugoni School of Dentistry included Dean Patrick J. Ferrillo, Jr. and Dr. Craig Yarborough, associate dean for institutional advancement; and numerous student ASDA leaders.

"It was fun to see so many dental students from throughout California representing their schools at the district meeting," said Marquis. "The meeting was a great chance for students to learn about what's going on in dentistry in California, hear about other school programs, learn more about ASDA, and meet other student leaders."



LLUSD representatives to the ASDA meeting (L-R): Urie Lee (Class of 2016), Douglas Baasch (Class of 2014), Thomas Schaffer (Class of 2015), James Fedusenko (Class of 2016)

Charles Goodacre honored by College of Prosthodontists

Loma Linda University School of Dentistry Dean Charles J. Goodacre, DDS, MSD, has been selected by the American College of Prosthodontists to receive the Distinguished Lecturer award during the first weekend in November at the forthcoming American College of Prosthodontists Annual Session in Baltimore, Maryland.

The American College of Prosthodontists, through its awards program, formally recognizes individuals whose contributions to the specialty or to the College are outstanding and substantial. Dr. Goodacre was recognized November 2012, during the Annual Awards and President's Dinner.

Dr. Goodacre is a diplomate of the American Board of Prosthodontics and is a past president of the American College of Prosthodontists, the American Board of Prosthodontics, and the Academy of Prosthodontics.



Dr. Charles Goodacre

Michael Boyko awarded fellowship in Academy of Dentistry International

Michael Boyko, SD'75A, assistant professor, Department of Oral and Maxillofacial Surgery at LLUSD since 1982, and director, Careers in Dentistry, was awarded Fellowship in the Academy of Dentistry International during convocation ceremonies held at the USA Section Meeting on October 21, 2012. Fellowship in the Academy is bestowed on dentists who have distinguished themselves in their profession and are nominated for the award by a fellow of the Academy.

The Academy of Dentistry International is an honor society for dentists dedicated to sharing knowledge through continuing education in order to elevate the standard of dental care, better serve the dental health needs, and improve the quality of life throughout the world.

In addition to membership in the Academy, Dr. Boyko is also a member of the American Dental Association, Tri-County Dental Society, California Dental Association and a Fellow of the Pierre Fauchard Academy.



Dr. Michael Boyko

Reginald Bedney

Reginald Clark Bedney, SD'77, was born on January 30, 1933, in Monrovia, California, the youngest of five children born to William and Maude Clark Bedney.

Dr. Bedney attended Los Angeles Adventist Academy and Pasadena City College before serving in the United

States Air Force. Later, while completing pre dental studies at Oakwood College (now University) in Huntsville, Alabama, he taught golf in the physical education department.

Graduating in LLUSD's dental class of '77, he joined a practice with his brother Donald in Monrovia and Claremont, California.

He would practice dentistry until his retirement in 1991.

Dr. Bedney was an avid golfer and was a golf-pro for Brookside Country Club in Pasadena, California, and the Altadena Country Club in Altadena, California. He was also the director of the Junior Golf Program for American Golf.

An active member of the Berean Seventh-day Adventist Church in Los Angeles, California, Dr. Bedney taught his last Sabbath School lesson on August 25, 2012, the day before his death.

Dr. Bedney is survived by five children: Reginald Bedney, Jr, Linda Bedney, Michael Bedney, Dayna Bedney, and Ashley Shurney; by four grandchildren; by nieces Cheryl Bedney-Moore (LLUSDH'77, LLUSH,'80); Donna M. Bedney (LLUSN'83); Kathleen Woodfork-Coleman (LLUSH,'80); by nephews: G. David R. Bedney, MD (LLUSH,'85) and his wife Marcia Neil-Bedney, (LLUSM'87); Brian C. Bedney (LLUSAH'83); and Daniel Bedney, (LLUSM,12); by one sister-in-law Gloria Marie (Tillman) Bedney, widow of Donald L. Bedney, MD (LLUSPT'62); by one brother-in-law, Robert L. Woodfork, Sr. (retired field secretary of the General Conference of Seventh-day Adventists), and a host of nieces, nephews, cousins, friends and loved ones.



Dr. Reginald Bedney

Jess Hayden, Jr.

A pioneering LLUSD faculty member, Jess Hayden Jr., DMD, MS, PhD, died October 19, 2012, in Loma Linda, California. One of a corps of dentists invited in 1953 by Dean Webster Prince to join the faculty of the new LLUSD, Dr. Hayden became a colleague and professional partner of Niels Bjorn Jorgensen, DDS, with whom he co-authored *Sedation, Local and General Anesthesia in Dentistry* (1966), which became a major contribution to the world of dentistry.

Born January 30, 1926, in Eugene, Oregon, Dr. Hayden completed dentistry in 1947, becoming the youngest person at the time to

graduate from the University of Oregon's dental program. He earned a pediatric dentistry master's (1955) at the University of Michigan, and a doctorate in anatomy at LLU (1962). A U.S. Navy captain during the Korean War 1950-53 and again during the first Persian Gulf War 1990-91, Dr. Hayden's active and reserve navy service totaled 41 years.

Dr. Hayden was married to Esther Matthews from 1951 to 1989. He met Anita Rockwell in 1993 and married her in 1996.

In addition to private dental practices in Eugene, Oregon, and Denver, Colorado, Dr. Hayden was a research fellow in dental anesthesia at the Children's Hospital of Los Angeles (1974), and a senior clinical fellow at the University of Colorado Medical Center (1978). He held academic appointments with the United States Navy, VI Fleet; University of Michigan; Royal Dental College, Aarhus, Denmark; the University of Iowa; and Loma Linda University Schools of Medicine and Dentistry, where he taught anatomy.

Dr. Hayden is survived by his wife Anita; his children—Roderick of VanNuys, California, Gregory (wife Elaine) of Dalton, Georgia, Joel (wife Linda) of Billings, Montana, and Janie MacArthur (husband John) of Portola Valley, California—by three stepchildren—Janell Ehrler LLUSN'88 (husband Todd, LLUSD, 2002), of Redlands, California; Jill Campbell of Loma Linda, and Steve Campbell of Loma Linda—six grandchildren, five step grandchildren, and two great-grandchildren.



Dr. Jess Hayden, Jr.

Virgil Heinrich

A long-time resident of Redlands, California, **Virgil Heinrich**, SD'61, MS'64, came to California a year after his birth on January 27, 1935, in Woodworth, North Dakota. He would return with his parents to North Dakota at the age of seven, then seek pre-dentistry courses at Pacific Union College, where he



Dr. Virgil Heinrich

graduated in 1957. Four years later when he earned his dental degree he was inducted into Omicron Kappa Upsilon, the national dental honor society.

During three ensuing years Dr. Heinrich practiced with Dr. Harold Schnepfer in Rialto while completing an orthodontics residency. He combined teaching at the School of Dentistry (Janu-

ary 1967 to September 1995) with his orthodontics practice in Redlands, California.

When his son Bruce (SD'84; MS'87) joined his practice, Dr. Heinrich began accepting invitations from Maranatha Volunteers International to participate in providing clinics and other facilities for under-served populations. After retiring, he and his wife, Ardis, went to Argentina on a dental mission; in 1993 the couple spent five weeks in Zimbabwe covering the practice of Dr. Milford Anholm (MS'62). In several Maranatha trips, Dr. Heinrich exhibited his fine construction skills to assist completion of the organization's projects.

Avid travelers, the Heinrichs returned to Africa on their fiftieth wedding anniversary with their sons and their families to visit Kenya and Tanzania. By that time the couple had visited every continent in the world, including Antarctica.

After enduring the lingering disability of Alzheimer's disease, Dr. Heinrich died on October 22, 2012, at his Redlands home. Mourning his death are his wife of 56 years, the former Ardis Petersen; his three sons—Bruce, SD'84, MS'87 (wife Coleen, LLUSN '81) of Redlands; Brent, LLU School of Business '85, of Redlands; and James, LLUSM '88 (wife Carolyn, LLUSN '84) of Laguna Niguel—and seven grandchildren.

Memorial gifts may be made to the Virgil Heinrich Family Endowment Fund of LLUSD, one of the projects Dr. Heinrich established to assist aspiring dental students.

Albert Martin

A life-time Californian, **Albert Martin**, SD'60, was born in Los Angeles on May 6, 1932. He completed high school at Lynwood Academy, and pre-dental studies at La Sierra College (now La Sierra University) in Riverside, California, before entering dentistry to graduate with the LLUSD class of '60. In 1963 he married Norma Williams, who joined him in his dental business. He would practice dentistry for 48 years.

Dr. Martin began dental practice in San Bernardino before establishing a long-term dental practice in Rialto, retiring in 2008. He also pursued charitable dental work in Mexico with his son Chip.



Dr. Albert Martin

Enhancing his self-imposed professional perfectionism were Dr. Martin's listening skills, as he gave attention to getting to know each of his patients. His enthusiasm for dentistry continued even when he suffered from physical disabilities. He accommodated orthopedic problems by sitting on a stool and using reinforcements on his arms while doing procedures. His patients recall his charismatic personality and fun-loving spirit.

Away from the office, Dr. Martin established a reputation for broad knowledge based on his avid reading habits. He also enjoyed collecting memorabilia, motorcycle riding, watching car races, attending car shows, going to the beach, snow skiing, traveling, musicals, singing, a good meal, and socializing with his family and friends. A member of the Loma Linda University Seventh-day Adventist Church, he continued his church connection in later years by listening to religious services via radio and satellite.

Mourning his death, which followed a heart attack on September 4, 2012, are his wife Norma of Rialto; his daughters Kari Marlowe (husband Brandon) of Santa Monica, California, and Krista Martin of Los Angeles, California; his sons, Albert (Chip) of Rialto, and John of Rialto; and three grandsons.

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